Planning and Strategy Committee of the Whole

8 May 2019

UNDER SEPARATE COVER ATTACHMENTS

ITEM 5.2

Item 5.2 Planning Proposal - West Jerrabomberra

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Planning and Strategy Committee of the Whole Meeting Attachment

8 MAY 2019

ITEM 5.2 PLANNING PROPOSAL - WEST JERRABOMBERRA

ATTACHMENT 1 PLANNING PROPOSAL FOR WEST JERRABOMBERRA - AMENDED NOVEMBER 2018 FOR EXHIBITION

Planning Proposal
West Jerrabomberra
Queanbeyan-Palerang Regional Council
October 2018

Ref: SF150180
C18150931

Offices: Council headquarters – 256 Crawford St
Bungendore Office – 10 Majara St
Braidwood Office – 144 Wallace St

Contact: **P:** 1300 735 025
E: council@qprc.nsw.gov.au
W: www.qprc.nsw.gov.au

Table of Contents

Introduction

Queanbeyan-Palerang Regional Council has prepared this planning proposal in order to zone additional land at West Jerrabomberra for employment uses, open space and environmental conservation purposes.

This planning proposal has been under consideration for a number of years and was previously being progressed only in respect of the land known as North Tralee to the south of Jerrabomberra Creek. It is now intended to progress this proposal as an amendment to *Queanbeyan Local Environmental Plan (LEP) (Poplars) 2013* which will also be subsequently renamed to *Queanbeyan LEP (West Jerrabomberra) 2019* when the plan is made.

The key outcomes of the proposal are to:

1. rezone land at North Tralee for employment related uses, namely IN2 Light Industry and B7 Business Park. A significant part of this area has also been identified as the likely location for a proposed Regional Sports Complex which is permissible under both zones,

2. rezone existing RE2 Private Recreation at South Poplars to B7 Business Park in order for the land to be used as a future school site, and

3. rezone existing RE2 Private Recreation land at North Poplars (previously identified for Regional Sports Complex) to B7 Business Park, primarily to replace the B7 Business Park at North Tralee now identified for the Regional Sports Complex.

Due to both North Tralee and The Poplars being located within the Australian Noise Exposure Forecast (ANEF) 20 contour for Canberra Airport, neither area is considered suitable for residential development. The land is however considered appropriate for employment and recreational related purposes. A map illustrating the respective ANEF contours against the site is shown at Appendix D.

The site is also considered to be conditionally suitable for educational establishments, provided appropriate acoustic attenuation is incorporated during construction, consistent with Australian Standard *AS2021-2015 Acoustics, Aircraft noise intrusion-Building siting and construction*. The school site is required to be provided under the endorsed State Planning Agreement applying to the land.

The land will also be zoned to reflect any environmental constraints on the site. The existing land zoned E2 Environmental Conservation on The Poplars will remain unchanged.

The land subject to this planning proposal comprises the following lots:

- Lot 1 DP 399170
- Lot 1 DP 1243031
- Lot 2 DP 1243031
- Lot 3 DP 819333
- Lot 1 DP 1126721
- Lot 2 DP 338637

- Lot 6 DP 719108
- Lot 12 DP 1135538
- Lot 1 DP 323002
- Lot 1 DP 333443
- Lot 1 DP 313299
- Lot 6 DP 239080
- Lot 3 DP 239080

The land is currently greenfield and is subject to three environmental planning instruments:

- *Queanbeyan Local Environmental Plan (Poplars) 2013*,
- *Queanbeyan Local Environmental Plan 1998*, and
- *Queanbeyan Local Environmental Plan (LEP) 1991*.

Lot 1 DP 323002 and Lot 1 DP 333443 are zoned 1(a) (Rural A Zone) under *Queanbeyan Local Environmental Plan (LEP) 1991*. This draft plan will formally repeal *Queanbeyan Local Environmental Plan 1991* in its entirety when made.

Lot 1 DP 313299, Lot 6 DP 239080 and Lot 3 DP 239080 are currently zoned 1(a) (Rural A Zone) under *Queanbeyan LEP 1998*.

The remaining lots are subject to the *Queanbeyan Local Environmental Plan (Poplars) 2013* and are currently zoned as B1 Neighbourhood Centre, B7 Business Park, RE2 Private Open Space and E2 Environmental Conservation.

The area subject to the planning proposal is shown on Map 1 below.

Map 1: Land Subject to the Planning Proposal

Part 1 Objectives and Intended Outcomes

As noted, the key outcomes of this planning proposal are to:

1. rezone land at North Tralee for employment related uses (namely IN2 Light Industry and B7 Business Park) as well as E2 Environmental Conservation, RU2 Rural Landscape and RE2 Private Recreation. A significant part of this area has also been identified as the likely location for a proposed Regional Sports Complex which is permissible under both zones,
2. rezone existing RE2 Private Recreation at South Poplars to B7 Business Park in order for the land to be used as a future school site, and
3. rezone existing RE2 Private Recreation land at North Poplars (previously identified for Regional Sports Complex) to B7 Business Park, primarily to replace the B7 Business Park at North Tralee now identified for the Regional Sports Complex.

This will provide a supply of employment and recreational lands to meet the needs of the local community into the future.

The site will also be zoned to accommodate relevant environmental constraints (riparian land and flood prone land).

Part 2 Explanation of Provisions

Renaming Queanbeyan LEP (Poplars) 2013 to Queanbeyan LEP (West Jerrabomberra) 2018 and increasing the area of land the existing plan applies to.

As noted, this proposal will be given effect by amending the existing *Queanbeyan Local Environmental Plan (LEP) (Poplars) 2013* by including the land known as North Tralee. It is intended to rename the new amended LEP to *Queanbeyan LEP (West Jerrabomberra) 2018* when the plan is made. *Queanbeyan LEP 1998* will no longer apply within these boundaries and *Queanbeyan LEP 1991* will be repealed in its entirety. The Land Application Map will be extended to include North Tralee as shown on Map 2 below.

Map 2 Land Application Map for West Jerrabomberra


Included
LGA Boundary
Cadastre

Rezoning new land at North Tralee for employment, rural landscape, open space and environmental conservation uses

Employment Zones

In respect of North Tralee, the recommended zones for those parts of the site proposed for employment related uses are a combination of IN2 Light Industrial zone and B7 Business Park zone. These zones provide for a suitable range of employment related uses. The proposed IN2 Light Industrial zone has an area of 29.25ha and the proposed B7 Business Park has an area of 9.62ha. Both areas are located just south of Jerrabomberra Creek and occupy some of the flattest land in this area. This has also meant that it is an attractive location for a Regional Sports Precinct which is permitted with consent in both proposed zones. The area of the proposed Regional Sports Facility is approximately 15ha.

Once the final concept for the Regional Sports Facility has been agreed in the future, the land will be zoned to a more suitable use (such as public recreation).

The land use table for the IN2 Light Industry zone will be adopted from the *Queanbeyan Local Environmental Pan (QLEP) 2012*. For the B7 Business Park zone the land use table from the *Queanbeyan Local Environmental Plan (Poplars) 2013* will be adopted.

Environmental and Open Space Zoning

The land will also be zoned to accommodate any environmental constraints on the site. The southern part of the creek bed (Jerrabomberra Creek) will be zoned E2 Environmental Protection with a width of 40 metres from the centreline of the creek bed consistent with the current zoning of The Poplars land to the north. This is to ensure the riparian lands within the subject site are suitably protected and conserved for their environmental values. A small area of land north of the creek will also be zoned E2 Environmental Conservation consistent with the zoning of The Poplars site to the north and ensuring an 80 metre corridor for the entire length of the creek that passes through the site. The additional area of land to be rezoned E2 Environmental Conservation under this planning proposal represents an area of 6.17ha.

A small area of land on the northern side of the creek is also proposed to be zoned RE2 Private Recreation consistent with the existing zoning on The Poplars site to the north and recognising it is largely unsuitable for other uses. This represents an area of 1.24ha.

The land use tables for the E2 Environmental Protection zone and the RE2 Private Recreation zone will be adopted from the *Queanbeyan Local Environmental Plan (Poplars) 2013*.

Zoning of Flood Affected Land

It is proposed land below the flood planning level (ie, the 1:100 Average Recurrence Interval (ARI) event plus 0.5 metre freeboard) on the southern side of the creek (and located outside the proposed E2 zone) be zoned RU2 Rural Landscape. This is consistent with the existing underlying zone under the *Queanbeyan Local Environmental Plan 1998* (ie, the 1(a) (Rural A Zone). Accordingly, any flood affected land will retain an underlying rural zone. The proposed RU2 land represents an area of 10.72ha. The land use table for the RU2 Rural Landscape zone will be adopted from the *Queanbeyan Local Environmental Pan (QLEP) 2012*.

Both the Council and the proponents have previously undertaken studies and investigations in respect of flooding potential on the site. At one time it was proposed that Jerrabomberra Creek be widened to reduce flood affectation, however given the significant environmental impacts this would have created, Council and State Government agencies have determined

all land identified for employment related development must be located outside the flood planning area.

Due to the planning history associated with the area, some of the studies that were prepared covered all of the current site and some covered only parts of the site. Further, some of these studies were prepared for the Council whilst others were prepared for the proponents. In order to ensure Council had independent advice in respect of any flooding of the site and the extent of this flooding, Council engaged a suitably qualified consultancy (WMA Water) to confirm whether the mapping provided by the proponents in previous studies was an appropriate basis to then determine a flood planning level.

One previous study undertaken for the site was *Flood Study and Riparian Corridor Assessment Jerrabomberra Creek January 2010 - Brown Consulting* (the Brown Study) prepared for the proponents in 2010. That study covered the entire site subject to the current planning proposal and included maps that illustrated various flooding events including a 1:100 year ARI flooding event.

Council subsequently engaged WMA Water to review the Brown Study. WMA Water concluded (February 2016) that while the modelling used by Brown Consulting was reasonable and a suitable basis for determining flood planning levels, some further refinement of the model was desirable to better account for the potential effect of the disused Goulburn-Bombala Railway and associated infrastructure across Jerrabomberra Creek.

This has now been undertaken by Calibre Consulting (formally Brown Consulting) including adding a 0.5 metre freeboard in order to correctly identify the flood planning level. These results were again independently reviewed by WMA Water on Council's behalf. WMA Water subsequently concluded (September 2016) that:

> *"the assumptions and modelling methods applied have been determined to be generally conservative. This coupled with the characteristics of the control formed by the Railway embankment and the steep terrain on the surrounding floodplain, indicates that the model results are suitable for rezoning assessment purposes when used in conjunction with a 0.5 m freeboard".*

Accordingly Council intends to apply the 1:100 ARI plus 0.5 metre freeboard as set out in the WMA Report as the basis for determining where land will be rezoned for employment related purposes. Both the WMA Water and Calibre (Brown) studies are shown at Appendix B

It is also intended to introduce the model flood planning clause into the LEP.

The rezoning of land currently zoned RE2 Private Recreation to B7 Business Park on The Poplars

The employment land subject to the *Queanbeyan LEP (Poplars) 2013* is zoned B1 Neighbourhood Centre on North Poplars which allows for some retail/commercial premises and B7 Business Park on South Poplars which is subject to a proposed technology park and innovation hub.

As the IN2 Light Industry zoned land at North Tralee is now earmarked for a Regional Sports Facility it has meant that further employment land of approx 15ha is required to provide suitable local employment options. Accordingly Council has determined that rezoning the existing RE2 Private Recreation at North Poplars (4.92ha) for employment related uses will assist in addressing some of this demand. However, Council is of the view that rezoning this site to B7 Business Park is a better planning outcome on this site rather than replacing it with an IN2 Light Industry zone given the site represents an important visual entrance to the suburb of Jerrabomberra.

In addition, it is proposed to also rezone 11.28ha of existing RE2 Private Recreation land at South Poplars to B7 Business Park. This is to provide both for the 3ha school site as required by the Department of Education, and also, to rezone the balance of the surrounding land consistent with the existing adjoining zone (ie, B7 Business Park).

Overall, approximately 15ha of IN2 Light Industry land that will be taken up by the Regional Sports Facility at North Tralee, however will be replaced with 16.2ha of B7 Business Park land at both North and South Poplars. This ensures the supply of employment land in the broader urban release area is maintained.

Indicative zoning maps showing the existing and proposed zones in West Jerrabomberra are shown below and at Appendix A.

Existing Zones *Proposed Zones*

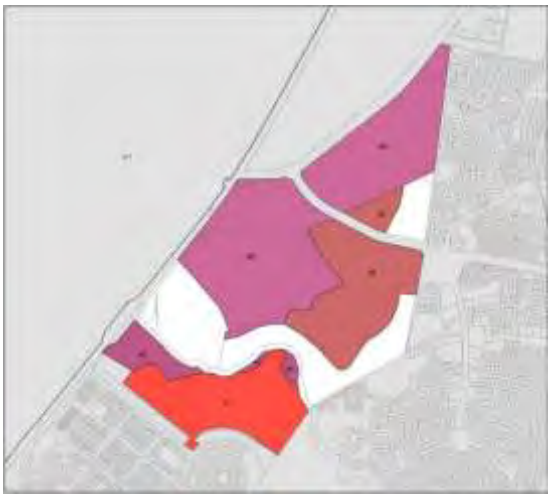
Indicative Lot Size Maps

The Planning Proposal will also introduce new lot sizes for the land in North Tralee and amend the existing lot size maps under the *Queanbeyan LEP (Poplars) 2012*. The minimum lot sizes proposed are 2,000m^2 for both the B7 Business Park and IN2 Light Industrial zones (V), 20ha for the E2 Environmental Conservation (AB) and 80ha for the RU2 Rural Landscape land. No lot size is proposed for either the RE2 Private Recreation zone or that part of the E2 Environmental Conservation zone that covers the riparian land.

The existing and proposed lot sizes for West Jerrabomberra are shown over and at Appendix A.

Existing Lot Sizes

Proposed Lot Sizes



Indicative Height of Buildings (HOB)

The existing Height of Buildings (HOB) Map will be extended to cover the additional area of North Tralee and will propose a 12m building height over the IN2 Light Industry, B7 Business Park and RU2 Rural Landscape zone (M). The small area of RE2 Private Recreation land will not have a height of building on the map similar to the existing RE2 and E2 land that follow the north side of Jerrabomberra Creek. The proposed HOB map is shown below and Appendix A.

Existing HOB Map

Proposed HOB Map

Indicative Floor Space Ratio Map

The existing Floor Space Ratio (FSR) Map for the *Queanbeyan Local Environmental Plan (LEP) (Poplars) 2013* will be extended to cover the area of North Tralee and be shown on the additional B7 land proposed on North and South Poplars. The proposed FSR is 1:1 (N). No FSR is proposed for the IN2 Light Industrial area. See below and Appendix A.

Existing FSR Map *Proposed FSR Map*

Indicative Land Reservation Acquisition Map

The existing Land Reservation Acquisition (LRA) Map for the *Queanbeyan LEP (Poplars) 2013* will be extended to cover the additional area of North Tralee with no land identified for reservation or acquisition at this time. See below and Appendix A.

Existing LRA Map *Proposed LRA Map*

Indicative Urban Release Area Map

The existing Urban Release Area (URA) Map for the *Queanbeyan LEP (Poplars) 2013* will be extended to cover the additional area of North Tralee. See below and Appendix A.

Existing URA Map *Proposed URA Map*

Indicative Riparian Land and Watercourses Map

The existing Riparian Land and Watercourses Map for the *Queanbeyan LEP (Poplars) 2013* will be extended to cover 40m from the centre of Jerrabomberra Creek in the North Tralee area. See below and Appendix A.

Existing WCL Map *Proposed WCL Map*

Indicative Local Clauses Map

The Visual and Acoustic Buffer Map will be replaced as a Local Clauses Map which will relate to the local clause "Land adjoining Hume Industrial Area and Goulburn/Bombala Railway Line". It will extend the visual and acoustic buffer into the North Tralee area. It will be annotated on the map as "Visual and Acoustic Buffer" and shown as a blue line to align with the *Queanbeyan LEP (South Tralee) 2012* to the south. See below and Appendix A.

Existing Local Clause Map *Proposed Local Clause Map*

Other Clauses

Other existing local clauses under *Queanbeyan LEP (Poplars) 2013* intended to be carried forward into new plan when drafted (but that do not require specific maps) include:

- Earthworks,
- Flood planning,
- Airspace operations,
- Development in areas subject to aircraft noise, and
- Essential services.

Access

The site will be accessed by the proposed Northern Entry Road (linking north to Tompsitt Drive) when constructed. It is proposed the Northern Entry Road will run along the zoning boundary between the proposed IN2 and B7 zone providing suitable access to both areas.

Part 3 Justification

Section A – Need for the planning proposal

The planning proposal will give effect to the *Queanbeyan Residential and Economic Strategy 2015-2031*. This is to ensure the supply of suitable employment lands into the future.

1) Is the planning proposal a result of any strategic study or report?

Yes. The site is contained within the *Queanbeyan Residential Economic Strategy 2015-2031*. A copy of the Strategy can be found at http://www.qprc.nsw.gov.au/Building-Development/Planning-Zoning/Studies-strategies#section-4

The *Residential and Economic Strategy 2015-2031* was endorsed by the NSW Department of Planning and Environment in July 2016 and the land was identified as having potential for employment lands uses. It is also supported by the local environmental study (and supporting addendums) prepared for the site.

2) Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The planning proposal is the best means of delivering the intended outcomes set out under the *Queanbeyan Residential and Economic Strategy 2031* for this area. It is also considered better to progress development in this area as one planning proposal rather than each landowner progressing each area independently.

Infrastructure and servicing will determine development staging in line with the Structure Plan for South Jerrabomberra which looks at servicing the development in a southerly direction from North Poplars.

Section B – Relationship to strategic planning framework

3) Is the planning proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

The *South East and Tablelands Regional Plan 2036* is the relevant regional strategy. The planning proposal is considered to be consistent with the Strategy. This strategy in *Direction 12:- Promote business activities in urban centres*, states that strategic and local centres will be the focus for more employment uses with good transport connections to Canberra and Sydney. The West Jerrabomberra area is well positioned in distance to Canberra and the Monaro Highway – recognised as a strategic transport link and to Canberra airport.

The planning proposal gives effect to Direction 12 and will create additional employment lands with a mix of industrial, business and office use including a technology park and innovation hub. Land at The Poplars has already been zoned for employment lands and rezoning land at North Tralee is a logical extension. The draft LEP will rezone the land to enable uses such as business, light industry and other ancillary uses to ensure the economic sustainability of Queanbeyan. This is considered to be particularly appropriate given that the supply of suitable land within the LGA is extremely limited.

4) Is the planning proposal consistent with a council's local strategy, or other local strategic plan?

As previously noted, the proposal is consistent with the *Queanbeyan Residential and Economic Strategy 2015-2031,* as endorsed by the Department of Planning and Environment.

5) Is the planning proposal consistent with applicable State Environmental Planning Policies?

The planning proposal is not considered to be inconsistent with any SEPPs at this time (see Table 1 over).

Table 1

SEPP No.	SEPP Title	Applicable	Relevant	Consistent	Comment
SEPP55	Remediation of Land	YES	YES	YES	A preliminary site investigation was carried out as part of the original Tralee LES in 2005. This report indicated that some locations on the site have been exposed to historical uses that may have introduced potential contaminants associated with the former speedway. The proponent has now undertaken further work and has provided a report confirming the site is generally suitable for the intended uses subject to recommended actions occurring prior to development (including some material being excavated, appropriately classified and removed from the site). This report is show at Appendix C.
-	SEPP (Rural Lands) 2008	YES	YES	YES	The planning proposal is considered to be consistent with both the Rural Planning Principles and the Rural Subdivision Principles listed in the Rural Lands SEPP.

6) Is the planning proposal consistent with applicable Ministerial Directions (s.9.1 directions)?

The planning proposal is not considered to be inconsistent with any s9.1 directions at this time. See below.

Direction 1.1 Business and Industrial Zones

The relevant objective of this direction is to encourage employment growth in suitable locations, and to ensure the supply of employment land is not reduced. The planning proposal is consistent with the objectives of this direction as the proposal seeks to rezone the land predominantly for employment purposes. The planning proposal is consistent with

an endorsed strategy approved by the Secretary of the Department of Planning and Environment (*Queanbeyan Residential and Economic Strategy 2015-2031*).

Direction 1.2 Rural Zones

The objective of this direction is to protect the agricultural production value of rural land. This planning proposal does include land within a rural zone but there are no significant agricultural production values on the land that warrant protection. In addition the planning proposal is consistent with an endorsed strategy approved by the Secretary of the Department of Planning and Environment (*Queanbeyan Residential and Economic Strategy 2015-2031*).

Direction 1.5 Rural Lands

The land subject to this planning proposal has little agricultural value and is zoned for environmental conservation bordering the Jerrabomberra Creek only. The land which was found to be flood prone is proposed to be zoned RU2 Rural Landscape. A significant portion of the Study Area will be retained for environmental conservation purposes and is consistent with this Direction.

Direction 2.1 Environmental Protection Zones

The objective of this direction is to protect and conserve environmentally sensitive areas. The draft plan proposal seeks to rezone the riparian areas of the site to E2 Environmental Conservation. The proposal is considered consistent with the direction.

Direction 2.3 Heritage Conservation

The objective of this direction is to conserve items, areas, objects and places of environmental heritage significance and indigenous heritage significance. A cultural heritage assessment was undertaken as part of the original LES for North Tralee which included assessments of both Aboriginal and European Heritage. Whilst no Aboriginal artefacts where found as part of that study, it did identify a potential archaeological deposit south of Jerrabomberra Creek and has recommended any areas proposed for future development should have test pits dug prior to any development to determine this.

In respect of European Archaeology, most activity was associated with the operation of the Fraser Park speedway in the 1970s and is of low heritage significance. However, further historical research has recently been done in relation to the former canteen at the Fraser Park Speedway. That research concluded that the former canteen potentially has some heritage value although a formal study would be needed to confirm this. Accordingly, Council intends to retain the former canteen on site at this time (and fenced) until a more detailed heritage study is carried out, at which time a final decision will be made in respect of whether to list the item. The former canteen is located on land intended to be dedicated to Council for the Regional Sports Field.

Direction 3.4 Integrating Land Use and Transport

The objective of this direction is to ensure that urban structures, building forms, land uses locations, development designs, subdivision and street layouts achieve the following planning objectives:

(a) Improving access to housing, jobs and services by walking, cycling and public transport; and

(b) Increasing the choice of available transport and reducing dependence on cars; and

(c) Reducing travel demand including the number of trips generated by development and the distances travelled, especially by car; and

(d) Supporting the efficient and viable operation of public transport services; and

(e) Providing for the efficient movement of freight.

Access to the employment lands at North Tralee will be via a new northern entry road from Tompsitt Drive which will link the employment lands at The Poplars with the employment lands at North Tralee. It is intended public transport will service the area in the future. Further the *South Jerrabomberra Development Control Plan 2014* requires that consideration be given to an overall transport movement hierarchy showing the major circulation routes and connections to achieve a simple and safe movement system for private vehicles, public transport, pedestrians and cyclists. This clause will apply to the Study Area and will ensure that the land use and the design of transport networks are integrated. The planning proposal meets the objectives of this direction in that any development proposed for South Jerrabomberra will provide access to housing, jobs and services.

Direction 3.5 Development Near Licensed Aerodromes

The site is wholly located within the ANEF 20 contour and partly within the ANEF 25 contour as shown at Appendix D.

No residential development is proposed under the draft plan. The proposed school site is located between the ANEF 20 and ANEF 25 contours and is conditionally acceptable subject to appropriate noise attenuation being included into the school design.

Relevant model clauses for both aircraft noise and aircraft operations will be contained within the draft plan.

Council will be consulting with both the Commonwealth Department of Transport and Regional Services and Canberra Airport.

Direction 4.3 Flood Prone Land

The objectives of this direction are:

a) to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the *Floodplain Development Manual 2005*, and

b) to ensure that the provisions of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.

As previously noted, studies have been undertaken to determine the extent of flooding from Jerrabomberra Creek. Importantly, no land below the flood planning level (1:100 ARI plus 0.5 metre freeboard) is proposed to be rezoned for urban purposes. All flood prone land associated with Jerrabomberra Creek will be zoned E2 Environmental Conservation or RU2 Rural Landscape (consistent with the underlying rural zone at this time).

The draft plan is considered to be consistent with this direction.

Direction 4.4 Planning for Bushfire Protection

The objectives of this direction are to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas; and to encourage sound management of bush fire prone areas.

Under this direction Council is required to consult with the Commissioner of the NSW Rural Fire Service following receipt of a Gateway determination and prior to undertaking a community consultation. This will be undertaken.

Direction 5.10 Implementation of Regional Plans

The objective of this direction is to give legal effect to the vision, land use strategy, goals, directions and actions contained in Regional Plans.

The *South East and Tablelands Regional Plan 2036* is the relevant regional strategy. The planning proposal is considered to be consistent with the Strategy.

Section C – Environmental, social and economic impact

7) Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

A study into the ecology and natural heritage of the North Tralee site was carried out as part of the background local environmental study. The study concluded that most of the site has been cleared of native vegetation and been sown with pasture plants and used extensively for cultivation and stock grazing. The disused Fraser Park Speedway and associated infrastructure occupies the western half of the site. The report states that overall the site is in poor ecological condition and is considered to have low conservation significance. Regardless it is intended to rezone riparian areas of the site E2 Environmental Conservation to ensure they are not further degraded by inappropriate uses.

8) Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

It is unlikely that there are any other environmental effects as a result of this planning proposal.

9) Has the planning proposal adequately addressed any social and economic effects?

The proposal seeks to create additional employment lands in accordance with the principles of the *Queanbeyan Residential and Economic Strategy 2031.* Rezoning of the site will ensure Queanbeyan's economic sustainability and deliver the relevant outcomes and directions of the *South East and Tablelands Regional Plan 2036*.

Section D – State and Commonwealth interests

10) Is there adequate public infrastructure for the planning proposal?

Access to the site will be provided via a new road and intersection from Tompsitt Drive which will create a connection from Poplars through to the proposed employment lands at North Tralee. A concept development application for this road link has been approved along with the detailed stages including a bridge over Jerrabomberra Creek. Construction of the intersection is imminent. Other infrastructure requirements will be resolved as the development of the site progresses.

The Department of Planning and Environment has advised a satisfactory arrangements clause in respect of State infrastructure is not required.

11) What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?

Consultation with public authorities has occurred in the past and the plan has previously been amended to address the issues raised.

Further consultation with public authorities is proposed in respect of the revised plan and this planning proposal.

Part 4 Mapping

Relevant maps for West Jerrabomberra will be prepared in accordance with the requirements and guidelines of the Department of Planning and Environment. The maps proposed to accompany the draft plan are shown at Appendix A and include:

- zoning map,
- height of buildings map,
- minimum lot size map,
- floor space ratio map,
- riparian land and watercourse maps,
- land application map,
- land reservation acquisition map, and
- local clause map
- urban release area map.

Part 5 Community Consultation

It is intended to publicly exhibit the draft plan for a period of 28 days.

Agency consultation is proposed with the following stakeholders:

- NSW Department of Education
- NSW Office of Water
- NSW Department of Primary Industries
- NSW Roads & Maritime Services
- NSW Rural Fire Service
- NSW Office of Environment and Heritage
- John Holland Rail P/L
- Canberra Airport
- ACT Government - Environment and Planning Directorate
- Commonwealth Department of Transport and Regional Services

Part 6 Project Timeline

It is anticipated that the planning proposal will take up to 9 - 12 months to finalise. An indicative timeline is provided below.

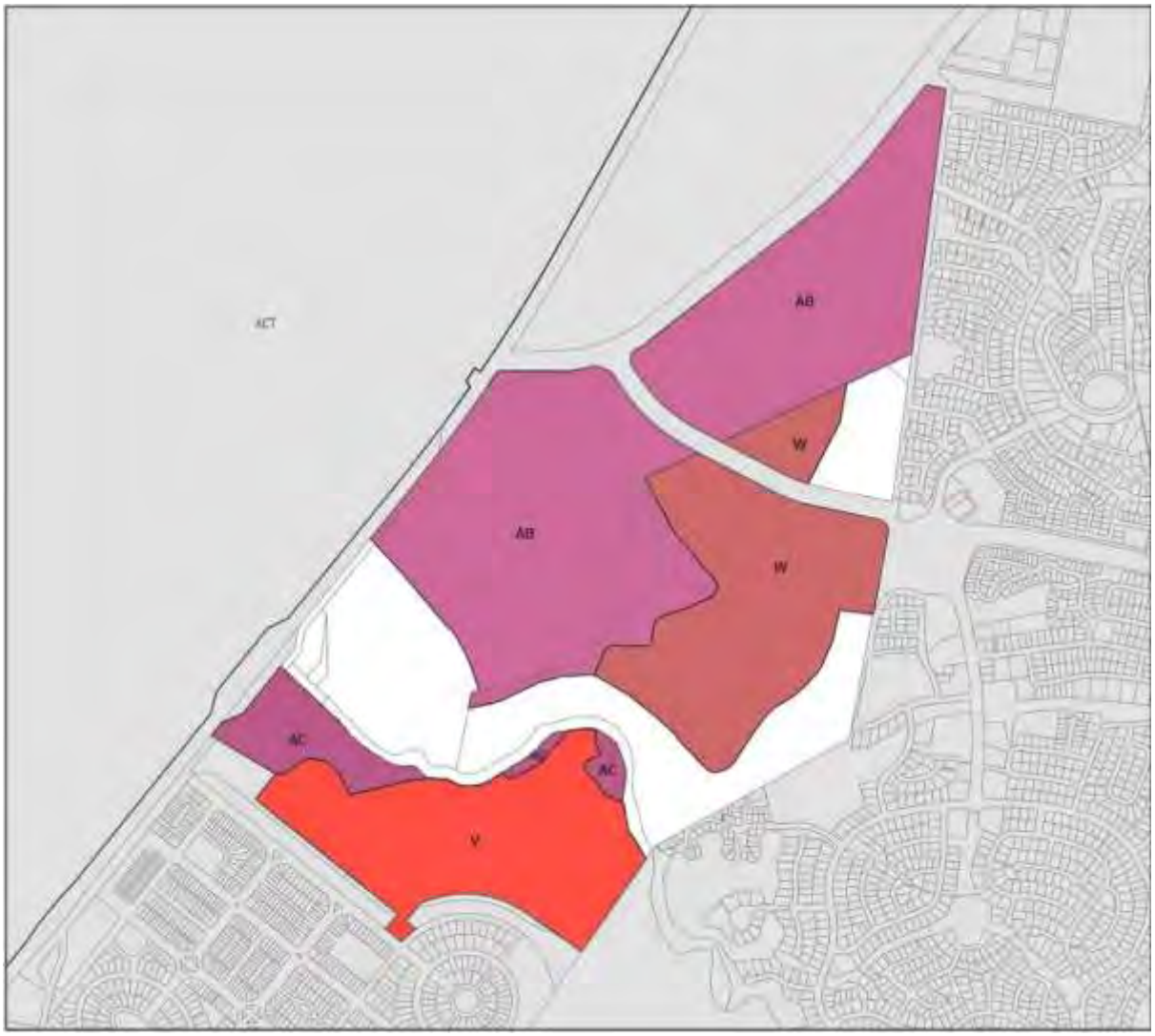
#	Action	Estimated Timeline	Responsibility
1	Forward to DPE for Gateway	November 2018	Council
2	Government agency consultation	December 2018	Council
3	Public exhibition	February 2019	Council
4	Date of Public Hearing (if applicable)	N/A	N/A
5	Consideration of submissions	March 2019	Council
6	Assessment of proposal post-exhibition	March 2019	Council
7	Report to Council	April 2019	Council
8	Mapping and Parliamentary Counsel liaison	April 2019	Council
9	Anticipated date Council will make the plan	May 2019	Council
10	Anticipated date Council will forward the final Planning Proposal to DPE for notification	May 2019	Council
11	Anticipated date LEP will be notified	May 2019	Parliamentary Counsel's Office and DPE

Appendix A – Draft Maps

Draft Zoning Map

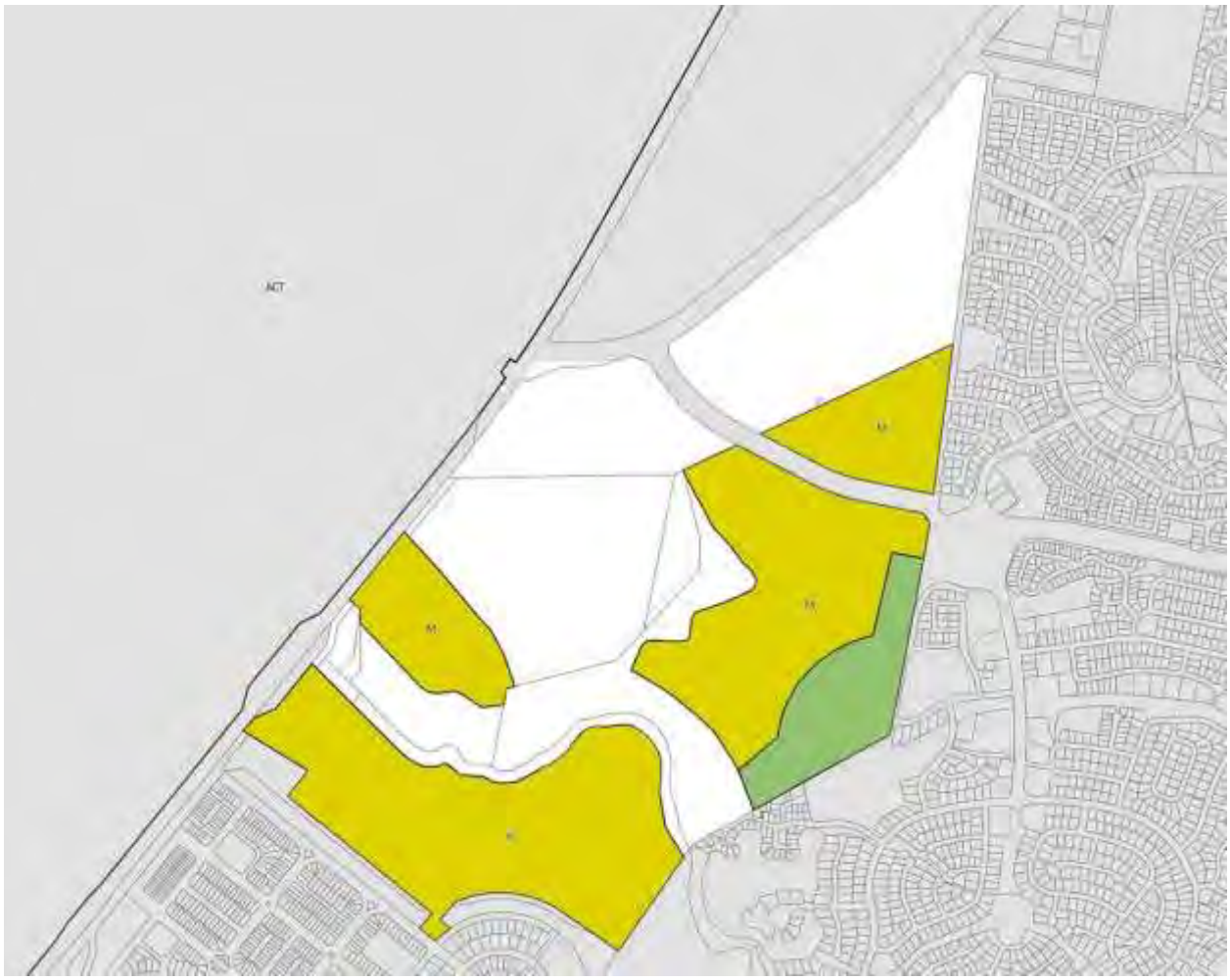
Zones
RU2 – Rural Landscape Zone
RE2 – Private Recreation Zone
E2 – Environmental Conservation Zone
B1 – Neighbourhood Centre Zone
B7 – Business Park Zone
IN2 – Light Industry

Lot Size Map



Lot Sizes
V – 2000m^2
W – 4000m^2
AB – 20 hectare
AC – 80 hectare

Height of Buildings Map



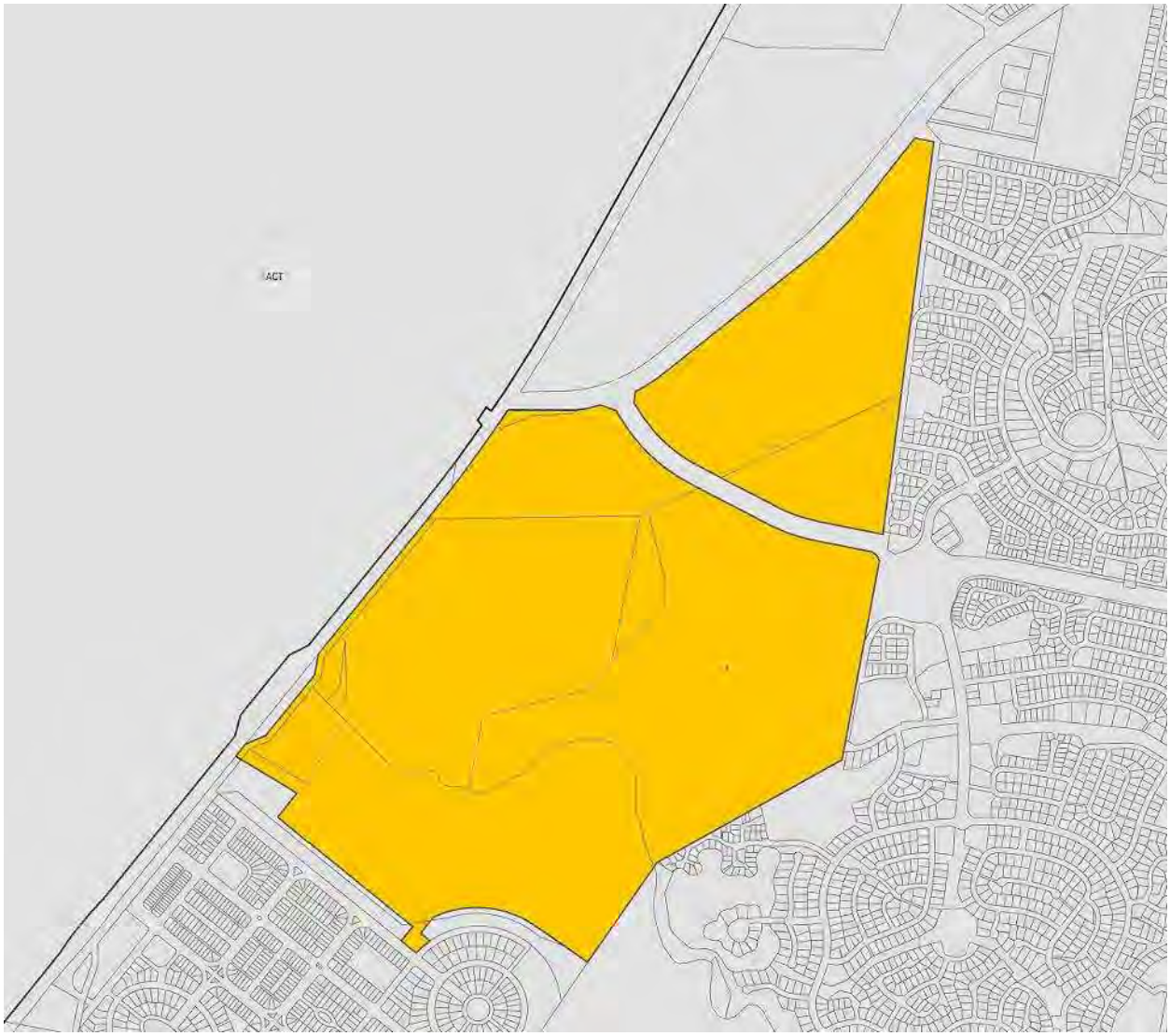
Height
I - 8.5 metres
M – 12 metres

Floor Space Ratio Map

FSR
N – 1:1

Land Reservation Acquisition Map

Urban Release Area Map



Riparian Lands and Watercourses

Local Clause Map

Land Application Map

Appendix B - Calibre Flood Study January 2010 and WMA Water Review February 2016 & September 2016

Appendix C – Site Investigation for Contamination Douglas Partners August 2018

Appendix D – ANEF Contours Over West Jerrabomberra

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Planning and Strategy Committee of the Whole Meeting Attachment

8 MAY 2019

ITEM 5.2 PLANNING PROPOSAL - WEST JERRABOMBERRA

ATTACHMENT 2 SUMMARY AND ASSESSMENT OF SUBMISSIONS

Summary and Consideration of Submissions from Public Exhibition and Government Agency Consultation – West Jerrabomberra Planning Proposal

Submission Name	Submission	Response	Action
NSW Rural Fire Service	The NSW RFS notes that the planning proposal applies to land mapped as bush fire prone by Council. The NSW RFS has no objection to the planning proposal proceeding and provides the following comment: *'Future development applications on bush fire prone lands will be required to comply with the relevant provisions of Planning for Bushfire Protection'*.	Compliance with the relevant provisions of the *Planning for Bushfire Protection* guidelines will be a requirement at the DA stage for development in West Jerrabomberra.	No changes be made as a result of this submission.
NSW Transport Roads and Maritime Services	RMS has no objections to the planning proposal in principle.		No changes be made as a result of this submission.
Canberra Airport	Canberra Airport supports the employment land proposal of Business Park and Retail and Services Precinct at The Poplars. However, it has expressed concerns regarding the proposed school site. Canberra Airport has previously advised the NSW Department of Education that it was not in a position to support a school in this location.	The planning proposal states that the site is also considered to be conditionally suitable for educational establishments, provided appropriate acoustic attenuation is incorporated during construction, consistent with Australian Standard *AS2021-2015 Acoustics, Aircraft noise intrusion-Building siting and construction*. The school site is required to be provided under the endorsed State	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
		Planning Agreement applying to the land.	
NSW Office of Environment and Heritage	The correspondence received from OEH advises that they do not support the planning proposal in its current form, the issues are summarised below: **Biodiversity** Any future development in the rezoned areas will be subject to the *Biodiversity Conservation Act 2016* and may require offsetting. OEH notes that most of the land zoned E2 within the planning proposal is currently protected in perpetuity as a Biobanking agreement site. It is therefore important to note that any future direct or indirect impacts resulting from this planning proposal will need to be wholly contained within the rezoned B7 and IN2 areas, this includes all asset protection zones and any areas required for retention ponds. **Aboriginal cultural heritage** There are recorded Aboriginal objects in the proposed rezoning area. Some of these sites are recorded in land that is currently zoned and will remain E2 land. This may provide an opportunity to conserve these sites. Aboriginal sites and areas of potential archaeological deposits (PAD) have also been recorded in the proposed IN2, B7, RU2 and RE2 zoned land. OEH advises that additional studies for Aboriginal cultural heritage are required prior to future development of the site. While an Aboriginal Heritage Impact Permit (AHIP) is not required at the planning proposal stage, OEH	The matters raised in regard to Biodiversity and Aboriginal cultural heritage will be addressed at the DA stage. Council's planning approach to the issue of flooding has been to ensure all proposed development of the site is carried out above Council's standard Flood Planning Level, defined as the 1:100 ARI plus 0.5metre freeboard. This level generally applies to residential development only, however has also been applied to this land to ensure a conservative position is established in respect of potential flood impacts for future sports, business and light industrial uses proposed for the land. No residential uses are proposed on the subject land. There is no requirement under the respective NSW planning direction (ie *4.3 - Flood Prone Land*) that a Floodplain Risk Management Plan	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
	cannot commit to issuing an AHIP until they have results of an archaeological survey, test excavation, and the results of consultation with Aboriginal stakeholders completed in accordance with relevant guidelines. It is therefore recommended that comprehensive Aboriginal cultural heritage assessment is completed early as it will provide more certainty to all parties about the Aboriginal cultural heritage management requirements. OEH advises that not all AHIPs may be approved in the Queanbeyan Palerang local government area, given the cumulative impacts occurring to Aboriginal sites in the region and therefore increasing the significance of the remaining sites. **Floodplain Risk Management** OEH's Floodplain Unit does not support the planning proposal as a formal Floodplain Risk Management Plan has not been prepared for the site. The Unit has suggested that it is not appropriate for the land to be rezoned until a formal Floodplain Risk Management Plan has been developed for the Jerrabomberra Creek area. The Unit has also suggested the proposal is inconsistent with planning direction 4.6 Flood Prone Land in the absence of such a plan being prepared.	be prepared for all land prior to any land within a catchment being rezoned. The relevant planning guideline (*Guideline on Development Controls on Low Flood Risk Areas*) notes that unless there are exceptional circumstances, Council's should adopt the 100 year flood as the relevant flood planning level. It is noted OEH's Flood Unit have not formally objected to the planning proposal proceeding in this instance. Council previously engaged expert consultants (WMA Water) to peer review flood studies prepared by the developers of the land. These initial studies were undertaken to determine the extent of flooding from Jerrabomberra Creek. Further hydraulic modelling was recommended to Council by WMA Water which was subsequently undertaken and again independently reviewed. WMA Water have specialist expertise in hydrological studies of waterways and floodplains. They have advised Council that the	

Submission Name	Submission	Response	Action
		revised flood models used to inform the proposed zonings on the site are an appropriate and reasonable basis upon which to establish the Flood Planning Level for the site. As noted, no land below the flood planning level (1:100 ARI plus 0.5 metre freeboard) is proposed to be rezoned for urban purposes. All land below the flood planning level will be zoned E2 Environmental Conservation or RU2 Rural Landscape (consistent with the underlying rural zone at this time). Council is of the view the proposed flood levels are accurate, based on independently reviewed information, consistent with relevant State policy and and are a suitable basis to inform the future development of the site.	
Your Voice Submission 1	Great idea - but needs a link to be built to Dunn's creek road as a priority (i.e., build Dunn's creek road ASAP, then link it to the West Jerrabomberra estate). This will help reduce traffic impacts and allow flexible route planning.	Council's Traffic Studies indicate that Dunn's Creek Road will not be required until approximately 2035.	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
Your Voice Submission 2	Too much traffic being sent out onto Tompsitt Drive. Put in direct access to Lanyon Drive or Monaro Highway. Don't need any more retail or industry here. Just a High School.	Traffic studies have been carried out by Council and traffic management is being implemented in accordance with these studies. The planning proposal follows significant strategic background work as expressed in Council's *Residential and Economic Strategy* including supply and demand assessment of the need for employment lands uses. A high school is proposed for the area.	No changes be made as a result of this submission.
Your Voice Submission 3	The submitter states that pedestrian linkages require improvement linking Jerrabomberra and Karabar.	The comments are noted. As the development progresses, traffic and pedestrian management will be implemented in accordance with Council's traffic studies. The planning proposal in this instance does not cover land where these improvements are suggested.	No changes be made as a result of this submission.
Your Voice Submission 4	The submitter is supportive of the rezoning to IN2 Light Industrial and believes that there is a substantial need for this type of development due to there being no industrial zoned land in the ACT, and, due to the high ACT rates. The submitter is of the view industrial land is	The planning proposal identifies 14.25ha of IN2 Light Industrial land at North Tralee.	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
	needed, however does not see the need for additional B7 zoned land. *This is a great opportunity for QPRC and will open up a lot of other opportunities*.	The demand for suitable light industry land is acknowledged.	
Your Voice Submission 5	I support the proposal mostly but strongly object to the proposal to include zoning change to allow IN2 Light Industry. I do not think this is at all compatible with the proximity and outlook of the rural landscape - particularly as Hume is so close by and it does not need to creep onto the doorstep and outlook of many existing properties in Jerrabomberra.	The planning proposal identifies 14.25ha of IN2 Light Industrial land at North Tralee. As shown in the planning proposal, the proposed IN2 land will be separated from any existing residential land at Jerrabomberra by both the proposed B7 Business park zoned land and the Northern Entry Road. It is noted that the proposed IN2 land will be located at least 200m from any existing residential land at Jerrabomberra. It should also be noted 'light industries' are also a mandated permissible use in the B7 zone under the Standard Instrument, so remain a permissible use within that zone. 'Light industry' is defined as: ***light industry*** *means a building or place used to carry out an industrial* activity *that does not interfere with the amenity of the neighbourhood*	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
		by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise, and includes any of the following: high technology industry, home industry, artisan food and drink industry. Accordingly, 'light industries' cannot create any noise or air emissions that would impact on other uses on other lands. Potential visual impacts can be managed through suitable design requirements in planning controls. Council's experience is that recent developments on IN2 zoned land are of a relatively high urban design (such as Lorn Rd), and unlikely to contribute to visual blight in the neighbourhood.	
Your Voice Submission 6	This proposal appears to be a complete reversal of the October 2018 West Jerrabomberra Planning Proposal. The original proposal, identified the land as the likely location of the Regional Sports Facility, which has been promised funding by John Barilaro/State Government. It was identified as an ideal location due to its geographic features. In addition, it has a number of valuable environmental elements that contribute to the	It is still intended that the Regional Sport Facility will be located on this site. It is likely to be located on land zoned a combination of IN2 Light Industrial and RU2 Rural Landscape where it is a permissible use in each zone.	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
	Jerrabomberra Creek/Molonglo Catchment. The original proposal has many great public benefits which is why it was supported by so many stakeholders whereas the new proposal benefits purely the developers.	Land located 40m either side of Jerrabomberra Creek is intended to be zoned E2 Environmental Conservation in recognition of its riparian values.	
Your Voice Submission 7	Agrees in principle with the proposal for West Jerrabomberra. I am however, strongly opposed to light industrial zoning in the area.	The planning proposal identifies 14.25ha of IN2 Light Industrial land at North Tralee. As shown in the planning proposal the proposed IN2 land will be separated from any existing residential land at Jerrabomberra by both the proposed B7 Business park zoned land and the Northern Entry Road. It is noted that the proposed IN2 land will be located at least 200m from any existing residential land at Jerrabomberra. It should also be noted 'light industries' are also a mandated permissible use in the B7 zone under the Standard Instrument, so remain a permissible use within that zone. 'Light industry' is defined as: ***light industry*** *means a building or place used to carry out an industrial* activity that does not interfere with	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
		the amenity of the neighbourhood *by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise, and includes any of the following: high technology industry, home industry, artisan food and drink industry.* Accordingly, 'light industries' cannot create any noise or air emissions that would impact on other uses on other lands. Potential visual impacts can be managed through suitable design requirements in planning controls. Council's experience is that more recent developments on IN2 zoned land are of a relatively high urban design (such as Lorn Rd).	
Poplars Development P/L	Generally supportive of PP, however believe that IN2 zoning will compromise future use for proposed Regional Sporting Complex. The land identified for the complex should be zoned RE2 Private Recreation. In addition, the submission states that IN2 zone should be removed from the PP and Light industrial uses be prohibited in the B7 zone. This would provide a cohesive relationship within the landscape setting, surrounding	Once the final boundaries of the Regional Sports Field site have been identified, the site will be zoned to a more appropriate zone (such as RE1 Public Recreation) in the future. Light Industry is a mandated use under the Standard Template LEP in the B7 Zone and so Council is	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
	land uses and provide a future character commensurate with the locality.	not in a position to prohibit such land uses. As noted, 'light industry' by its definition cannot have an impact on the amenity of adjoining properties so there should be no offensive noise or emissions associated with any uses on this land. Potential visual impacts can be managed through suitable design requirements in planning controls. As noted, Council's experience is that more recent developments on IN2 zoned land are of a relatively high urban design (such as Lorn Rd), and unlikely to result in visual blight in the neighbourhood.	
Elton Consulting	Whilst the submission on behalf of the landowner is generally supportive of the PP, it is argues that a significant increase in land zoned B7 and significant decrease in IN2 land (due to the proposed regional sports facility) will result in Council not meeting the anticipated future demand for light industrial land into the future as set out in the Queanbeyan *Residential and Economic Strategy*. Notes whilst this is occurring, Council is potentially forgoing economic opportunities in favour of the ACT and Yass Valley.	The planning proposal identifies 14.25ha of IN2 Light Industrial land at North Tralee. The demand for suitable light industry land is acknowledged. It is important a variety of local employment options and services for the community are provided.	No changes be made as a result of this submission.

Submission Name	Submission	Response	Action
Knight Frank on behalf of Environa	The submission expresses concern about the land being zoned from 1(a) Rural A zone to IN2 Light Industry. The subject site adjoins the Environa land which is used for rural activities and has a northern boundary that will border the future northern entry road alignment. This will form the only separation between the Environa land the subject site. The submission expresses the view that the rezoning is contrary to the aims of the Planning Proposal which seeks to utilise these lands for a Regional Sporting Complex. This will mean that only a small isolated pocket if IN2 land will be created along with a small irregular shaped parcel of land zoned B7 Business Park. The submission also states that permitting light industrial uses in the B7 zone will compromise the environmental values of the locality. An amendment to the PP is requested to: • Zone the area of the proposed sporting complex to RE2 Private Recreation. • Any remaining land identified for IN2 be zoned B7 Business Park. • Amend the B7 Business Park permitted with consent uses and remove Light Industries on land within North Tralee. • Amend the proposed draft LEP zoning map to incorporate buffer areas to protect and provide adequate separation distances from surrounding properties and uses to the east and south.	Once the final boundaries of the Regional Sports Field site have been identified, the site will be zoned to a more appropriate zone (such as RE1 Public Recreation) in the future. Until then 'recreation facilities (outdoor)' are a permissible use in the IN2 zone. The planning proposal identifies 14.25ha of IN2 Light Industrial land at North Tralee. It should be noted 'light industries' are also a mandated permissible use in the B7 zone under the Standard Instrument. 'Light industry' by its definition cannot have an impact on the amenity of adjoining properties so there should be no offensive noise or emissions associated with any uses on this land. Potential visual impacts can be managed through suitable design requirements in planning controls. Council's experience is that more recent developments on IN2 zoned land are of a relatively high urban design (such as Lorn Rd).	

Submission Name	Submission	Response	Action
		The planning proposal is consistent with previous strategic background work such as Council's *Residential and Economic Strategy* including supply and demand assessment of the need for employment lands uses. Based on this analysis there is a need for light industrial at West Jerrabomberra to meet future demand. The proposed B7 zone and Northern Entry Road to the south provides for a buffer from the proposed IN2 land to the Environa land. Council can ensure any development of the B7 and IN2 land incorporate suitable landscaping and high quality urban design.	
Knight Frank on behalf of Poplars Development P/L and Robin P/L	The submission states that to fully realise the economic benefits, employment opportunities and community benefits of these urban release lands the following amendments are suggested: 1. Amend proposed B7 Business Park zone to Zone B6 Enterprise Corridor 2. Allow 'shops', 'office premises' and 'food and drink premises' as additional proposed uses in the zone.	The planning proposal follows much strategic background work in terms of Council's and the State Government endorsed *Residential and Economic Strategy* including supply and demand assessment of the need for employment lands uses. Based on this analysis there is a need for light industrial land and the creation of the IN2 zone at	Add 'Educational Establishments' as a permitted land use in Table 1 of the LEP for the site of the proposed school. Add 'Place of Public Worship' as permitted with consent in the land use tables for B7 Business Park zone.

Submission Name	Submission	Response	Action
	3. RE2 Zone Private Recreation – add Educational Establishments in the land use table as being permitted with consent.	West Jerrabomberra will meet future demand. The B7 zone and northern entry road provides for a buffer to existing residential areas in Jerrabomberra. The proposed zone is consistent with the existing B7 Zone at the Poplars. B6 is a zone which should be introduced to promote businesses along main roads and encourage a mix of compatible uses. This zone (as proposed) is not considered appropriate in this locality at this time. Probably the most significant concern is allowing 'shops' as a permissible use in the zone. There is a genuine risk that a proliferation of such developments would likely undermine the capacity of the surrounding network to accommodate the high traffic movements that are associated with such uses. There is also a concern that allowing a significant increase in floor space for such uses would undermine the viability of the existing CBD in Queanbeyan where there are currently significant vacancies. In addition, Council does not have any land currently	

Submission Name	Submission	Response	Action
		zoned B6 and this would introduce a new zone entirely under Council's respective controls. Some of the proposed additional uses may have merit such as 'registered clubs', 'markets' and 'food and drink premises'. However including those uses at this time is seen as a significant change to the plan. These proposed uses should be revisited during preparation of the new comprehensive LEP to determine if they are appropriate to include more broadly in the B7 zone. The comments in respect of ensuring the permissibility of the proposed high school site are supported. However, rather than adding 'educational establishments' as a permitted use generally in the RE2 zone, it is recommended this be done via a site specific addition under Schedule 1 of the proposed LEP. A late submission was received on 16 April which is requesting that 'place of public worship' be added as permitted with consent in the	

Submission Name	Submission	Response	Action
		land use tables of both the B7 Business Park and RE2 Private Recreation zones. Justification for this are given as follows: • The wider locality will comprise residential and employment lands uses and providing a Place of Worship for the catchment area is desirable. • The land use is considered consistent with both zone objectives. • Place of Worship is permitted in several land use zones under the *Queanbeyan LEP 2012*. • The inclusion would only be a minor amendment to the Planning Proposal. Whilst these uses are potentially suitable at West Jerrabomberra, it is not considered appropriate to provide for 'places of public worship' in the RE2 zone as this zone also applies more broadly throughout the Queanbeyan-Palerang area. Accordingly the	

Submission Name	Submission	Response	Action
		implications of this use being permissible in the zone needs to be further considered. However, as the B7 zone will only apply at West Jerrabomberra, it is considered an acceptable and minor additional use in that zone.	
JRA	The JRA states that the planning proposal to rezone West Jerrabomberra as light industry is totally incompatible with all of the development currently under way in the valley. They see it as incongruous to have a light industry zoning adjoining residential communities of Jerrabomberra and South Jerrabomberra. The PP is inconsistent with the *Queanbeyan Residential and Economic Strategy*, in particular Map 15 in that the PP does not match the employment lands specified in this map. This is in contradiction to the strategy which states that '*development has not impacted on the natural vistas and scenic areas with particular regard to the escarpment'*. The location of 12m high buildings next to residential areas will directly impact on the natural vistas of those residents. The JRA notes that there is no primary school planned for South Jerrabomberra. There is an opportunity to set land aside for a primary school on the land identified as IN2. It is the JRA's view that employment lands at West Jerrabomberra should be zoned B7 and any form of light industrial zones/development/activity should be removed from the PP.	The planning proposal identifies 14.25ha of IN2 Light Industrial land at North Tralee. The planning proposal follows significant strategic background work in terms of Council's and the State Government endorsed *Residential and Economic Strategy* including supply and demand assessment of the need for employment lands uses. Based on this analysis there is a need for light industrial land and the creation of the IN2 zone at West Jerrabomberra will assist in meeting that future demand. As shown in the planning proposal, the proposed IN2 land will be separated from any existing residential land at Jerrabomberra by both the proposed B7 Business Park zoned land and the Northern Entry Road. It is noted that the	

Submission Name	Submission	Response	Action
		proposed IN2 land will be located at least 200m from any existing residential land at Jerrabomberra. It should also be noted 'light industries' are also a mandated permissible use in the B7 zone under the Standard Instrument, so remain a permissible use within that zone. 'Light industry' is defined as: ***light industry*** *means a building or place used to carry out an industrial* activity that does not interfere with the amenity of the neighbourhood *by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise, and includes any of the following: high technology industry, home industry, artisan food and drink industry.* 'Light industry' by its definition cannot have an impact on the amenity of adjoining properties so there should be no offensive noise or emissions associated with any uses on this land.	

Submission Name	Submission	Response	Action
		Potential visual impacts can be managed through suitable design requirements in planning controls. Council's experience is that more recent developments on IN2 zoned land are of a relatively high urban design (such as Lorn Rd).	

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Planning and Strategy Committee of the Whole Meeting Attachment

8 MAY 2019

ITEM 5.2 PLANNING PROPOSAL - WEST JERRABOMBERRA

ATTACHMENT 3 REPORT RE STONE-FACED BRICK BUILDING AT NORTH TRALEE

REPORT ON STONE-FACED BRICK BUILDING

NORTH TRALEE

PREPARED BY

BRENDAN O'KEEFE

FOR

QUEANBEYAN-PALERANG REGIONAL COUNCIL

AUGUST 2018

1.

Introduction

Queanbeyan Palerang Regional Council commissioned me to investigate the stone-faced brick building that stands a little to the south of Jerrabomberra Creek on Lot 6 DP 239080, at 360A Lanyon Drive. In previous reports on Tralee, it was labelled as Site H3, but no historical research was carried out on it. The reports thought that it may have 'represent[ed] a commercial venture associated with the speedway, possibly a fast food outlet with public toilet facilities' and that it 'most likely date[d] to the 1970s or 1980s'.[1]

The aim of the current investigation is to establish when the building was erected, who constructed it and what purpose the building was built to serve.

In the course of the study, information was sought from the following sources and institutions:

- National Library of Australia for maps and aerial photographs
- Old rate and valuation records from the former Yarrowlumla / Palerang Shire Council offices in Bungendore
- Old Queanbeyan rate and valuation records from Queanbeyan City Library
- The Local History Collection at Queanbeyan City Library
- Queanbeyan and Canberra newspapers
- Published monographs and journal articles on local history
- Online documentary sources and photographs.

Information was also obtained from David Larcombe, the current owner / occupier of the Environa property, and from Anne Forrest, granddaughter and daughter respectively of John Joseph Morrison and Bernard Laurence ('Bernie') Morrison, former owners of the Tralee property. David Larcombe was able to provide valuable historical material, as well.

With the assistance of Jason Burgess of the Village Building Company, two site visits were made to inspect and take photographs of the building and its surroundings.

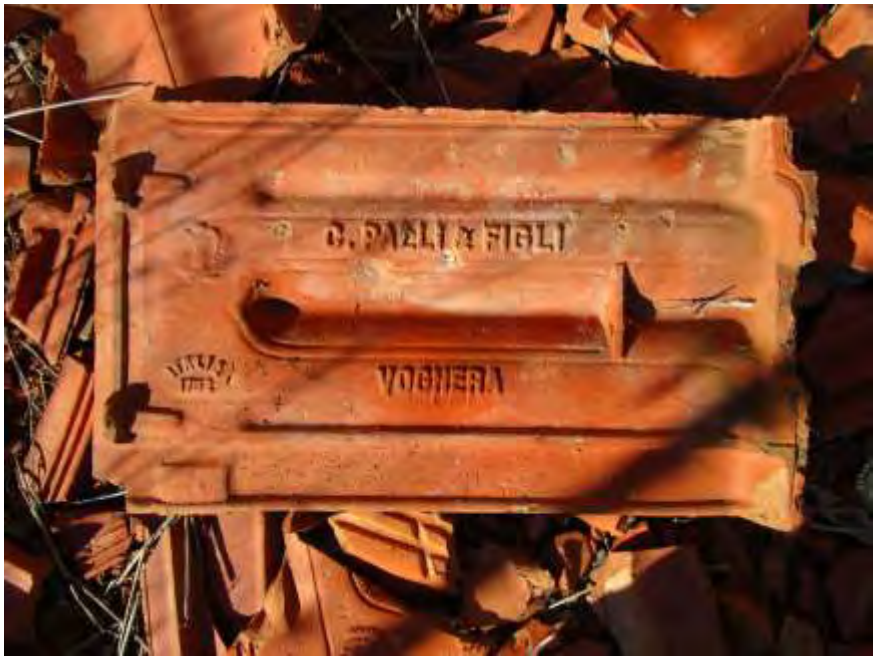
[1] URS, Tralee Local Environment Study, Volume 1 – Main Report, 12 August 2003, Appendix J, Cultural Heritage Assessment, p. 17; Navin Officer Heritage Consultants Pty Ltd, North and South Tralee Residential Development: Cultural Heritage Review, May 2010, p. 13.

2. Brief Description of the Building

The building is a rectangular brick structure with its long axis orientated east-west. Cemented to the exterior of the external walls stones that give the building a somewhat rustic appearance. The floor consists of a cement slab, while the roof is timber-framed and was covered with terra cotta tiles and ridge caps. The roof has now been almost completely denuded of tiles and they are lying in and around the building, mostly in pieces. The tiles were not made in Australia, but were imported from overseas. They were manufactured by the firm of C. Palli and Figli at Voghera in Lombardy in the northwest of Italy. A large stack of the tiles that were obviously surplus to requirements is lying in a field at South Tralee.

There are multiple entrances to the building, with seven now remaining; one to three more may have punctuated the now-collapsed wall of the western end. The building also has four small square timber-framed windows from which the glass panels have disappeared. There is some evidence that internal walls divided the interior and, at the eastern end, there appears to be the remains of two toilet cubicles. Protruding from the internal face of the southern wall are two metal pipes that look to have been connected to taps to supply water, perhaps over a basin. Below them, near the base of the wall, is a hole through which the water may have drained away through a larger gauge pipe.

Interior of the building, showing the northern wall with small square windows (left), three entrances at the eastern end and the timber frame of the roof almost completely stripped of tiles



One of the imported Italian tiles that roofed the building

Surplus roof tiles for the building stacked at South Tralee
(Photo: Jason Burgess)

The eastern end of the building with what appear to be toilet cubicles on each side

Metal pipes probably for taps protruding from the interior of the southern wall, with a large hole below into which a drainage pipe may have been fitted

3. Background: Land Ownership and Use

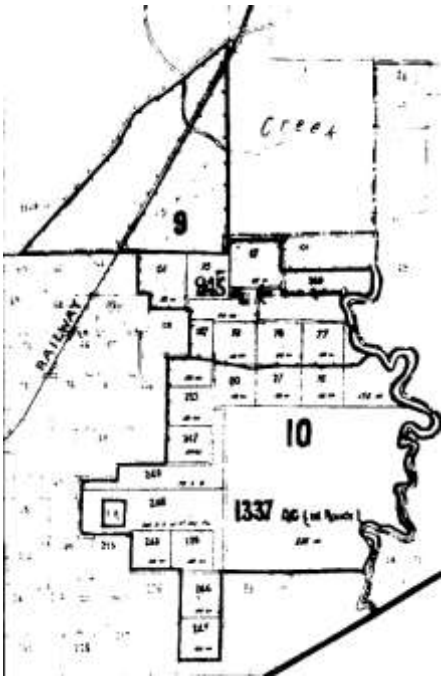
The stone-faced brick building at Tralee stands on what is now Lot 6 DP 239080. It was formerly part of DP 15463 and, long before that, part of Portion 12 Parish of Queanbeyan, the site of the Woden property. This was a square block of land measuring 2,560 acres, through which Jerrabomberra Creek ran. The portion also stood astride the road to Tharwa and Cooma and, when it was built later, the railway line to the south. On its eastern side, it bordered Portion 38 of 960 acres in extent. The stone-faced brick building stands just inside (*ie*, to the west of) the border with Portion 38.

Excerpt of Parish Map of Queanbeyan, March 1904, showing Portion 12 (Woden) and Portion 38 (NLA MAP G8971.G46 svar)

Portion 12 was initially granted to John Palmer (1760-1833), brother-in-law of Robert Campbell senior of Duntroon, although it appears that title to the land was never issued. In 1831, the land was granted to Francis Mowatt, but again it seems that his title to the land was never confirmed. Eventually, the land, together with formal title to it, was purchased in October 1837 by Dr James Fitzgerald Murray who established his Woden homestead on the western (or ACT) side of the property. When he died in June 1856, he left the property to his brother, Terence Aubrey Murray of Yarralumla. He in turn sold it to Thomas Rutledge at the close of that same year. In 1862, the property was taken over by Martin Byrne and his son Charles, though it is not clear whether they owned the land or simply leased it. After the death of his wife Sarah in July 1869, Martin Byrne relinquished the property and moved back to Queanbeyan. By September the next year, if not earlier, ownership had passed to Robert Campbell's son George (1818-81), of Duntroon.[2]

[2] Gwendoline Wilson, *Murray of Yarralumla*, Melbourne, 1968, pp. 81, 248, 249; Peter Procter, *Biographical Register of Canberra and Queanbeyan: from the district to the Australian Capital Territory 1820-1930*, Canberra, 2001, pp. 34, 230, 238; Errol Lea-Scarlett, *Queanbeyan District and People*, Queanbeyan, 1968, pp.

The land remained in the possession of the Campbell family for the next 36 years. At some point, probably in the first half of the 1870s, a triangular section in the southeastern corner of the property – including what is now the site of the stone-faced brick building – was leased out as grazing land to Francis Davlin (or Devlin), a Queanbeyan butcher and avid racer of racehorses. He was also – or became – the licensee of the Hibernian Hotel at Michelago in the period 1875-79. (Earlier, in January 1866, Davlin had leased approximately 215 acres of the nearby Jerrabomberra estate from George Campbell's nephew, Pemberton Campbell Palmer.) The triangular section that he leased from Campbell measured 984 acres in area, comprising about 30 per cent of the Woden property. It was defined on its east and south by the boundaries of Woden (*ie*, Portion 12), while the slightly irregular hypotenuse of the triangle was formed by the road leading south to Tharwa and Cooma. Although Davlin died in 1890, the tract of land he leased continued to be known popularly as Davlin's.[3]



Map showing Lot 9 (Davlin's Paddock) and Lot 10 of the Duntroon Estate, 1906
(*Queanbeyan Observer*, 23 October 1906)

In October 1906, large parts of the Duntroon Estate were put up for sale by the trustee, James Scroggie, in accordance with George Campbell's will. One of the parts offered for sale was Davlin's, which was advertised as Lot 9. By that time, the lot was bisected by the railway line running diagonally through it. The land was completely fenced around its perimeter and was divided into three paddocks by 6-wire and log fencing and by the railway line. It was described as 'beautiful low-lying, undulating country, dotted thinly with fine, well-grown timber' and was 'permanently watered by Jerrabomberra Creek'. It is clear that no buildings stood on the land at the time of the sale.[4]

110, 137; Lyall Gillespie, *Canberra 1820-1913*, Canberra, 1991, p. 47; *Queanbeyan Age*, 22 September 1870, p. 1.

[3] *Queanbeyan Observer*, 23 October 1906, pp. 1, 2; E.J. Lea-Scarlett, R.L. Cross and P.B. Sheedy, *Queanbeyan Pioneer Cemeteries*, vol. 3, 1985, p. 299; *Queanbeyan Age*, 28 December 1865, p. 3; 25 January 1866, p. 2.

[4] *The Age* [Queanbeyan], 23 October 1906, p. 3; *Queanbeyan Observer*, 23 October 1906, pp. 1, 2; *Queanbeyan Leader*, 30 October 1906, p. 2.

Lot 9 was purchased at the Duntroon auction by Alexander Joseph McDonald whose parents, John and Eliza, owned 'Uriarra'. At the same time, Alexander McDonald bought Lot 10 of 1,308 acres a little to the south, which was already known as 'Duntroon Hill Station' or just 'Hill Station'. McDonald incorporated Lot 9 into Hill Station, eventually building the property up by other purchases to a total of 5,100 acres by 1920.[5]

In that same year, McDonald sold Hill Station to Henry Brougham Blyth, an experienced pastoralist from Cooma. Blyth retained the property for only a few years, selling it off in separate large lots in March 1924. The lots were all advertised as freehold and 'Not subject to Federal Resumption', indicating that they were all in NSW. With the formation of the Capital Territory, Lot 9 had been – or was about to be – halved in size, as the part to the west of the railway line now fell within the Territory's boundaries. The purchaser of the major part of the Hill Station property was James Patrick Heaton of Gurrundah northwest of Goulburn. In December 1924, Heaton sold the property on to the real estate developer, Henry Ferdinand Halloran of Sydney, although the land was actually bought in the name of his wife, Amy Gwendoline Halloran.[6]

Henry Halloran had grand visions for the extensive acquisition. Along with other land bordering the eastern edge of the Capital Territory that he bought up, he subdivided the property into residential allotments, aiming to reap substantial profits by selling them as the closest freehold lots to the Territory, where land could only be held as leasehold. He called his new housing estate 'Environa'. It comprised 1,766 allotments with, at its northern end, a large area that he reserved for an 18-hole golf course and sports and recreation ground (see map below). This was the area immediately to the south of Jerrabomberra Creek and is the area on which the stone-faced brick building stands. According to David Larcombe, who is the Hallorans' grandson and owner of the current 'Environa' property to the south, his grandfather could not subdivide this area into housing allotments because it was subject to flooding from the creek. The golf course was never established, but a sports field or oval was created, with a post and single-rail fence enclosing it (see photographs in Part 4 of this report).[7]

The sports and recreation ground was used for a variety of events from 1929 up until World War 2. At Easter in 1929 and 1930, it was the venue for the Tuggeranong picnic sports day, and in October 1930 the 'Environa Picnic Grounds', as they were called, hosted a fund-raising event for St Christopher's at Manuka in the ACT. The most consistent use of the sports oval, however, was as the home ground for the Federal Capital Territory Rugby League. The Canberra League started using the ground from mid-1932 for matches against towns and villages in the region, including Goulburn, Yass, Boorowa, Braidwood, Bungendore and Captain's Flat. Rugby League matches continued to be held at Environa up to and including the winter of 1939, but thereafter they and other sporting and recreational uses of the ground appear to have lapsed.[8]

[5] *The Age* [Queanbeyan], 30 October 1906, p. 2; *Queanbeyan Age*, 13 February 1920, p. 2; Bruce Moore, *The Warm Corner*, Pearce ACT, 1981, p. 201.
[6] *Queanbeyan Age*, 13 February 1920, p. 2; 12 February 1924, p. 2; 11 March 1924, p. 2; 18 March 1924, p. 2; 23 December 1924, p. 2; *The Land*, 15 February 1924, p. 2; Yarralumla Shire Valuation and Rate Book 1924-25-26, B Riding, valuation nos. 1201 and 1202.
[7] Hugh Clarke, 'Environa: a land developer's dream', *Canberra and District Historical Society Journal*, 1969, part 3, pp. 1-2; Lea-Scarlett, *Queanbeyan District and People*, pp. 185-7; Yarralumla Shire Valuation and Rate Book for the Years 1927-29, B Riding, valuation no. 807; MAP G8984.C3G46 1926, 'Environa 8th Division of the Canberra Freehold Estates', 1926, National Library of Australia [NLA]; *Canberra Times*, 2 April 1929, p. 2.
[8] *Canberra Times*, 2 April 1929, p. 2; 22 October 1930, p. 3; 27 July 1932, p. 3; 1 June 1933, p. 3; 1 June 1935, p. 2; 5 June 1939, p. 3.

Excerpt from a locality plan of Henry Halloran's Canberra Freeholds Estate, 1926, showing the northern section of Environa with the area reserved for a golf course and for recreation (NLA MAP RM 892). Another sales plan of Environa (NLA MAP G8984.C3G46 1926) shows the area more specifically reserved for a recreation and sports ground and a golf course.

The handsome return that the Hallorans hoped to realise from 'Environa' never materialised, largely because of the winding down in the development of Canberra from the latter half of 1928 onward and then the onset of the Great Depression the following year. Nonetheless, the Halloran family retained ownership of the property for decades afterwards. For some time, they leased the land to the Morrison family of 'Tralee', except that they sold the northern section – on which the stone-faced brick building stands – to John Morrison or his son Bernard ('Bernie'). The Morrisons incorporated it into 'Tralee'.[9]

In the late 1960s, Bernie Morrison in association with the Canberra Speedway Club embarked on a venture to develop a professional speedway track for cars and motorcycles on Tralee station. The site chosen for the track was the northern extremity of Environa where Henry Halloran had envisaged laying out a golf course four decades before and where he had established his sports and recreation ground. Morrison was joined by Peter Gurbiel of the Canberra Speedway Club and a Canberra caterer, Keith Nurse, in forming a company to build the track and accompanying facilities. Together, they were responsible for the development of a ¼-mile circuit overlooked by a three-storey grandstand, restaurant and administration centre. Photographs suggest that the circuit was built on the site of Halloran's sports oval. It was officially opened on 21 June 1970 and was known initially as the Tralee Speedway. When the surface was asphalted in 1974, it was renamed the Fraser Park Speedway in honour of the Member for Canberra, Jim Fraser, who had died in April 1970.[10]

Further development of the complex took place later in the 1970s. In March 1976, a 400-metre grass track was laid down for quarter-horses. In August the following year, a whole new racing track for

[9] Greg Murphy, 'Henry F. Halloran: dealer in land and dreams', *Canberra Historical Journal*, no. 17, March 1986, pp. 1-8, especially pp. 6-8; Clarke, 'Environa: a land developer's dream', pp. 1, 2; Department of the Valuer General, N.S.W., Valuation List for Queanbeyan, Serial No. 8690-360A-00-4, Valuer General No. 4325-91000, valuation date, 11 February 1980, printing date 8 January 1982.

[10] *Canberra Times*, 20 September 1968, p. 1; 22 January 1970, p. 1; 15 May 1970, p. 24; 17 June 1970, p. 32; 16 June 1970, p. 3; 22 June 1970, p. 16; www.speedwayandroadracehistory.com/canberra-tralee---fraser-park-speedways.html .

vehicles was opened to the east of the original one. It was a ½-mile dirt circuit that was mainly intended for motorcycle racing and was popularly known as the 'long track'. Its formal title, however, was the Tralee Speedway, while the name, Fraser Park Speedway, was reserved for the original ¼-mile circuit.[11]

From its inception in 1970, the speedway complex managed to keep going despite suffering some serious financial problems at times. It eventually closed down in 1997 after more than 27 years of operation. By that time, the facility had become somewhat rundown probably because of dwindling patronage and lack of revenue. One of the main reasons for its closure, however, was the encroachment of suburban development at Jerrabomberra and complaints from residents about noise emanating from the speedway.[12]

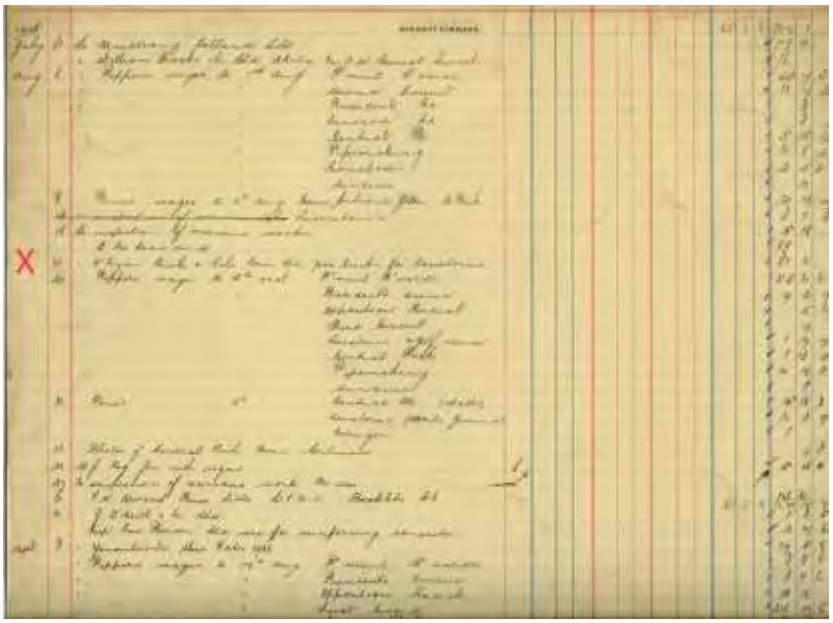
[11] *Canberra Times*, 4 March 1976, p. 24; 30 April 1977, p. 39; 23 August 1977, p. 18; 27 August 1977, p. 40; 6 August 1993, p. 22; information from Jason Burgess, Village Building Company P/L.
[12] *Canberra Times*, 2 December 1978, p. 43; www.speedwayandroadracehistory.com/canberra-tralee---fraser-park-speedways.html .

4. The Stone-Faced Brick Building

Information on the building was sought from Bernie Morrison's daughter, Anne Forrest. On being asked when the building was erected, she instantly replied that it was 'a Halloran building'. By this, she meant that it was built at the time that Henry Halloran was trying to develop Environa as a residential estate. She did not know what the original purpose of the building was, but said that her father used it to store hay. She was adamant that the building long pre-dated the speedway development at Tralee and that it had nothing at all to do with the speedway.

Information was also sought from David Larcombe, grandson of Henry Halloran and the current owner / occupier of the Environa property. When asked about the date of the building's construction and about its function, he said that his grandfather had had it built in the latter half of the 1920s as a toilet block for the 'picnic grounds' or 'playing fields' that he had reserved for the northern part of his Environa development. He said that the building had been erected by Halloran's stonemason, Mr Powe. As with most of the other structures that Halloran had erected at Environa, Powe used stones gathered from the surrounding fields.[13] Mr Larcombe added that it was the only building at Environa or in any other of his grandfather's numerous developments in NSW that was 'lined with brick'.

Subsequently, David Larcombe was able to find an entry relating to the building from one of his grandfather's ledgers that he has in his possession. The entry records that on 14 August 1928 Henry Halloran ordered 7,000 bricks from the Queanbeyan Brick and Tile Company to construct lavatories (see below). The number of bricks is much greater than the number that would have been used in the construction of the toilet block, but Halloran may have been intending to build more and / or larger lavatory facilities.



Excerpt from one of Henry Halloran's ledgers, recording his purchase on 14 August 1928 of bricks for lavatories at Environa (courtesy of David Larcombe)

[13] Jennifer Horsfield, 'Environa: marketing a life-style near Canberra 80 years ago', *National Library of Australia News*, October 2005, p. 9.

David Larcombe was also able to find two photographs that showed the toilet block soon after it was built. The photographs were taken during a field day at the Environa sports and recreation ground in 1929. Standing in the background of the photographs is one of the small circular kiosks or pavilions that Halloran had constructed at Environa. David Larcombe stated that Bernie Morrison towed this away with a tractor and positioned it at another site on his Tralee property. The date that this occurred is not clear, but it is likely to have happened when the speedway was under development in the late 1960s.

View looking approximately north of a field day on the sports / recreational ground at Environa, 1929, with the toilet block at left and kiosk at right (Courtesy of David Larcombe)

View looking approximately north of a field day on the sports / recreational ground at Environa, 1929, with the toilet block half in view at left and kiosk at right (Courtesy of David Larcombe)

A contemporary view looking approximately north, showing the stone-faced brick building (left) and with the same hills in the background

A topographical map based on 1941 aerial photographs and now held by the National Library shows the general area of Environa, together with Jerrabomberra Creek, the railway line, roads and tracks. The toilet block erected by Halloran is clearly visible on the map, though the cartographers did not bother to depict the nearby kiosk. The 1941 photographs on which the map was based could not be located at the National Library, but aerial photographs of the area were found that date from December 1944 and May 1952. These show both the toilet block and kiosk *in situ*, though the buildings are much easier to see on the better-quality 1952 image (which is included below).

Excerpt from a 1942 topographical map (based on 1941 aerial photographs), with the stone-faced brick building in the centre, immediately to the south of Jerrabomberra Creek (NLA Map G8980 S63)

Excerpt from a 1952 aerial photograph, showing in the centre the stone-faced brick building at left and kiosk at right (NLA I55-16, Canberra-Queanbeyan, 3 May 1952, Run 6, photograph no. 5148)

Anne Forrest expressed the view that it may have been her father who purchased the Italian tiles to re-roof the building. However, as her father used the building as a hay shed, it seems fairly unlikely that he would have invested in expensive tiles to do any re-roofing. The only possibility is that he had the building re-roofed in order to make it usable as a toilet block for the speedway development. But the block would have been too small for the sort of crowds that attended speedway races and, in any case, Morrison and his partners in the speedway venture erected two new purpose-built lavatory blocks in the first stage of the development.[14] David Larcombe also thought that he had seen a record of the purchase of the tiles in Henry Halloran's ledgers, though he was unable to locate it for this study.

[14] *Canberra Times*, 8 May 1970, p. 24; 15 May 1970, p. 3.

5. Discussion and Conclusion

The evidence shows that the stone-faced brick building at the northern end of Tralee was purpose-built as a toilet block by Henry Halloran as part of the development of his planned Environa subdivision. Its purpose was to serve as a facility for the sports and recreation ground and perhaps the golf course that Halloran had in mind for the northern end of Environa. The building was erected in the latter half of 1928 or in the early part of 1929. The actual work of construction was undertaken by a Mr Powe, Halloran's stonemason, who faced the structure with stones gathered on the estate. The only function of the facing stones was aesthetic, in that they were intended to make the building match or harmonise with the other stone structures that Halloran had built at Environa. There is no evidence to indicate that the building ever had anything to do with the speedway venture of the 1970s to 1990s.

The building is as an integral part of Halloran's putative Environa development and thus properly belongs with his other structures that stand at Environa, particularly the stone ones. More widely, the building is an example of Halloran's personal aesthetic preference for rustic-looking structures built of, or in this case faced with, stone. As such, it is of a piece with other stone structures he had built at places further afield, notably those he had constructed in the 1920s and 1930s at Tanilba House at Tanilba Bay, Port Stephens, which is listed on the NSW State Heritage Register (no. 5045714). Tanilba House, together with an elaborate stone wall Halloran had built to the west of it and his stone Portal to the Peerless at Port Stephens, are all also listed on the State Heritage Inventory (nos. 2280216, 2280129 and 2280108 respectively).

It should be noted that the Inventory entries for the latter two of these listings claim, incorrectly, that they are 'part of the sequence of stone structures built by Henry Halloran in the 1930's that make Tanilba Bay unique.' They are not unique, however, as the stone structures at Environa, including the stone-faced lavatory block, demonstrate. The Environa structures, moreover, are almost certainly more extensive than those Halloran had erected in the Port Stephens area.

The State Heritage Inventory also includes four separate entries for places listed under the general title 'Environa (Tralee Homestead Complex)'. These are the Open Air Motor Sport Track (*ie*, the speedway), the burnt-out ruins of a timber shed, a sheep dip and the Tralee Landing Ground (nos. 2290393 to 2290397 inclusive). It is not clear, though, whether the Environa subdivision ever covered the location of the sheep dip and, apart from the fact that the other three places happen to lie on the subdivision land, neither they nor the sheep dip ever had any relationship with Halloran's Environa. In like manner, the speedway development did not really have anything to do with the Tralee Homestead Complex. It would be better to amend the general title above to reflect the fact that the places lie on what was Tralee Station, while reserving the title 'Environa' for the actual structures associated with Halloran's proposed subdivision.

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Planning and Strategy Committee of the Whole Meeting Attachment

8 MAY 2019

ITEM 5.2 PLANNING PROPOSAL - WEST JERRABOMBERRA

ATTACHMENT 4 NTH TRALEE CONTAMINATION STUDY AUGUST 2018

Douglas Partners
Geotechnics | Environment | Groundwater

Integrated Practical Solutions

Report on Detailed Site Investigation for Contamination

Proposed Subdivision
360A Alderson Place, Tralee

Prepared for
Canberra Estates Consortium No 4 Pty Ltd

Project 46162.12
August 2018

Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

Project No.	46162.12	Document No.	R.001.Rev1
Document title	Report on Detailed Site Investigation for Contamination Proposed Subdivision		
Site address	360A Alderson Place, Tralee		
Report prepared for	Canberra Estates Consortium No 4 Pty Ltd		
File name	46162.12.R.001.Rev1		

Document status and review

Status	Prepared by	Reviewed by	Date issued
Revision 0	Peter Storey	Dean Woods	July 2018
Revision 1	Peter Storey	Dean Woods	August 2018

Distribution of copies

Status	Electronic	Paper	Issued to
Revision 0	1	0	Jason Burgess, Canberra Estates Consortium No 4 Pty Ltd
Revision 1	1	0	Jason Burgess, Canberra Estates Consortium No 4 Pty Ltd

The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author	Peter Storey	August 2018
Reviewer	Dean Woods	August 2018

FS 604853

Douglas Partners Pty Ltd
ABN 75 053 980 117
www.douglaspartners.com.au
Unit 2, 73 Sheppard Street
Hume ACT 2620
PO Box 1487
Fyshwick ACT 2609
Phone (02) 6260 2788
Fax (02) 6260 1147

Douglas Partners
Geotechnics | Environment | Groundwater

Executive Summary

This report presents the results of a detailed site investigation for contamination (DSI) undertaken for a proposed subdivision at 360A Alderson Place, Tralee. The investigation was commissioned in an email dated 25 May 2018 by Jason Burgess of Canberra Estates Consortium No 4 Pty Ltd and was undertaken in accordance with Douglas Partners' proposal CAN180102 dated 7 May 2018.

DP understands that the site is to be subdivided and rezoned to the following zones:

- RE2: Community playing fields; and
- IN2: Industrial

The objectives of the proposed works include:

- Review site history information for the site,
- Undertake soil sampling at the site with interpretation of soil laboratory results, and
- Advise on any contamination and the need, or otherwise, for on-going site investigations and/or remediation.

The site comprises a large irregular shaped area and is approximately 54 hectares in size. An area in the central western portion of the site was used as a race track. An oval race track, earthen embankment and buildings are present in this area. A gravel road is present running along the southern boundary of the site. The remaining area of the site is grassed and scattered with trees. The maximum north-south dimensions and east-west dimensions are approximately 550 m and 1.2 km, respectively.

The site is generally flat and slopes down gently towards the north to northwest and the surface level of the site ranges from approximately 590 m AHD in the east of the site to 580 m AHD in the west of the site. The regional topography slopes down towards the north-west with the Tralee Hills present to the south-east of the site.

The site is bounded by rural properties to the north and south, low density residential properties to the east and commercial and industrial properties to the west.

The site history review indicated that the site had primarily been used for livestock grazing prior to development of the Speedway race track in 1970. The race track was operational from 1970 to approximately 1997. Anecdotal information and the results of the site inspection indicated an area of hummocky land was present in the north of the site that may have been associated with the dumping of waste material associated with the speedway operation. In addition, buildings located in the north-east corner of the site appeared in the early 1990s and were associated with potential sand or gravel extraction. The overall potential for contamination is considered to be moderate, with localised areas of more elevated contamination potentials.

The table below outlines the justification behind the identification of areas of environmental concern (AECs) and the environmental contaminants of concern (associated with each AEC).

Douglas Partners
Geotechnics | Environment | Groundwater

AEC Description	Justification	Potential Contaminants of Concern	Comments
AEC 1: Fill embankments with filling of unknown origin	Potential importation or use of filling of unknown origin. Possible contamination from burial of unknown wastes	TRH, BTEX, PAH, Metals, OCP/OPP, PCB, Asbestos	Generally comprising the fill embankment surrounding the main speedway race track. DP considers the likelihood for contaminants to be present to be moderate to high. Soil media potentially affected.
AEC 2: Main Race Track	Potential spills and leaks from motor race vehicle during operation of the speedway	TRH, BTEX, PAH and Metals	Race track was in operation for approximately 30 years. There is potential for accumulation of hydrocarbon contamination from spills and leaks from race vehicles. DP considers the likelihood for contaminants to be present to be moderate. Soil and groundwater media potentially affected.
AEC 3: Race Track pits area	Potential spills and leaks from motor race vehicle during operation of the speedway.	TRH, BTEX, PAH and Metals	The pits area to the east of the main race track was used to maintain vehicles prior to racing. There is the potential for accumulation of hydrocarbon contamination resulting from spills and leaks. DP considers the likelihood for contaminants to be present to be moderate Soil and groundwater media potentially affected.
AEC 4: Hazardous Building Material	Hazardous building material associated with race track buildings.	Asbestos, Lead, PCBs	Potential asbestos containing material and lead paint used in construction of on-site buildings. DP considers the likelihood for contaminants to be present to be moderate to high in localised areas surrounding buildings. Soil media potential affected.
AEC 5: Toilet Blocks and Soakaways	Potential biological pathogens associated with drainage of toilet blocks.	E.coli, Salmonella and Faecal coliforms	Several toilet blocks were present across the site. Site inspection indicated that these discharged to soakaways. There is the potential for biological pathogens to be present. DP considers the likelihood for contaminants to be present to be low to moderate Soil and groundwater media potentially affected.

Douglas Partners
Geotechnics | Environment | Groundwater

AEC Description	Justification	Potential Contaminants of Concern	Comments
AEC 6: Historic on-site landfill	Anecdotal information indicates that waste from race track operation was buried on site	TRH, BTEX, PAH, Metals, OCP/OPP, PCB, Asbestos	Anecdotal information from the current site owners indicates that waste material from speedway events were buried on site DP considers the likelihood for contaminants to be present to be moderate to high Soil and groundwater media potentially affected
AEC 7: Potential sand /gravel extraction	Historical aerial photographs indicate the possible extraction of sand and or gravel in the north-east corner of the site. Possible machinery associated with this activity may have been present	TRH, BTEX, PAH, Metals, PCB	Potential machinery associated with any extraction may have been powered by fuel oils. Storage and use of fuel oils may have resulted in leaks and spills and the accumulation of hydrocarbon contamination. DP considers the likelihood for contaminants to be present to be low Soil and groundwater media potentially affected
AEC 8: Potential historical use of pesticides	Prior to development of the speedway, the site was used for grazing. Pesticides may have been applied to livestock.	OCP/OCP, metals	No obvious sheep dip sites were observed during the site inspection, however there is potential for pesticides to have been used at the site. DP considers the likelihood for accumulation of significant quantities of pesticides to be low. Soil media potentially affected

The AECs were identified on the basis of the available site information, site inspection and limited subsurface investigation. Based on the findings of the assessment, including limited sampling and testing to date, the potential for gross contamination to be present within the site is considered to be low, with localised areas of more elevated contamination potential.

It is recommended that prior to the commencement of construction activities, further intrusive-based investigation be carried out to further characterise each of the identified AECs. The recommendations for further works are summarised in the Table below. The further works aim to confirm the suitability of the site for the proposed end-uses (commercial/industrial and recreational).

AEC	Description	Recommendations for further work
AEC 1	Fill Embankment	The results of the sampling of the fill embankment indicate that gross contamination was not present within the filling. DP understands the filling may be re-used on site. DP considers the filling may be suitable for on-site reuse subject to further investigation and the implementation of an unexpected finds protocol.
AEC 2	Use of hydrocarbon fuel in race track area	No further investigation required but it would be prudent to include this area in the unexpected finds protocol

Douglas Partners
Geotechnics | Environment | Groundwater

AEC 3	Spills and leaks of fuels in pits area	
AEC 4	Hazardous building materials	A pre-demolition hazardous materials survey is recommended for buildings and former buildings in the race track area and should be undertaken by a licensed asbestos assessor Identified hazardous building materials should be removed by a licensed asbestos removalist and validation of the removal should be completed by a licensed asbestos assessor
AEC 5	Toilet blocks and soakaways	No further investigation required except for a hazardous building materials survey.
AEC 6	Former landfill area	The results of the sampling of the former landfill identified the presence of anthropogenic waste, including asbestos containing material. DP recommends the area is excavated and stockpiled on site prior to undertaking a waste classification assessment in order to dispose the material off-site to a suitably licensed waste disposal facility
AEC 7	Potential sand and /or gravel extraction	No further investigation required.
AEC 8	Potential former Pesticide use	No further investigation required.

Based on the assessment undertaken to date, it is considered that the site is likely to be suitable for the proposed development, following further investigation and remediation detailed in the Table above.

In addition, DP recommends that a construction environmental management plan (CEMP), incorporating an unexpected finds protocol be implement during the development works at the site.

Douglas Partners
Geotechnics / Environment / Groundwater

Table of Contents

Douglas Partners
Geotechnics / Environment / Groundwater

Douglas Partners
Geotechnics | Environment | Groundwater

APPENDICES

Report on Detailed Site Investigation for Contamination
Proposed Subdivision
360A Alderson Place, Tralee

1. Introduction

This report presents the results of a detailed site investigation for contamination for contamination (DSI) undertaken for a proposed subdivision at 360A Alderson Place, Tralee. The investigation was commissioned in an email dated 25 May 2018 by Jason Burgess of Canberra Estates Consortium No 4 Pty Ltd (CEC) and was undertaken in accordance with Douglas Partners' proposal CAN180102 dated 7 May 2018.

DP understands that the site is to be subdivided and rezoned to the following zones:

- RE2: Community playing fields; and
- IN2: Industrial

The site is approximately 54 hectares in size and has formerly been used for agricultural uses and a motor vehicle race track. Anecdotal information indicates that a possible former landfill is also located in the northern part of the site. DP further understands that remediation of asbestos contamination has occurred on part of the site adjacent to the southern boundary. CEC therefore, require a site contamination assessment to inform any further remediation works that may be necessary prior to development.

The objectives of the proposed investigation include:

- Review site history information for the site;
- Undertake soil sampling at the site with interpretation of soil laboratory results, and
- Advise on any contamination and the need, or otherwise, for on-going site investigations and/or remediation.

This report must be read in conjunction with the notes *About this Report* which are included in Appendix A.

2. Scope of Works

The following scope of works was conducted to meet the project objectives:

- Preparation of a list of Potential Areas of Environmental Concern (PAEC) through investigation of the site by the following methods:
  - A desk study of available topographical, geological and hydrogeological maps;
  - A search through the Contaminated Land Register for notices issued under the CLM Act;
  - A search of the groundwater bore database;
  - A review of available historical aerial photography;

- A review of historical land titles with respect to the Deposited Plan to identify previous site owners. The names and occupations of site owners may assist in the identification of potentially contaminating activities;
- Review of existing environmental reports available for the site; and

- Site inspection by an environmental scientist;
- Formulation of a preliminary conceptual site model (CSM) based on the site history review and inspection;
- Subsurface investigation with sampling and laboratory testing for the contaminants of concern as outlined Sections 10 and 11;
- Revision of the CSM based on the results of the limited subsurface investigation and laboratory testing; and
- Preparation of this report presenting the findings of the DSI, identification of potential sources of contamination, and an assessment of the need for further investigations and/or management.

The works documented in this report were undertaken with reference to the following guidance:

National Environment Protection Council, National Environment Protection (Assessment of Site Contamination) Measure (1999, as amended 2013) (Ref 1); and

NSW Office of Environment and Heritage (OEH) (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (Ref 2).

3. Site Identification and Description

3.1 Site Identification

Site information is summarised in Table 1 below:

Table 1: Site Identification Details

Item	Details
Site Owner/ Occupiers	The Village Building Company Limited
Site Address	360A Alderson Place, North Tralee
Registered Lot and Plan (see Drawing 1, Appendix B)	The site is comprised of the following registered lot parcels: • Lot 6, DP239080; • Lot 3, DP239080; and • Lot 1, DP313299
Current land use	Stock grazing
Current Zoning	DM: Deferred Matter (extract of Queanbeyan-Palerang Regional Council Local Environment Plan 2009 is presented in Appendix C)
Council	Queanbeyan-Palerang Regional Council
Approximate Site Area	54 hectares
Proposed future land-use	Commercial/Industrial development and recreational – playing fields

Item		Details
Proposed future zoning		RE2: Community Playing Fields; and IN2: Industrial
Surrounding Land Use	North:	Jerrabomberra Creek with open agricultural land beyond
	South:	Open agricultural land grazing
	East:	Low Density Residential properties
	West:	Commercial/Industrial properties

3.2 Site Layout and Description

The site comprises a large irregular shaped area and is approximately 54 hectares in size. An area in the central western portion of the site was previously used as a race track. An oval race track, earthen embankment and buildings are present in this area. A gravel road is present running along the southern boundary of the site. The remaining area of the site is grassed and scattered with trees. The maximum north-south dimensions and east-west dimensions are approximately 550 m and 1.2 km, respectively.

The site is generally flat and slopes down gently towards the north to northwest and the surface level of the site ranges from approximately 590 m AHD in the east of the site to 580 m AHD in the west of the site. The regional topography slopes down towards the north-west with the Tralee Hills present to the south-east of the site.

The site is bounded by rural properties to the north and south, low density residential properties to the east and commercial and industrial properties to the west.

Drawing 1, Appendix B present the site location and an aerial view of the current site features.

4. Soil Landscape, Regional Geology and Hydrogeology

4.1 Soil Landscape

Reference to the 1:100 000 'Canberra Soil Landscape' Series Sheet 8727 (Ref 3) indicated that the site is mapped as being on the Williamsdale Soil Group.

The Williamsdale Soil Group is characterised by undulating rises, alluvial fans and valley flats on Silurian Volcanics of the Canberra Formation. Generally, little or no rock outcrops occur within this soil group. Soils are moderately deep, well drained podzolic soils, red and brown earths on upper rises and fan elements and moderately to very deep, poorly to imperfectly drained, solodic soils on lower rises and fan elements. This soil group is limited by its erodible and dispersible nature, its acidity, potential for seasonal water-logging and localised flooding hazard.

4.2 Regional Geology

Reference to the Canberra 1:100 000 Geological Series Sheet (Ref 4) indicates that the site is underlain by geological rock units of the Laidlaw Volcanics of late Silurian age.

The Laidlaw Volcanics typically comprise rhyodacitic ignimbrite with minor volcaniclastic and argillaceous sedimentary rocks.

4.3 Hydrogeology

The 1:100,000 map 'Hydrogeology of the Australian Capital Territory and Environs' (Ref 5) indicates that the site is underlain by geological units of late Silurian aged. These typically include dacitic, rhyodactic, ignimbrite, bedded tuffs, minor shale, sandstone, limestone and ashstone and are typically fractured, high yielding where minor limestone beds, major fold closures, major geologic contacts, individual ash-flows and interbedded sediments appear. The mapped water quality is indicated to be good with total dissolved solids of less than 500 mg/L and yield is mapped at less than 0.5 L/s.

It is anticipated that groundwater flow direction in the area will follow the regional topography and flow towards the north to north west.

4.4 Groundwater Bore Search

A search of the groundwater bore database was conducted through the NSW Department of Primary Industries. Based on the database there are two groundwater abstraction bores registered within a 1.5 km radial search area of the site. Further information was available through the database for the bore as shown in Appendix C and summarised in Table 2.

Table 2: Groundwater Bores Attribute Data

Groundwater Bore Number	Date Installed	Distance to site (m)	Private/Public	Groundwater Usage	Depth (m)	Depth to standing water level (m)	Yield (L/s)
GW043846	1/10/69	835 m S	Private	Irrigation	40.50	17.6	0.51
GW043847	1/08/69	1,020 m S	Private	Stock, Domestic	37.70	12.10	0.07

5. Site History

5.1 Regulatory Notice Search under the CLM and POEO Acts

A search on 5 June 2018 for Statutory Notices issued under the *Contaminated Land Management Act 1997* and *Protection of the Environment Operation Act 1997* (POEO) available on the NSW Environment Protection Authority (EPA) website indicated that there have been no notices issued on the subject Lots.

An extract of the "List of NSW Contaminated Sites Notified to EPA" is presented in Appendix C.

5.2 Historical Title Search

Historical title records were reviewed to identify any previous land owners and/or site uses that may indicate a potential for contamination. Information of current and previous owners is presented in Table 3. The historical title search results are presented in Appendix C.

Table 3: Summary of Historical Titles

Date of Acquisition and term held	Registered Proprietor(s) & Occupations	Inferred Land Use
19.12.1924 (1924 to 1925)	James Patrick Heaton (Grazier)	Agricultural
01.04.1925 (1925 to 1936)	Amy Gwendoline Halloran (Married Woman)	Agricultural
01.07.1936 (1936 to 1954)	John Morrison (Grazier)	Agricultural
31.03.1954 (1954 to 1993)	John Walsh Morrison (Catholic Priest) Bernard Lawrence Morrison (Grazier) (Application by Transmission not investigated)	Agricultural
04.03.1993 (1993 to 1999)	Bernard Lawrence Morrison (Grazier)	Unknown
18.06.1999 (1999 to 1999)	Sandra Anne Walsh Graeme Farquhar Finlayson (Executors of the Will of Bernard Lawrence Morrison)	Unknown
18.10.1999 (1999 to 2002)	Therese Mary Hansen John Bernard Morrison Lucille Margaret Wilmot Sandra Anne Walsh	Unknown
13.06.2002 (Part) (2002 to 2003)	The Village Building Co. Limited	Unknown
02.04.2014 (2014 to Date)	The Village Building Co. Limited	Unknown

No significant potential sources of contamination were identified based on a review of the inferred site ownership records.

5.3 Historical Aerial Photography

Five historical aerial photographs available from the ACT Planning and Land Authority and two satellite images obtained from Google Earth were reviewed (refer to Aerial Photograph Plates D1 to D8 presented in Appendix D).

The photographs and image were examined for signs of potential areas of environmental concern such as planting patterns, previous structures which may have subsequently been removed, existing

structures, stripped soil or areas of filling or disturbance or other signs of potentially contaminating activities. Findings of the review are summarised Table 4

Table 4: Summary of Historical Aerial Photography Review

Aerial Photograph	On-site Conditions	Surrounding Area
1951 Photograph Run 9-5118	The site appeared to be unimproved open land open covered by grass and sporadic trees. Two small structures appeared to be present in the central part of the site, one of which may have been a homestead. Several track crossed the site. It is possible that hay production was occurring in the north-eastern corner of the site. Creek lines were present aligned south-east to north-west crossing the central portion of the site of the site.	The surrounding area was unimproved open grassland and several farm dams were present. Jerrabomberra Creek was present immediately to the north of the site. An unsealed track was present to the south of the site. A railway line was present to the west of the site.
1961 Photograph Sortie 23-120	Largely unchanged from the previous aerial photograph. A farm dam was present in the south west corner of the site.	Largely unchanged from the previous aerial photograph.
1973 Photograph Run 73C14-128	The western part of the site had been developed as a race track arena consisting of an oval-shaped vehicle track and earthen embankment The race track appeared to be unsealed. Two buildings were present on the western side of the race track and one building was present on the eastern side of the race track. Access tracks were present leading from the north-west corner of the site to the race track area. An excavation was present immediately to the east of the possible homestead located in the central part of the site. The eastern part of the site was largely unchanged.	Largely unchanged from the previous aerial photograph. Farm dams and drainage channels had been cut into the agricultural land to the south of the site.
1983 Photograph Run 21-123	An additional race track had been constructed to the east of the original race track. The new race track area appeared to be unsealed.	The construction of commercial and industrial properties to the west of the site had been undertaken.

Aerial Photograph	On-site Conditions	Surrounding Area
	The area to the east of the original race track appeared to have been developed as an un-sealed car park and additional buildings had been constructed in this area. A disturbed area of ground was visible to the north-east of the original race track, adjacent to Jerrabomberra Creek. The excavation to the east of the homestead building had been in-filled. The second building visible on the 1951 aerial photograph was no longer present. Several tracks crossed the site, a track crossed the site along the northern site boundary to a building located in the north-east corner of the site.	
1990 Photograph Run 21-792	Largely unchanged from the previous photo. Two additional small buildings were present to the west of the race track. Several small stockpiles were present in the west of the site. The car parking area to the east of the original race track had been enlarged and the second race track appeared to be un-used. Buildings had been constructed in the north-east corner of the site, where bare earth was present and it appeared the banks of Jerrabomberra Creek had been excavated.	Additional construction of commercial and industrial properties to the west of the site had been undertaken. A lake had been constructed to the east of the site.
1995 Photograph Run21-64	Largely unchanged from the previous aerial photograph.	Largely unchanged from the previous photo. Some additional buildings had been developed in the north-east corner of the site.
1998 Photograph Run 8-92	Largely unchanged from the previous aerial photograph. Some of the buildings associated with the race track were no longer present.	Residential properties had been developed to the east of the site.
2005 GoogleEarth Satellite Image	The race track area of the site appeared to be disused and some of the buildings appeared to have been demolished. The buildings in the north-east corner of	Largely unchanged from the previous aerial photograph.

Aerial Photograph	On-site Conditions	Surrounding Area
	the site were no longer present.	
2018 GoogleEarth Satellite Image	Largely unchanged from the previous aerial photograph. A dirt road had been constructed along the southern boundary of the site	Largely unchanged from the previous aerial photograph

5.4 Additional Historical Information

An internet search for the 'Tralee Speedway' conducted on 2 July 2018 indicated the following information:

- The Tralee Speedway was constructed during 1970 and opened in May 1970;
- The speedway consisted of an oval track with a surrounding earthen embankment. The race track had a dirt surface and was 410 m in length;
- A large building was located adjacent to the west of the track. It is understood that the building contained a canteen and control tower for race track operations;
- A 'pits area' was located to the east of the track where cars were prepared for racing;
- Between 1974 and 1977 it is understood that the race track was sealed with bitumen. Following 1977, it is understood that the surface of the race track was returned to dirt and a second race track, approximately half a mile in length was built to the east of the main race track; and
- The speedway ceased operations in 1997.

6. Site Inspection

A site inspection was undertaken on 4 June 2018 by an experienced environmental scientist. The inspection was undertaken to check and identify (where possible) the likely presence, or otherwise, of potential sources of contamination. Reference was made to the site history review, in order to identify and comment on additional potential sources of contamination which were encountered or observed. Drawing 1, Appendix B, and site photographs, Appendix E, shows the layout of the site.

The following observations were made during the site inspection:

- The site is a large, relatively flat block of land that is mainly grassed that was un-used at the time of the site inspection;
- A race track was present in the central part of the site. The race track was oval shape and unsealed. Surrounding the race track was a large earthen embankment. The embankment was approximately 5 m to 6 m in height at its highest point and approximately 30 m wide;
- Two buildings were present to the west of the race track, a small square building and a larger rectangular building. The two buildings were in a state of disrepair and broken pieces of compressed cement sheeting were observed on the ground surface in the vicinity of both buildings;
- A concrete slab was located to the west of the two buildings indicating the former presence of another building. Building and demolition rubble was noted on the ground surface in this area;

- A soakaway was observed between the two buildings. The soakaway was constructed from a section of concrete pipe. Two drainage pipes were observed to enter the soakaway;
- A large concrete slab was present on the western side of the racetrack. Stockpiles of building and demolition rubble were present adjacent to the concrete slab;
- A stockpile of demolition rubble was present on the southern part of the earthen embankment. The stockpile contained timber and pieces of compressed cement sheeting;
- Immediately to the west of the race track was an area of hard standing surfaced with bitumen. Four concrete slabs were present in were present in this area. In addition, in the north western part of this area, stockpiles of building and demolition rubble were present;
- The remains of a toilet block building were present to the south of the hard standing area. A soakaway was observed associated with the toilet block building remains;
- An area of hummocky ground was present to the north-east of the race track area. Anthropogenic waste materials including metal, concrete and car parts were observed protruding from the ground surface. Information from the site owner's representative indicated that this area may have been used as a small landfill area associated with the speedway operation;
- The remains of an old homestead building were present to the south of the area of hummocky ground. What appeared to be a soakaway was present to the south of the homestead;
- A gravel road was present running along adjacent to the southern boundary of the site.
- A further toilet block was located to the south of the gravel road. The toilet block was constructed from cinder blocks and was in a state of disrepair. A soakaway was located to the north-west of the toilet block.
- Areas of disturbed ground were present adjacent to the western boundary of the site. Bare earth was present at the surface and anthropogenic material including concrete was observed, suggesting the presence of filling; and
- No potential sheep or cattle tick dip facilities were observed during the site inspection.

Selected site photographs from the site inspection visit are presented in Appendix E.

7. Proposed Development

DP understands that the proposed development will include the subdivision of the site for commercial/industrial and recreational use. Detailed development plans were not available at the time of writing this report, however, it is understood that the recreational use will include the development of playing fields. It is understood that at this time, there are no plans for residential development at the site.

8. Potential for Contamination

The site history review indicated that the site had primarily been used for livestock grazing prior to development of the Speedway race track in 1970. The race track was operational from 1970 to approximately 1997. Anecdotal information and the results of the site inspection indicated an area of

hummocky land was present in the north of the site that may have been associated with the dumping of waste material associated with the speedway operation. In addition, buildings located in the north-east corner of the site appeared in the early 1990s and were associated with potential sand or gravel extraction. The overall potential for contamination is considered to be moderate, with localised areas of high contamination potential..

Table 5 outlines the justification behind the identification of areas of environmental concern (AECs) and the environmental contaminants of concern (associated with each AEC). Due to the varying potential for environmental impact associated with different contamination sources, intrusive sampling should be undertaken targeting all potential AECs.

Table 5: Summary of Identified Areas of Environmental Concern

AEC Description	Justification	Potential Contaminants of Concern	Comments
AEC 1: Fill embankments with filling of unknown origin	Potential importation or use of filling of unknown origin. Possible contamination from burial of unknown wastes.	TRH, BTEX, PAH, Metals, OCP/OPP, PCB, Asbestos	Generally comprising the fill embankment surrounding the main speedway race track. DP considers the likelihood for contaminants to be present to be moderate to high. Soil media potentially affected.
AEC 2: Main Race Track	Potential spills and leaks from motor race vehicle during operation of the speedway.	TRH, BTEX, PAH and Metals	Race track was in operation for approximately 30 years. There is potential for accumulation of hydrocarbon contamination from spills and leaks from race vehicles. DP considers the likelihood for contaminants to be present to be moderate. Soil and groundwater media potentially affected.
AEC 3: Race Track pits area	Potential spills and leaks from motor race vehicle during operation of the speedway.	TRH, BTEX, PAH and Metals	The pits area to the east of the main race track was used to maintain vehicles prior to racing. There is the potential for accumulation of hydrocarbon contamination resulting from spills and leaks. DP considers the likelihood for contaminants to be present to be moderate. Soil and groundwater media potentially affected.
AEC 4: Hazardous Building Material	Hazardous building material associated with race track buildings.	Asbestos, Lead, PCBs	Potential asbestos containing material and lead paint used in construction of on-site buildings. DP considers the likelihood for contaminants to be present to be moderate to high in localised areas surrounding buildings. Soil media potential affected.

AEC Description	Justification	Potential Contaminants of Concern	Comments
AEC 5: Toilet Blocks and Soakaways	Potential biological pathogens associated with drainage of toilet blocks	E coli, Salmonella and Faecal coliforms	Several toilet blocks were present across the site. Site inspection indicated that these discharged to soakaways. There is the potential for biological pathogens to be present. DP considers the likelihood for contaminants to be present to be low to moderate. Soil and groundwater media potentially affected.
AEC 6: Historic on-site landfill	Anecdotal information indicates that waste from race track operation was buried on site.	TRH, BTEX, PAH, Metals, OCP/OPP, PCB, Asbestos	Anecdotal information from the current site owners indicates that waste material from speedway events were buried on site. DP considers the likelihood for contaminants to be present to be moderate to high. Soil and groundwater media potentially affected
AEC 7: Potential sand /gravel extraction	Historical aerial photographs indicate the possible extraction of sand and or gravel in the north-east corner of the site. Possible machinery associated with this activity may have been present.	TRH, BTEX, PAH, Metals, PCB	Potential machinery associated with any extraction may have been powered by fuel oils. Storage and use of fuel oils may have resulted in leaks and spills and the accumulation of hydrocarbon contamination. DP considers the likelihood for contaminants to be present to be low. Soil and groundwater media potentially affected.
AEC 8: Potential historical use of pesticides	Prior to development of the speedway, the site was used for grazing. Pesticides may have been applied to livestock.	OCP/OCP, metals	No obvious sheep dip sites were observed during the site inspection, however there is potential for pesticides to have been used at the site. DP considers the likelihood for accumulation of significant quantities of pesticides to be low. Soil media potentially affected

9. Conceptual Site Model

Based on Section 8, the potential contamination sources are as follows:

S1 – Fill embankments
S2 – Use of hydrocarbon fuel in race track area
S3 – Spills and leaks of hydrocarbon fuels in pit area
S4 – Hazardous Building Materials
S5 – Toilet blocks and soakaways

S6 – Filling in former landfill area
S7 – Potential sand and/or gravel extraction
S8 – Potential historical use of pesticides

9.1 Potential Receptors

9.1.1 Human Health Receptors

Potential human health receptors include the following:

R1 – Current users (general public)
R2 – Construction and maintenance workers
R3 – Future users (commercial workers and general public in recreational areas)
R4 – Land users in adjacent areas

9.1.1 Environmental Receptors

Potential Environmental Receptors include the following:

R5 – Groundwater
R6 – Surface water (Jerrabomberra Creek)
R7 – Ecological receptors

9.2 Potential Pathways

Potential pathways for contamination present include the following:

P1 – Incidental ingestion and dermal contact of soil and dust particulates
P2 – Indoor inhalation of vapours
P3 – Outdoor inhalation of dust particulates
P4 – Outdoor inhalation of vapours
P5 – Surface water run-off
P6 – Leaching of contaminants and vertical mitigation into groundwater
P7 – Lateral migration of groundwater providing base-flow to watercourses
P8 – Direct contact with ecological receptors

9.3 Summary of Potential Complete Pathways

A 'source–pathway–receptor' approach has been used to assess the potential risks of harm being caused to human, water or environmental receptors from contamination sources on or in the vicinity of the site, via transport pathways (potential complete pathways). The possible pathways between the above sources (S1 to S3) and receptors (R1 to R6) are provided below in Table 6.

Table 6: Summary of Potentially Complete Pathways

Source	Receptor	Transport Pathway	Comments
S1 – Fill Embankment	R2	P1, P3 and P4	The unknown origin of the filling within the embankment surrounding the racetrack presents a risk to human health receptors. An intrusive investigation is required to assess possible contamination within the filling. As the site is currently disused, no current users of the site were identified. If soil contamination is identified, assessment of groundwater and identified surface water receptors may be necessary. Investigation of soils is required to assess the risk to ecological receptors.
	R3	P1, P2, P3 and P4	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S2 – Use of hydrocarbon fuel in race track area S3 – Spills and leaks of fuels in pits area	R2	P1, P3 and P4	Leaks and spills of hydrocarbons were possible during the operation of the speedway. Intrusive investigation is required to assess possible site contamination. If soil contamination is identified, assessment of groundwater and identified surface water receptors may be necessary. Intrusive investigation of soils is required to assess the risk to ecological receptors.
	R3	P1, P2, P3 and P4	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S4 – Hazardous building materials	R2	P3	Intrusive investigation is required to establish the extent of hazardous building materials in filling materials present at the site.
	R3	P3	
S5 – Toilet blocks and soakaways	R2	P1	An intrusive investigation is required to assess possible site contamination. If soil contamination is identified, assessment of groundwater and identified surface water receptors may be necessary. Intrusive investigation of soils is required to assess the risk to ecological receptors.
	R3	P1	
	R5	P6 and P7	
	R7	P8	
S6 – Former landfill area	R2	P1, P3 and P4	The former landfill area was confirmed to contain waste material during the site inspection. An intrusive investigation is required to assess possible site contamination. If soil contamination is identified, assessment of groundwater and identified surface water receptors may be necessary. Intrusive investigation of soils is required to assess the risk to ecological receptors.
	R3	P1, P2, P3 and P4	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S7 – Potential sand and /or gravel extraction	R2	P1, P3 and P4	An intrusive investigation is required to assess possible site contamination. If soil contamination is identified, assessment of groundwater and identified surface water receptors may
	R3	P1, P2, P3 and P4	
	R5	P6 and P7	

Source	Receptor	Transport Pathway	Comments
	R6	P5 and P7	be necessary.
	R7	P8	Intrusive investigation of soils is required to assess the risk to ecological receptors.
S8 – Potential historical use of pesticides	R2	P1, P3	An intrusive investigation is required to assess possible site contamination.
	R3	P1, P3	
	R5	P6 and P7	If soil contamination is identified, assessment of groundwater and identified surface water receptors may be necessary.
	R6	P5 and P7	
	R7	P8	Intrusive investigation of soils is required to assess the risk to ecological receptors.

10. Sampling and Analysis Plan and Methodology

10.1 Data Quality Objectives

Data qualitative objectives (DQOs) are qualitative and quantitative statements that specify of data required for the assessment and have been derived from the CSM. The DQO process is a seven-step iterative planning approach that is used to define the type, quantity and quality of data needed to inform decisions relating to the environmental condition of a site. DQOs for this assessment were developed in accordance with the seven-step DQO process specified in NEPM (Schedule B2, Appendix B) and are summarised in Table 7 below.

Table 7: DQOs for the project

Problem	Uncertainty exists as to whether contamination exists at the site
Identify the Decision/ Goal	Does soil contamination exist from previous site uses? Are there any signs of elevated soil contamination within the site? Does the site, or is the site likely to, present a risk of harm to human health or the environment? Are there any significant contamination issues that could restrict the proposed development? Does the site require further investigation, remediation and/or validation to render the site suitable for the proposed use? Is there any contamination requiring the site to be listed on list of contaminated sites notified to the NSW EPA?
Information Inputs	Historical information regarding past land uses and features Site operations and observation details Soil profile information obtained through the sampling phase Chemical analysis data for soil samples analysed Assessment of analytical data against applicable site assessment criteria

Study Boundaries	The physical site boundary is shown on Drawing 1, Appendix B and forms the boundary of this investigation. The temporal boundary of this assessment is limited to the time at which the assessment was conducted.
Decision Rules	Information obtained in this investigation is to be used to make an assessment of contamination issues likely to impact on the proposed development. In assessing analytical data against screening levels for ecological and/or human health risk, site conditions can be stated to be acceptable if either: • All results are below the relevant screening level; OR • Individual concentrations of analytes (non-volatile) are less than 250% of the relevant screening level; and • The 95% upper confidence limit (UCL) of mean concentrations of a data set for samples of like material is below the relevant screening level; and • The standard deviation of the population is <50% of the relevant screening level. Statistical analysis needs only be conducted where analytical results for a contaminant of concern are recorded above, but less than 250% of the relevant screening level. Laboratory results are accepted and considered suitable for this assessment under the following conditions: • All laboratories are accredited by National Association of Testing Authorities (NATA) for all analyses to be performed. • All practical quantitation limits (PQLs), or laboratory limits of reporting (LORs) set by the laboratories fall below the adopted assessment criteria; • Reported concentrations of analytes in the replicate and/or split sample pairs are within accepted limits; and • Quality assurance/quality control (QA/QC) protocols and results reported by the laboratories comply with the requirements of NEPM (Schedule B3).
Performance Criteria	Analyte selection was based on available site history information, observed site activities, site features, and field observations during sampling. The potential for contaminants to be present other than those analysed is considered to be low. Assessment criteria adopted from the guidelines stated in Section 12 incorporate risk probabilities. Acceptable limits for laboratory QA/QC parameters are based on those stated by the laboratory and those stated in NEPM (Schedule B3).
Optimise design	Locate sampling points to target potential sources of contamination. Procedures for collection of environmental samples were developed prior to fieldwork with reference to NEPM, AS4482.1, AS4482.2, and current good industry practice. Use of NATA accredited analytical laboratories to conduct sample analyses.

10.2 Sampling Rationale

The site area is understood to be approximately 54 hectares. For the purposes of this investigation, the site was split into smaller areas for investigation as recommended by the NSW EPA Sampling Density Guidelines (NSW EPA, 1995).

The site was divided into three zones for more effective sampling of the site. The division of the site was based on the past uses of the site identified during the desktop site history review. The site was divided into the following smaller areas.

- The motor vehicle speedway area in the central south of the site;
- The former landfill in the north of the site;
- Former toilet blocks; and
- Areas of the site used for agricultural purposes.

The following sampling rationales were developed for each of the above areas.

10.2.1 Motor Vehicle Speedway

The motor vehicle racing track is approximately 4 ha in size and comprises the former race track surface, a large fill embankment, a race track pits area and former buildings that are in various states of disrepair, with the majority only retaining the concrete slab. DP excavated 42 test pits across this area to target the following PAEC.

- Nineteen test pits (Pits 1 to 15, Pits 31 to 33 and Pit 50) were excavated within the fill embankment surrounding the main race track (AEC 1). Pits 1 to 10, 31 to 33 and 50 were excavated from the top of the fill embankment. Pits 11 to 15 were excavated into the northern slope of the northern side of the embankment.
- Six test pits (Pits 16 to 21) were excavated within the main race track (AEC 2).
- Nine test pits (Pits 22 to 30) were excavated within the race track pits area to the east of the main race track (AEC 3) and
- Eight test pits (Pits 34 to 40 and Pit 49) were excavated in the vicinity of building footprints (AEC 4).

10.2.2 Former Landfill

The former possible landfill in the north of the site is approximately 3,000 m^2 in size and is understood to comprise an area where waste from racing events was dumped and then covered with soil. DP excavated 10 test pits (Pits 51 to 60) across this area to target the AEC (AEC 6).

10.2.3 Former Toilet Blocks

Eight test pits (Pits 41 to 48) were excavated to investigate the former toilet blocks and soakaways (AEC5).

10.2.4 Former Agricultural Use

The site is understood to have been used for grazing purposes prior to development of the motor speedway. DP excavated 20 test pits (Pits 61 to 80) across the site to assess for contaminants associated with agricultural use. This also included 3 test pits (Pits 63 to 65) located within the north-east corner of the site to assess potential contamination associated with the possible extraction of sand and/or gravel.

10.3 Methods and Sampling Locations

The fieldwork comprised the excavation of 80 test pits (Pits 1 to 80) to a maximum depth of 3.2 m below ground level (bgl) using a Kobelco mini-excavator fitted with a 450 mm bucket. Samples were collected directly from pit walls or directly from the centre of the excavator bucket at regular intervals during the excavation process. All test locations were selected for the collection of soil samples.

Fieldwork was undertaken between on 18 June and 26 June 2018 by suitably qualified environmental scientists who undertook the following:

- Marking out the test locations;
- Logging of the subsurface profile; and
- Collection of samples to assist in strata identification and for laboratory testing purposes.

A calibrated photo-ionisation detector (PID) was used during the fieldwork to screen the collected soil samples to assess whether volatile organic compounds were present. The approximate test locations are shown on Drawing 1 in Appendix B. Sampling depths are shown on the test pit logs in Appendix F.

10.4 Soil Sampling Procedure

All sample locations were checked for underground services by a review of dial before you dig (DBYD) plans and by a services locator.

All sampling data was recorded on DP test pit logs with essential information included on the chain-of-custody sheets. The general sampling procedure adopted for the collection of environmental samples is summarised below:

- The use of disposable gloves for each sampling event;
- Transfer of samples into laboratory-prepared glass jars, and capping immediately;
- Collection of replicate soil samples in zip-lock plastic bags at each depth for PID screening;
- Collection of replicate samples for QA/QC purposes;
- Labelling of sample containers with individual and unique identification, including project number, sample location and sample depth;
- Placement of the sample jars and replicate sample bags into a cooled, insulated and sealed container for transport to the laboratory;
- Selected soil samples within the filling were subjected to field screening for asbestos following the procedure described within the WA DOH guidelines; and

- Use of chain of custody (COC) documentation so that sample tracking and custody could be cross-checked at any point in the transfer of samples from the field to the laboratory.

Samples for environmental purposes were generally collected from the near surface, and at regular depth intervals or changes in strata within each test pit.

Soil samples were collected from the centre of the excavator bucket. Care was taken whilst collecting the samples to remove any extraneous material on the outside of the bucket.

Envirolab Services Pty Ltd (Envirolab) (NATA accreditation number: 2901) was used for the analysis of soil samples. The laboratory is required to carry out routine in-house QC procedures.

Field replicates were recovered and analysed by intra-laboratory analysis for a limited suite of contaminants with reference to standard industry practice and guidelines. The comparative results are outlined in Appendix G together with other QA/QC evaluations of the assessment, COC documentation (Field and Laboratory) and sample receipt information.

10.5 Analytical Rationale

The analytical scheme was designed to obtain an indication of the presence of a broad range of contaminants of potential concern (COPC) that may be attributable to past and present activities and features that may reasonably be expected to have occurred within the site as identified in the CSM (see Section 9).

Selected primary soil samples were analysed for the various COPC namely metals (As, Cd, Cr, Cu, Pb, Hg, Mn, Ni, Zn), TRH, BTEX, PAH, PCB, OCP, OPP, phenols and asbestos.

Laboratory analytical methods are as stated in the certificate of analysis in Appendix H.

11. Quality Assurance and Quality Control

Quality assurance (QA) and quality control (QC) measures were implemented throughout the investigation. This was achieved by defining the data quality objectives (DQOs, Table 7) for the project based on the CSM prior to the commencement of field investigations. All QA/QC information was then evaluated against the DQOs and is summarised in Appendix G.

12. Site Assessment Criteria

The site is proposed to be subdivided and developed into commercial/industrial land use and recreational use in the form of playing fields. The site has therefore been assessed against criteria for public open space and commercial/industrial land use settings.

The Site Assessment Criteria (SAC) applied in the current investigation are informed by the CSM (refer to Section 9) which identified human and environmental receptors to potential contamination on the site. Analytical results were assessed (as a Tier 1 assessment) against the SAC comprising the

investigation and screening levels of Schedule B1, *National Environment Protection (Assessment of Site Contamination) Measure* 1999, as amended 2013 (NEPC, 2013) (Ref 4). The NEPC guidelines are endorsed by the NSW EPA.

The investigation and screening levels are applicable to generic land use settings and include consideration of, where relevant, the soil type and the depth of contamination. The investigation and screening levels are not intended to be used as clean up levels. Rather, they establish concentrations above which further appropriate investigation (e.g. Tier 2 assessment) should be undertaken. They are intentionally conservative and are based on a reasonable worst-case scenario.

12.1 Health Investigation and Screening Levels

The Health Investigation Levels (HIL) and Health Screening Levels (HSL) are scientifically-based, generic assessment criteria designed to be used in the first stage (Tier 1) of an assessment of potential human health risk from chronic exposure to contaminants.

HILs are applicable to assessing health risk arising via all relevant pathways of exposure for a range of metals and organic substances. The HIL are generic to all soil types and apply generally to a depth of 3 m below the surface for recreational/open space land use. A depth of 1 m below the surface has been adopted for this investigation for a recreational land use.

HSLs are applicable to selected petroleum compounds and fractions to assess the risk to human health via inhalation. HSL have been developed for different land uses, soil types and depths to contamination.

The generic HIL and HSL are considered to be appropriate for the assessment of contamination at the site. Given the proposed land use, the adopted HIL and HSL are:

- HIL-C/HSL-C – Recreational includes public open space such as parks, playgrounds, playing field (e.g. ovals), secondary schools and unpaved footpaths; and
- HIL-D/HSL-D Commercial/Industrial land use.

In addition, the HSL adopted are predicated on the inputs summarised in Table 8.

Table 8: Inputs to the Derivation of HSLs

Variable	Input	Rationale
Potential exposure pathway	Soil vapour intrusion (inhalation)	Potential exposure pathways include vapour intrusion through concrete slabs from potentially contaminated filling beneath the slab. There is also the risk of soil vapours during any excavation of potentially contaminated filling.
Soil Type	Silt	A mixture of gravel, sand, silt and clay was encountered during the intrusive investigation (Section 13). Silt has been adopted as an initial conservative screen.
Depth to contamination	0 m to <2 m	A conservative approach has been adopted for this DSI. A depth of 1 m bgl has been adopted in the

Variable	Input	Rationale
		areas where filling was encountered.

The adopted soil HIL and HSL for the potential contaminants of concern are presented in Table 9

Table 9: Health Investigation and Screening Levels (HIL and HSL) in mg/kg unless otherwise indicated

Contaminants		HIL-C	HSL-C 0 m to <1m	HIL-D	HSL-D 0 m to <1m
Metals	Arsenic	300	NC	3,000	NC
	Cadmium	90	NC	900	NC
	Chromium (VI)	300	NC	3,600	NC
	Copper	17,000	NC	240,000	NC
	Lead	600	NC	1,500	NC
	Mercury (inorganic)	80	NC	730	NC
	Nickel	1,200	NC	6,000	NC
	Zinc	30,000	NC	400,000	NC
PAH	Benzo(a)pyrene TEQ[1]	3	NC	40	NC
	Naphthalene	NC	NL	NC	NL
	Total PAH	300	NC	4,000	NC
TRH	C6 – C10 (less BTEX) [F1]	NC	NL	NC	260
	>C10-C16 (less Naphthalene) [F2]	NC	NL	NC	NL
	>C16-C34 [F3]	NC	NC	NC	NC
	>C34-C40 [F4]	NC	NC	NC	NC
BTEX	Benzene	NC	NL	NC	3
	Toluene	NC	NL	NC	NL
	Ethylbenzene	NC	NL	NC	NL
	Xylenes	NC	NL	NC	230
Phenol	Phenol	40,000	NC	240,000	NC
OCP	Aldrin + Dieldrin	10	NC	45	NC
	Chlordane	70	NC	530	NC
	DDT+DDE+DDD	400	NC	3,600	NC
	Endosulfan	340	NC	2,000	NC

Contaminants		HIL-C	HSL-C	HIL-D	HSL-D
			0 m to <1m		0 m to <1m
	Endrin	20	NC	100	NC
	Heptachlor	10	NC	50	NC
	HCB	10	NC	80	NC
	Methoxychlor	400	NC	2,500	NC
OPP	Chlorpyrifos	250	NC	2,000	NC
PCB[2]		1	NC	7	NC

Notes:
1 sum of carcinogenic PAH
2 non dioxin-like PCBs only
3 NC – No Criteria
4 NL – Not Limiting

12.2 Ecological Investigation Levels

Ecological Investigation Levels (EIL) have been derived for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems (NEPC, 2013). EIL depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil, which corresponds to the root zone and habitation zone of many species. The EIL is determined for a contaminant based on the sum of the ambient background concentration (ABC) and an added contaminant limit (ACL). The ABC of a contaminant is the soil concentration in a specific locality that is the sum of naturally occurring background levels and the contaminants levels that have been introduced from diffuse or non-point sources (e.g. motor vehicle emissions). The ACL is the added concentration (above the ABC) of a contaminant above which further appropriate investigation and evaluation of the impact on ecological values is required.

The EIL is calculated using the following formula:

$EIL = ABC + ACL$,

The ABC is determined through direct measurement at an appropriate reference site or through the use of methods defined by Olszowy et al *Trace element concentrations in soils from rural and urban areas of Australia*, Contaminated Sites monograph no. 4, South Australian Health Commission, Adelaide, Australia 1995 (Olszowy, 1995) or Hamon et al, *Geochemical indices allow estimation of heavy metal background concentrations in soils*, Global Biogeochemical Cycles, vol. 18, GB1014, (Hamon, 2004). ACL is based on the soil characteristics of pH, CEC and clay content.

EIL (and ACLs where appropriate) have been derived in NEPC (2013) for only a short list of contaminants comprising As, Cu, Cr (III), DDT, naphthalene, Ni, Pb and Zn. An *Interactive (Excel) Calculation Spreadsheet* may be used for calculating site-specific EIL for these contaminants, and has been provided in the ASC NEPM Toolbox available on the SCEW (Standing Council on Environment and Water) website (http://www.scew.gov.au/node/941).

The adopted EIL, derived from the *Interactive (Excel) Calculation Spreadsheet* are shown in the following Table 10. The following site specific data and assumptions have been used to determine the EILs.

- A protection level of 80% for urban residential and public open space land uses has been adopted;
- The EILs will apply to the top 2 m of the soil profile;
- Given the likely source of soil contaminants (i.e. historical filling, golf course maintenance) the contamination is considered as "aged" (>2 years);
- ABCs have been derived using the *Interactive (Excel) Calculation Spreadsheet* using input parameters of NSW for the State in which the site is closest to, and high for traffic volumes. No background concentration is assumed for lead (conservative).
- Based on average pH, CEC and clay content values for soils collected across the site, the following values have been used for the soil profile: pH = 8.7, CEC = 21.4 $cmol_c/kg$ and clay content = 19%. The Calculation Spreadsheets are included in Appendix I.

Table 10: Ecological Investigation Levels (EIL) in mg/kg

Analyte		EIL	Comments
Metals	Arsenic	100	Adopted pH of 8.7, CEC of 21.4 $cmol_c/kg$ and clay content 19%
	Copper	230	
	Nickel	280	
	Chromium III	410	
	Lead	1100	
	Zinc	810	
PAH	Naphthalene	170	
OCP	DDT	180	

12.3 Ecological Screening Levels – Petroleum Hydrocarbons

Ecological Screening Levels (ESL) are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. ESL apply to the top 2 m of the soil profile as for EIL.

ESL have been derived in NEPC (2013) for petroleum fractions F1 to F4 as well as BTEX and Benzo(a)pyrene. Site specific data and assumptions as summarised in Table 11 have been used to determine the ESL. The adopted ESL, from Table 1B(6), Schedule B1 of NEPC (2013) are shown in Table 12.

Table 11: Inputs to the derivation of ESL

Variable	Input	Rationale
Depth of ESL application	Top 2 m of the soil profile	The top 2 m depth below ground level corresponds to the root zone and habitation zone of many species

Land use	Public open space	It has been assumed for this site contamination assessment that the activities on site will be public open space land uses
Soil Texture	Fine	The approach adopted for this investigation is based on the sand, silt and clay soils encountered during the investigation

Table 12: Ecological Screening Levels (ESL) in mg/kg

Analyte		ESL	Comments
TRH	C6 – C10 (less BTEX) [F1]	180*	*All ESLs are low reliability apart from those marked with * which are moderate reliability
	>C10-C16 (less Naphthalene) [F2]	120*	
	>C16-C34 [F3]	1,300	
	>C34-C40 [F4]	5,600	
BTEX	Benzene	65	
	Toluene	105	
	Ethylbenzene	125	
	Xylenes	45	
PAH	Benzo(a)pyrene	0.7	

12.4 Management Limits – Petroleum Hydrocarbons

In addition to appropriate consideration and application of the HSL and ESL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services.

Management Limits to avoid or minimise these potential effects have been adopted in NEPC (2013) as interim Tier 1 guidance. Management Limits have been derived in NEPC (2013) for the same four petroleum fractions as the HSL (F1 to F4). The adopted Management Limits, from Table 1B(7), Schedule B1 of NEPC (2013) are shown in the following Table 13. The following site specific data and assumptions have been used to determine the Management Limits:

- The Management Limits will apply to any depth within the soil profile;
- The Management Limits for residential, parkland and public open space apply;
- A mixture of sand, silt and clay was encountered during the DSI (Section 13). Silt (fine) has been adopted as an initial conservative screen.

Table 13: Management Limits in mg/kg

Analyte		Management Limit
TRH	$C_6 - C_{10}$ (F1) *	800
	$>C_{10}-C_{16}$ (F2) *	1,000

Analyte		Management Limit
	>C_{16}-C_{34} (F3)	3,500
	>C_{34}-C_{40} (F4)	10,000

Separate management limits for BTEX and naphthalene are not available hence these have not been subtracted from the relevant fractions to obtain F1 and F2.

12.5 Asbestos in Soil

Bonded asbestos-containing material (ACM) is the most common form of asbestos contamination across Australia, generally arising from:

- Inadequate removal and disposal practices during demolition of buildings containing asbestos products;
- Widespread dumping of asbestos products and asbestos containing filling on vacant land and development sites; and
- Commonly occurring in historical filling containing unsorted demolition materials.

Mining, manufacturing or distribution of asbestos products may result in sites being contaminated by friable asbestos including free fibres. Severe weathering or damage to bonded ACM may also result in the formation of friable asbestos comprising fibrous asbestos (FA) and/or asbestos fines (AF).

Asbestos only poses a risk to human health when asbestos fibres are made airborne and inhaled. If asbestos is bound in a matrix such as cement or resin, it is not readily made airborne except through substantial physical damage. Bonded ACM in sound condition represents a low human health risk, whilst both FA and AF materials have the potential to generate, or be associated with, free asbestos fibres. Consequently, FA and AF must be carefully managed to prevent the release of asbestos fibres into the air.

On the basis that several land uses will be present within the final development, and in accordance with Table 1, Schedule B1, NEPC (Ref 4), asbestos HSL for applicable land use settings have been included to assess the contamination risk posed by asbestos.

Table 14: Health Screening Levels for Asbestos Contamination in Soil (% w/w)

Form of Asbestos	HSL-C	HSL-D
	Public Open Space	Commercial / Industrial
Bonded ACM	0.02 %	0.05 %
FA and AF	0.001 %	0.001 %
All Forms of Asbestos	No visible asbestos for surface soil	

13. Results of the Investigation

13.1 Subsurface Conditions

Details of the subsurface conditions encountered during the field work are included on the logs, refer Appendix F, which must be read in conjunction with the included explanatory notes that define classification methods and terms used to describe the soils and rocks. In summary, the pits encountered variable subsurface conditions underlying the site with the succession of strata broadly summarised as follows for each of the main site areas:

13.1.1 Race Track Embankment

- FILLING: generally moist to dry silty sand, clayey sand and silty clay encountered in all pits within the race track embankment to a maximum depth of 3.2 m. It should be noted, pits situated on top of the embankment were not able to fully penetrate the depth of the embankment due to height of the embankment and restrictions on the reach of the excavator. Minor anthropogenic material including metal and plastic was encountered in Pits 2, 6, 31 and 32; and
- SANDY CLAY/SANDY SILT: moist to dry, orange brown to brown sandy clay and sandy silt in pits 11 to 15, 31 to 33 to depths of 1.6 m to 3.2 m bgl which were terminated in this strata.

13.1.2 Former Race Track Area

- FILLING: generally moist to dry, brown to orange brown gravelly sand, sandy silt, silty clay or sand clay, cemented in places, with well graded gravel, encountered in Pits 16 to 21 to depth of between 0.4 m to 1.3 m bgl; and
- SANDY CLAY/SILTY CLAY: moist to dry, brown to orange brown and mottle grey with varying sand and silt content with trace gravel, encountered in Pits 16 to 21 to depths of 1.6 m to 2.7 m bgl.

13.1.3 Former Race Track Pits Area

- ASPHALT: black asphalt cement with a maximum thickness of 0.01 m encountered in Pits 25 and 28;
- TOPSOIL FILLING: moist to dry brown, sandy silt and silty sand encountered in Pits 21, 23, 24, 26, 27 to depths of between 0.02 m and 0.15 m bgl;
- FILLING: generally moist to dry, brown to orange brown sandy clay, silty sand or gravelly sand, , encountered in Pits 22 to 30 to depths of between 0.2 m to 1.6 m bgl. Minor anthropogenic content including bitumen, metal, concrete and plastic were observed; and
- SILTY CLAY/SANDY CLAY: moist to dry, brown to orange brown and mottled grey with varying sand and silt content with trace gravel, encountered in Pits 22 to 30 to depths of between 1.2 m and 2.5 m bgl.

13.1.4 Former Landfill Area

- FILLING: generally moist to dry, brown to dark brown silty sand or sandy silts, encountered in Pits 50 to 53, 56 and 56 to depths of between 0.9 m to 2.1 m bgl. Waste material content including

food packaging, glass, metal, cloth, drink cans, bitumen, metal, concrete, tyres, car parts, oil barrel and plastic were observed. Corrugated compressed cement sheet fragments were observed in Pit 57; and

- SILTY CLAY/SANDY CLAY: moist to dry, brown to orange brown and mottle grey with varying sand and silt content with trace gravel, encountered in Pits 51 to 60 to depths of between 1.0 m and 2.3 m bgl.

13.1.5 General Areas of the Site

- FILLING: generally moist to brown to orange brown silty and sandy clay, silty sand or sandy silt, encountered in Pits 41 to 48, 63, 65, 70 and 76 to 80 to depths of between 0.1 m to 2.1 m bgl. Minor anthropogenic content including bitumen, metal, concrete and brick was observed in Pits 44, 46, 47 and 80;
- TOPSOIL: moist brown silty clay with some rootlets encountered in Pits 34 to 40, 60 to 62, 64, 66 to 69 and 71 to 73 to depths of between 0.02 m to 0.2 m bgl;
- SILTY SAND/CLAYEY SAND: light brown/grey to orange brown silty clay or sandy clay encountered in Pits 34 to 40, 61, 70 and 71 to depths of between 1.5 m and 2.5 m bgl; and
- SILTY CLAY/SANDY CLAY: light brown/grey to orange brown silty clay or sandy clay encountered in Pits 41 to 49, 62 to 69 and 72 to 80.

13.2 Field Screening Observations

The results of the PID screening are included on the test pit logs (Appendix F). The screening tests indicated that the subsurface conditions were generally absent of volatile organic compounds with recorded values generally less than 5 ppmV.

13.3 Contamination Observations

13.3.1 Field Sieve Screening for Asbestos

Samples (10 L) for on-site sieving for the assessment of asbestos were collected from pits where filling was present. The results of the on-site sieving analysis reported fragments of potential ACM in good condition were identified the following pits:

- Pit 57 1.0 m to 1.1 m bgl – two fragments of ACM in good condition were identified. The fragments were approximately 70 mm to 80 mm in length and weighed 42.3 g; and
- Pit 57 2.0 m to 2.1 m bgl – three fragments of ACM were identified. The fragments were in good condition and ranged in size from approximately 40 mm to 200 mm in length and weighed 223.50 g.

The fragments were collected and submitted for laboratory analysis for asbestos.

The results of the field sieve screening are presented in Table J1 in Appendix J.

13.4 Analytical Results

A summary of the results of the laboratory analysis undertaken on the soil and surface water samples are presented in Tables J2 to J5 in Appendix J along with the laboratory certificates.

13.5 Assessment of Laboratory Results

13.5.1 Motor Vehicle Speedway Area

All soil results for TRH, BTEX, PAH, OPP, OPP and PCB were below the laboratory's practical quantitation limit (PQL) and therefore below the site assessment criteria (SAC).

Soil results for metals were generally above the laboratory PQL with the exception of arsenic, cadmium and mercury which were below the laboratory PQL. All soil results for metals were below the SAC.

Soil results for asbestos reported that the laboratory analysis did not record the present of asbestos, including FA/AF.

13.5.2 Former Landfill Area

All soil results for TRH, BTEX, PAH, OPP, OPP and PCB were below the laboratory's practical quantitation limit (PQL) and therefore below the site assessment criteria (SAC).

Soil results for metals were generally above the laboratory PQL with the exception of arsenic, cadmium and mercury which were below the laboratory PQL. All soil results for metals were below the SAC.

Soil results for asbestos reported that the laboratory analysis of the fragments of potential ACM collected from Pit 57 at 1.0 m to 1.1 m and 2.0 m to 2.1 m bgl contained amosite, chrysotile and crocidolite asbestos fibres. The concentration of asbestos in soil for these two samples was 0.046 % and 0.224 %, respectively. The concentration of asbestos in the sample from Pit 57 2.0 m to 2.1 m bgl was above the investigation level for commercial/industrial land use and the concentration of asbestos in both samples was above the investigation level for parks and public open spaces.

13.5.3 Former Toilet Block Areas

All soil results for E. Coli, Salmonella and faecal coliforms were below the laboratory PQL.

13.5.4 Agricultural Areas

All soil results for TRH, BTEX, PAH, OPP, OPP and PCB were below the laboratory's PQL and therefore below the site assessment criteria (SAC).

Soil results for metals were generally above the laboratory PQL with the exception of arsenic, cadmium and mercury which were below the laboratory PQL. All soil results for metals were below the SAC.

Soil results for asbestos reported that the laboratory analysis did not record the present of asbestos, including FA/AF.

14. Revised Conceptual Site Model

The preliminary CSM in Section 9 has been updated to incorporate the findings of this PSI. The updated CSM is presented in Table 15 below.

Table 15: Revised Summary of Potentially Complete Pathways

Source	Receptor	Transport Pathway	Comments
S1 – Fill Embankment	R2	P1, P3 and P4	The results of the sampling of the fill embankment encountered filling comprising silty sand, clayey sand and silty clay with only trace inert anthropogenic inclusions noted. The laboratory analytical results indicate that gross contamination of the filling was not present within the areas of the site where samples were obtained. However, it should be noted that there is the potential for anthropogenic material to be present in areas of the embankment that were not sampled. Therefore it is considered that this pathway remains potentially complete.
	R3	P1, P2, P3 and P3	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S2 – Use of hydrocarbon fuel in race track area S3 – Spills and leaks of fuels in pits area	R2	P1, P3 and P4	The results of the limited sampling did not identify the presence of gross hydrocarbon contamination associated with the use of hydrocarbon fuels in the race track and pits areas. Therefore it is considered that this pathway is not complete.
	R3	P1, P2, P3 and P3	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S4 – Hazardous building materials	R2	P3	Hazardous building materials (ACM) were identified in buildings associated with the Speedway race track and it is considered that the pathway remains potentially complete. DP recommends that a hazardous materials survey be undertaken prior to demolition of the buildings. Results of the intrusive sampling in the vicinity of the buildings did not identify hazardous building materials present in the filling. However, it was not possible to obtain samples directly beneath the building slab footprint.
	R3	P3	
S5 – Toilet blocks and	R2	P1	The results of the limited sampling did not identify the presence of gross biological contamination associated
	R3	P1	

Source	Receptor	Transport Pathway	Comments
soakaways	R5	P6 and P7	with the former toilet blocks and soakaway areas. Therefore it is considered that this pathway is incomplete.
	R7	P8	
S6 – Former landfill area	R2	P1, P3 and P4	The former landfill area was confirmed to contain waste material during the intrusive investigation. Furthermore, ACM was confirmed to be present in Pit 57 at a concentration above the adopted investigation levels. Results of laboratory analysis of soil samples did not indicate chemical contaminants of concern above the adopted investigation levels. Due to the presence of asbestos and other waste materials, it is considered that this pathway remains potentially complete.
	R3	P1, P2, P3 and P3	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S7 – Potential sand and /or gravel extraction	R2	P1, P3 and P4	The results of the sampling did not identify the presence of gross contamination associated with the potential sand and/or gravel extraction that may have occurred in the north-east corner of the site. It is considered that this pollutant pathway is not complete.
	R3	P1, P2, P3 and P3	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	
S8 – Potential historical use of pesticides	R2	P1, P3	The results of the sampling did not identify the presence of gross contamination associated with the potential historical application pesticides that may have occurred at the site. It is considered that this pollutant pathway is not complete.
	R3	P1, P3	
	R5	P6 and P7	
	R6	P5 and P7	
	R7	P8	

15. Conclusions and Recommendations

The AECs were identified on the basis of the available site information, site inspection and limited subsurface investigation. Based on the findings of the assessment, including limited sampling and testing to date, the potential for gross contamination to be present within the site is considered to be low, with localised areas of more elevated contamination potential.

It is recommended that prior to the commencement of construction activities, further intrusive-based investigation be carried out to further characterise each of the identified AECs. The recommendations for further works are summarised in Table 16 below. The further works aim to confirm the suitability of the site for the proposed end-uses (commercial/industrial and recreational).

Table 16: Recommendations for Further Works

AEC	Description	Recommendations for further work
AEC 1	Fill Embankment	The results of the sampling of the fill embankment indicate that gross contamination was not present within the filling. DP understands the filling may be re-used on site. DP considers the filling may be suitable for on-site reuse subject to further investigation and the implementation of an unexpected finds protocol.
AEC 2	Use of hydrocarbon fuel in race track area.	No further investigation required but it would be prudent to include this area in the unexpected finds protocol
AEC 3	Spills and leaks of fuels in pits area	
AEC 4	Hazardous building materials	A pre-demolition hazardous materials survey is recommended for buildings and former buildings in the race track area and should be undertaken by a licensed asbestos assessor. Identified hazardous building materials should be removed by a licensed asbestos removalist and validation of the removal should be completed by a licensed asbestos assessor.
AEC 5	Toilet blocks and soakaways	No further investigation required except for a hazardous building materials survey.
AEC 6	Former landfill area	The results of the sampling of the former landfill identified the presence of anthropogenic waste, including asbestos containing material. DP recommends the area is excavated and stockpiled on site prior to undertaking a waste classification assessment in order to dispose the material off-site to a suitably licensed waste disposal facility.
AEC 7	Potential sand and /or gravel extraction	No further investigation required.
AEC 8	Potential former Pesticide use	No further investigation required.

Based on the assessment undertaken to date, it is considered that the site is likely to be suitable for the proposed development, following further investigation and remediation detailed in Table 16 above.

In addition, DP recommends that a construction environmental management plan (CEMP), incorporating an unexpected finds protocol be implement during the development works at the site.

16. References

1. National Environment Protection Council (NEPC) (1999), National Environment Protection (Assessment of Site Contamination) Measure, Schedule A and Schedule B1 to B9, (1999 – amended 2013).

2. NSW Office of Environment and Heritage (OEH) (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.
3. NSW Department of Land and Water Conservation (2000): *Canberra Soil Landscape Series Sheet 8727* 1:100 000 scale map
4. Bureau of Mineral Resources (1992): *Geology of Canberra Geological Series Sheet 8727, 1:100 000 scale map.*
5. Bureau of Mineral Resources, Geology and Geophysics (1984): *Hydrogeology of the Australian Capital Territory and Environs* 1:100,000 scale map.

17. Limitations

Douglas Partners (DP) has prepared this report for this project at 360A Alderson Place, North Tralee in accordance with DP's proposal CAN180102 dated 7 May 2018 and acceptance received from Jason Burgess of Canberra Estates Consortium No 4 Pty Ltd dated 6 June 2018. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Canberra Estates Consortium No 4 Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

Asbestos has been detected by observation and laboratory analysis in filling materials within the investigation area (Former landfill area). Building demolition materials, such as concrete, brick, tile, also observed which are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos. Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to vegetation preventing visual inspection and reasonable access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations

or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Douglas Partners Pty Ltd

Appendix A

About This Report

About this Report

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

July 2010

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

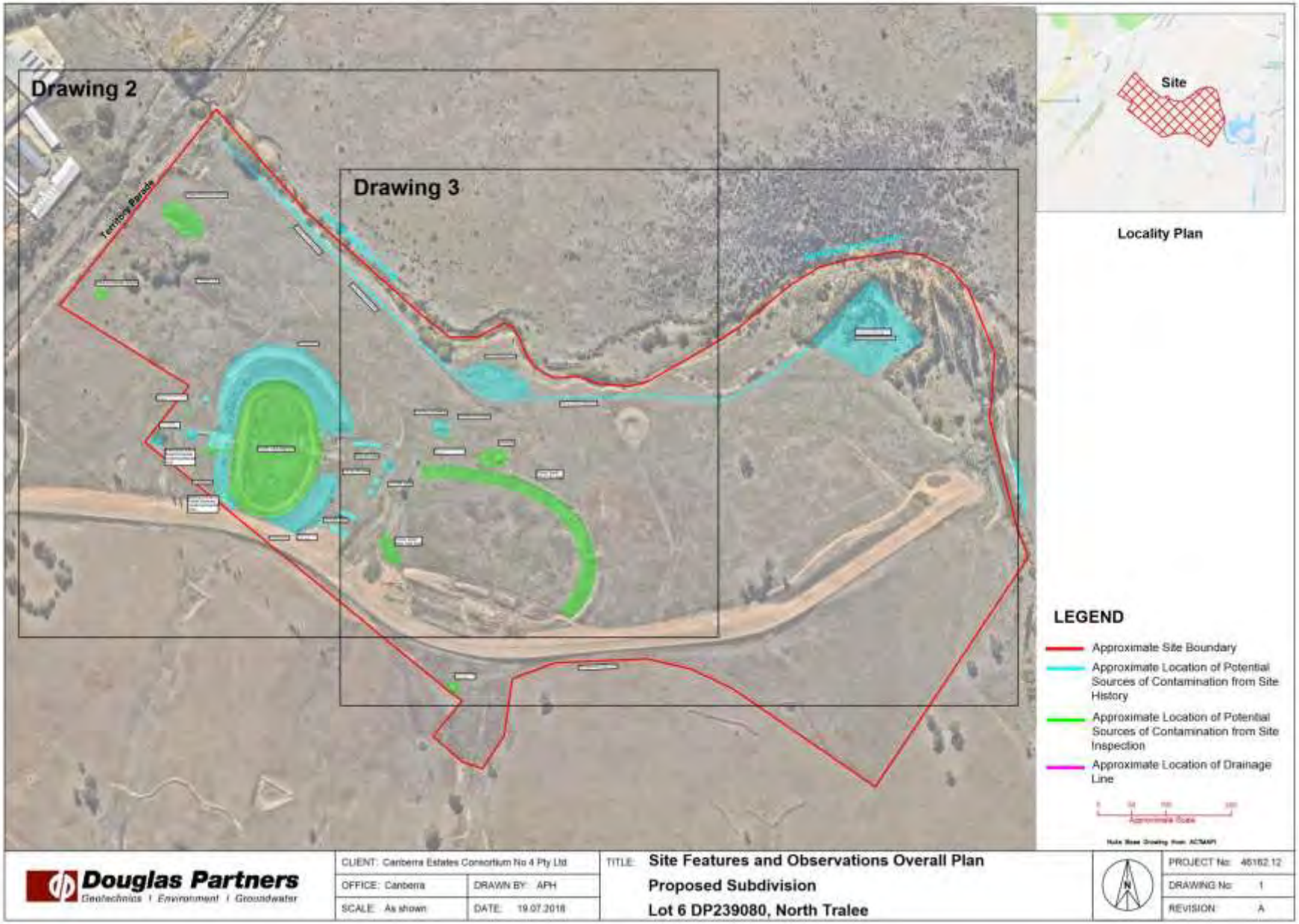
Site Inspection

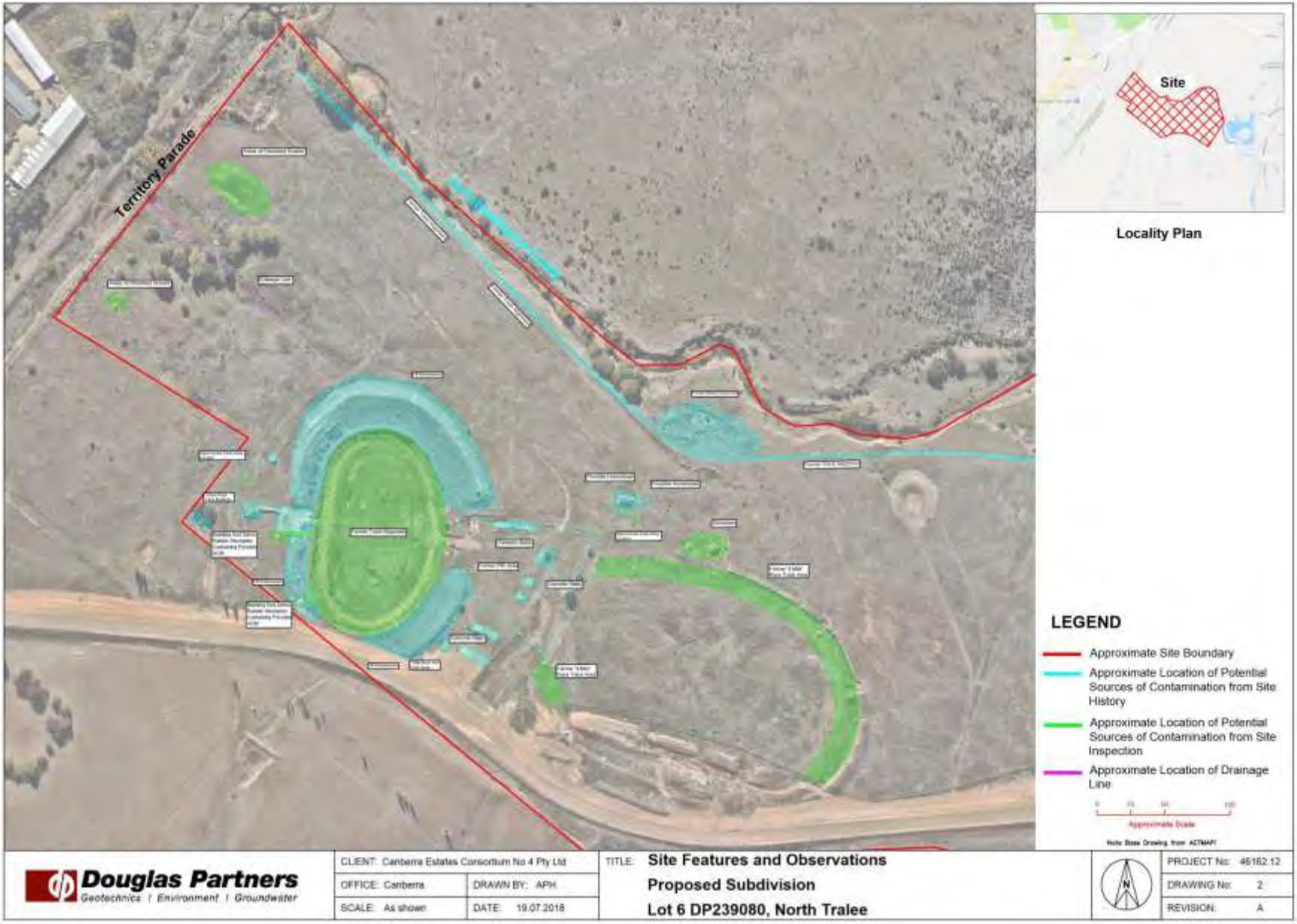
The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

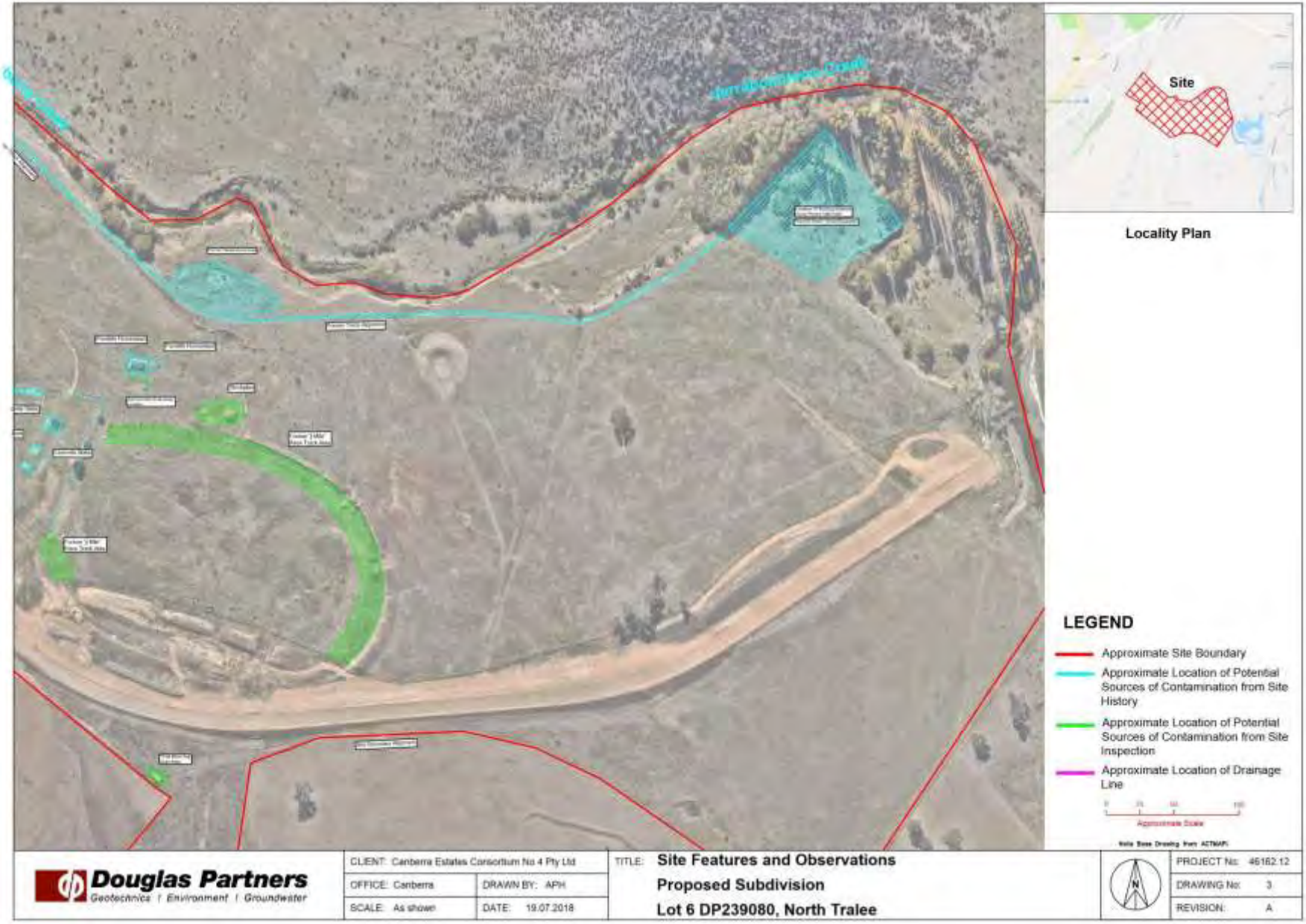
July 2010

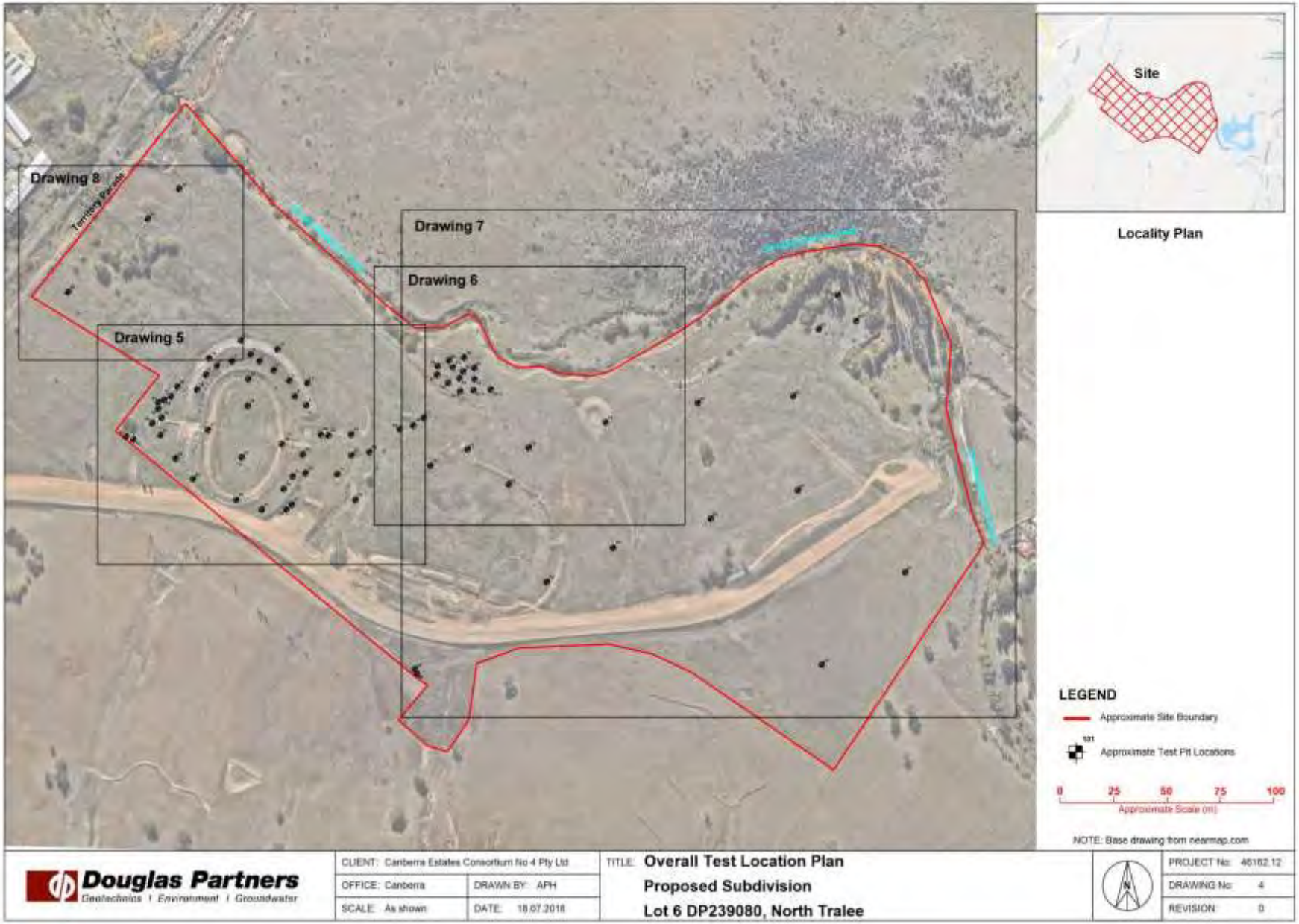
Appendix B

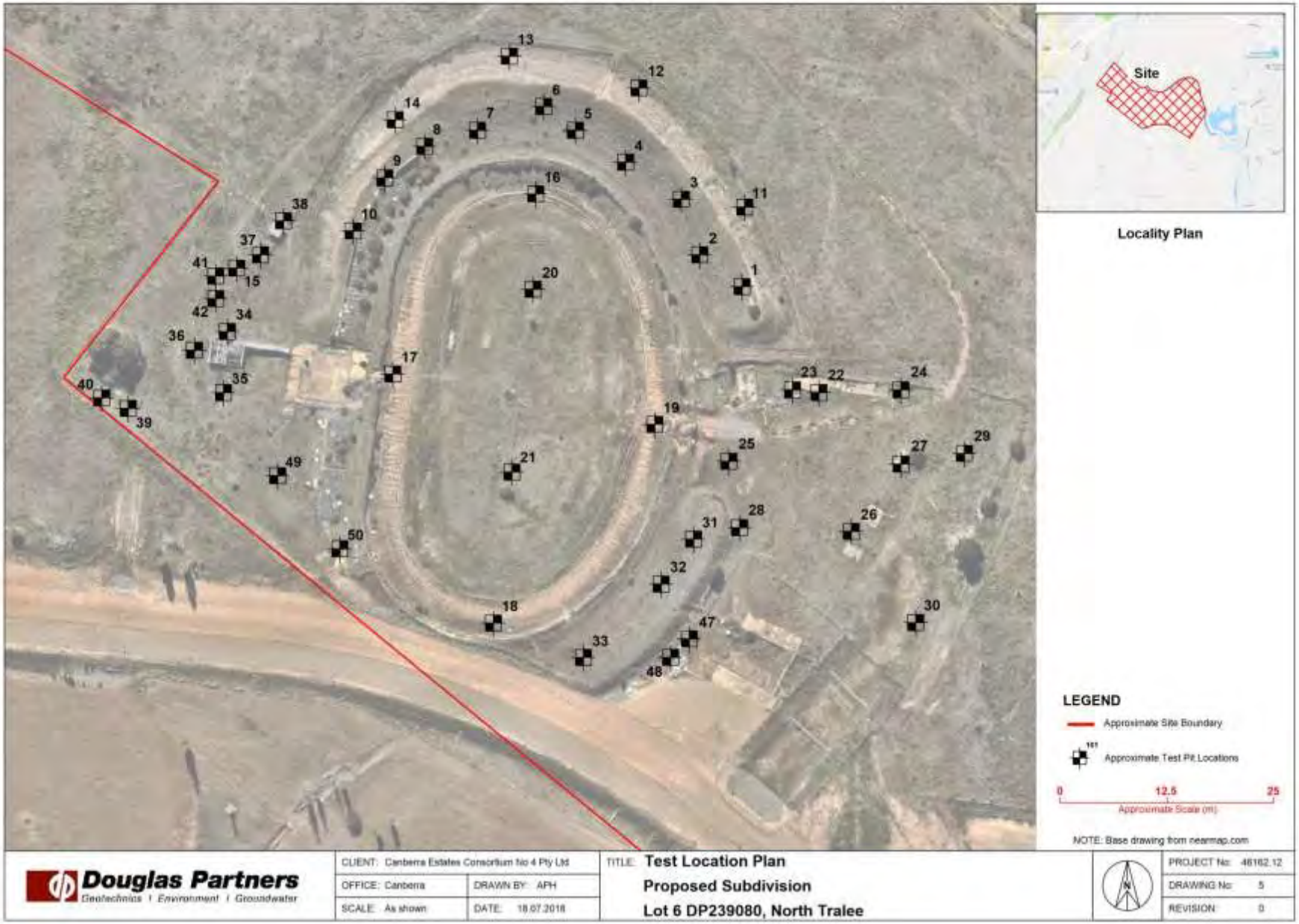
Drawings


Drawing 2
Drawing 3
Territory Parade
Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Location of Potential Sources of Contamination from Site History
Approximate Location of Potential Sources of Contamination from Site Inspection
Approximate Location of Drainage Line
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 19.07.2018
TITLE: Site Features and Observations Overall Plan
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 1
REVISION: A


Territory Parade
Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Location of Potential Sources of Contamination from Site History
Approximate Location of Potential Sources of Contamination from Site Inspection
Approximate Location of Drainage Line
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 19.07.2018
TITLE: Site Features and Observations
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 2
REVISION: A


Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Location of Potential Sources of Contamination from Site History
Approximate Location of Potential Sources of Contamination from Site Inspection
Approximate Location of Drainage Line
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 19.07.2018
TITLE: Site Features and Observations
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 3
REVISION: A


Drawing 8
Territory Parade
Drawing 7
Drawing 6
Drawing 5
Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Test Pit Locations
0 25 50 75 100
Approximate Scale (m)
NOTE: Base drawing from nearmap.com
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 18.07.2018
TITLE: Overall Test Location Plan
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 4
REVISION: 0


Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Test Pit Locations
0
12.5
25
Approximate Scale (m)
NOTE: Base drawing from nearmap.com
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 18.07.2018
TITLE: Test Location Plan
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 5
REVISION: 0


Site
Locality Plan
59
60
58
57
56
55
54
52
51
53
52-1
51-1
51-2
77
43
44
70
9
76
72
75
74
LEGEND
Approximate Site Boundary
Approximate Test Pit Locations
0
25
50
Approximate Scale (m)
NOTE: Base drawing from nearmap.com
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 18.07.2018
TITLE: Test Location Plan
Proposed Subdivision
Lot 6 DP239080, North Tralee
N
PROJECT No: 46162.12
DRAWING No: 6
REVISION: 0


Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Test Pit Locations
0 50 100 150 200
Approximate Scale (m)
NOTE: Base drawing from nearmap.com
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 18.07.2018
TITLE: Test Location Plan
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 7
REVISION: 0


Territory Parade
78
79
80
Site
Locality Plan
LEGEND
Approximate Site Boundary
Approximate Test Pit Locations
0 25 50 75 100
Approximate Scale (m)
NOTE: Base drawing from nearmap.com
Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: APH
SCALE: As shown
DATE: 18.07.2018
TITLE: Test Location Plan
Proposed Subdivision
Lot 6 DP239080, North Tralee
PROJECT No: 46162.12
DRAWING No: 8
REVISION: 0

Appendix C

Site History Searches

List of NSW Contaminated Sites Notified to EPA as of 16 April 2018

Background

A strategy to systematically assess, prioritise and respond to notifications under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under *Government Information (Public Access) Act 2009*.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that the nominated site is causing actual harm to the environment or an unacceptable offsite impact (i.e. it is a "significantly contaminated site"), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The tables provide an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the responsible landowner.

The following questions and answers may assist those interested in this issue:

Frequently asked questions

What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the Contaminated Land: Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act 1997*.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

Why my site appears on the list?

Your site appears on the list because of one or more of the following reasons:

- The site owner and/or the person partly or fully responsible for causing the contamination notified to the EPA about the contamination under Section 60 of the *Contaminated Land Management Act 1997*. In other words, the site owner or the "polluter" believes the site is contaminated.
- The EPA has been notified via other means and is satisfied that the site is or was contaminated.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that the EPA is aware of, with regard to its regulatory role under the CLM Act. An absence of a site from the list does not necessarily imply the site is not contaminated.

The EPA relies upon responsible parties to notify contaminated sites.

How are these notified contaminated sites managed by the EPA?

There are different ways that the EPA manages these notified contaminated sites. First, an initial assessment is carried out by the EPA. At the completion of the initial assessment, the EPA may take one or more than one of the following management approaches:

- The contamination warrants the EPA's direct regulatory intervention either under the *Contaminated Land Management Act 1997* or the *Protection of the Environment Operations Act 1997* (POEO Act), or both. Information about current or past regulatory action on this site can be found on EPA website.
- The contamination with respect to the current use or approved use of the site, as defined under the *Contaminated Land Management Act 1997*, is not significant enough that it warrants EPA regulation.
- The contamination does not require EPA regulation and can be managed by a planning approval process.
- The contamination is related to an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination may be managed under the POEO Act and the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2014.
- The contamination is being managed under a specifically tailored program operated by another agency (for example t
- he Department of Industry and Investment's *Derelict Mines Program*).

I am the owner of a site that appears on the list. What should I do?

First of all, you should ensure the current use of the site is compatible with the site contamination. Secondly, if the site is the subject of EPA regulation, make sure you comply with the regulatory requirements, and you have considered your obligations to notify other parties who may be affected.

If you have any concerns, contact us and we may be able to offer you general advice, or direct you to accredited professionals who can assist with specific issues.

I am a prospective buyer of a site that appears on the list. What should I do?

You should seek advice from the vendor to put the contamination issue into perspective. You may need to seek independent expert advice.

The information provided in the list is meant to be indicative only, and a starting point for your own assessment. Site contamination as a legacy of past site uses is not uncommon,

particularly in an urbanised environment. If the contamination on a site is properly remediated or managed, it may not materially impact upon the intended future use of the site. However, each site needs to be considered in context.

List of NSW Contaminated Sites Notified to the EPA

Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

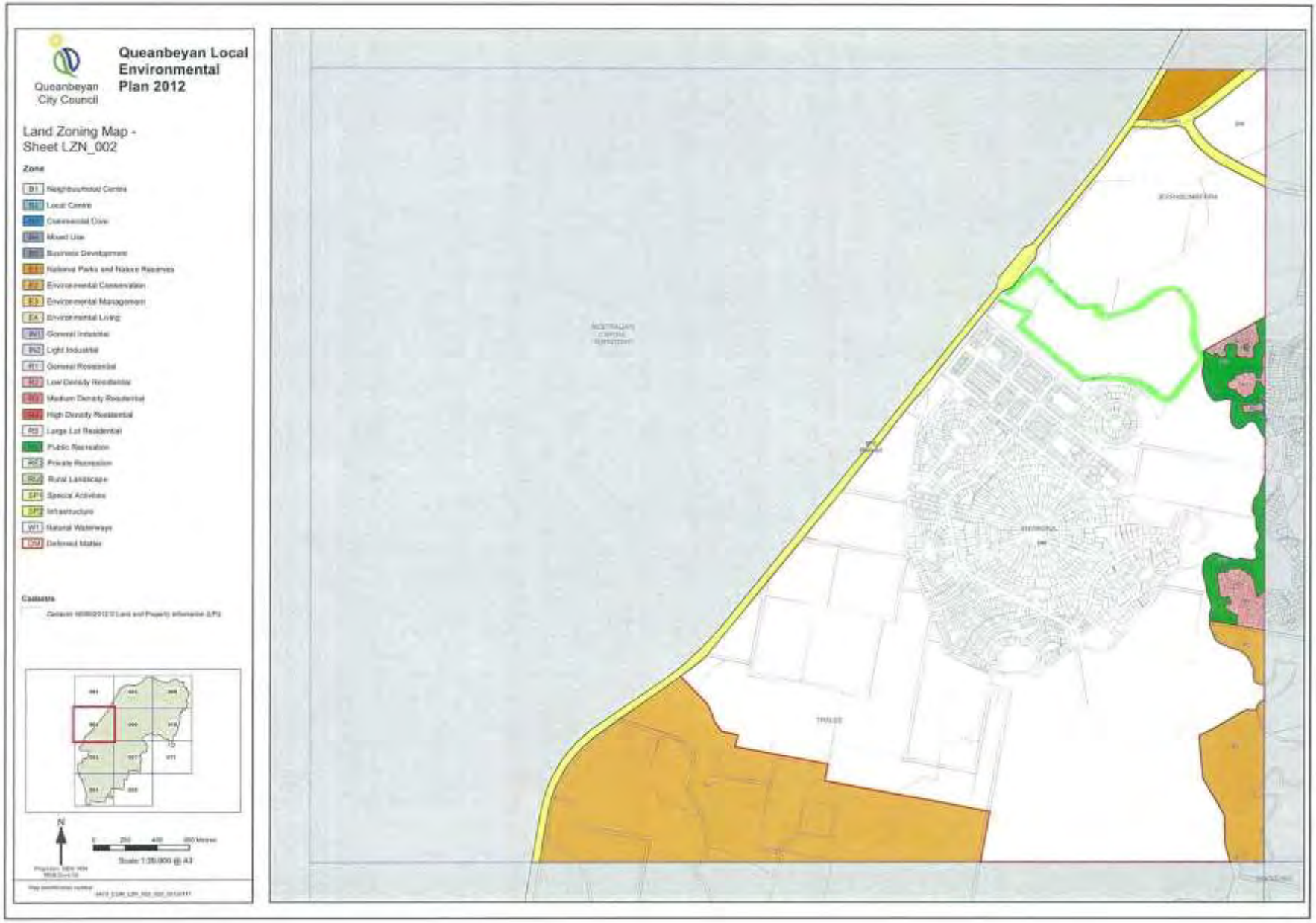
1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

Site Status	Explanation
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or *Protection of the Environment Operations Act 1997*. Alternatively, the EPA may require information via a notice issued under s77 of the *Contaminated Land Management Act 1997* or issue a Preliminary Investigation Order.
Regulation under CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the *Contaminated Land Management Act 1997* is not required.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997*. A regulatory approach is being finalised.

Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the *Environmental Planning and Assessment Act 1979* (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the *Protection of the Environment Operations Act 1997* (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the *Environmental Planning and Assessment Act 1979* (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the *Contaminated Land Management Act 1997* (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record.

Suburb	Site Name	Address	Contamination Activity Type	EPA Management Class	Latitude	Longitude
COOTAMUNDRA	Former Ampol Service Station	72 Parker STREET	Service Station	Regulation under CLM Act not required	-34.63471008	148.0296112
COOTAMUNDRA	Former Ampol Cootamundra Rail Siding	Back Brawlin ROAD	Other Petroleum	Under assessment	-34.65326425	148.0143068
CORAMBA	Martin Street	End of Martin Street and adjacent car park OTHER	Service Station	Ongoing maintenance required to manage residual contamination	-30.22125208	153.0156997
COROWA	Corowa Shire Council Works Depot	24 Poseidon ROAD	Other Petroleum	Regulation under CLM Act not required	-35.98807923	146.3652266
COROWA	Former Ampol Corowa	10 Blow STREET	Service Station	Regulation under CLM Act not required	-35.99364786	146.3901259
COROWA	Cignall Corowa	280 Hume STREET	Service Station	Under assessment	-36.00096015	146.3768437
CORRIMAL	7 Eleven Corrimal	138-146 Princes HIGHWAY	Service Station	Regulation under CLM Act not required	-34.36986923	150.8978271
CORRIMAL	Woolworths Petrol - Corrimal	275-277 Princes HIGHWAY	Service Station	Under assessment	-34.37527426	150.8962637
COWRA	Former Gasworks	30 Brougham STREET	Gasworks	Contamination currently regulated under CLM Act	-33.8389659	148.6963482
COWRA	Shell Depot	34 Brougham STREET	Other Petroleum	Contamination formerly regulated under the CLM Act	-33.83932421	148.6976295
COWRA	Landmark Fertiliser Storage Facility	Corner Young Road & Waratah STREET	Chemical Industry	Regulation under CLM Act not required	-33.84321832	148.6722578
COWRA	Lowes Petroleum (former BP Cowra Depot)	12 Campbell STREET	Other Petroleum	Regulation under CLM Act not required	-33.83803706	148.6977873
CRANGAN BAY	Big T Road House	555 and 565 Pacific HIGHWAY	Service Station	Contamination currently regulated under CLM Act	-33.17326538	151.6083864
CREMORNE	Shell Coles Express Service Station	225 Military ROAD	Service Station	Regulation under CLM Act not required	-33.83063306	151.226223
CRESTWOOD	Former Caltex Depot Queanbeyan	36 Kendall (Cnr Stephens Rd) AVENUE	Other Petroleum	Regulation under CLM Act not required	-35.34615546	149.207807
CRESTWOOD	Former BP Queanbeyan	64 Uriarra ROAD	Service Station	Regulation under CLM Act not required	-35.34646177	149.2246263
CROA	Breen Holdings	Bate Bay ROAD	Other Industry	Regulation under CLM Act not required	-34.03861737	151.1614114
CROWS NEST	Caltex Service Station	111-121 Falcon STREET	Service Station	Regulation under CLM Act not required	-33.82868236	151.2060317
CROYDON	Caltex Service Station	404-410 Liverpool ROAD	Service Station	Regulation under CLM Act not required	-33.88853994	151.115879
CROYDON	BP Ashfield	582-586 Parramatta ROAD	Service Station	Under assessment	-33.87399409	151.1267296
CROYDON PARK	Mobil Service Station	334 Georges River ROAD	Service Station	Regulation under CLM Act not required	-33.89771626	151.0999194
CULCAIRN	Caltex Service Station	2883 Olympic HIGHWAY	Service Station	Regulation under CLM Act not required	-35.67441635	147.0356845
CULLEN BULLEN	Baal Bone Colliery	Castlereagh HIGHWAY	Other Industry	Regulation under CLM Act not required	-33.27193875	150.0587194
CUNDLETOWN	Caltex Service Station (1 Manning River Drive)	Old Pacific HIGHWAY	Service Station	Regulation under CLM Act not required	-31.89329598	152.5068225

Suburb	Site Name	Address	Contamination Activity Type	EPA Management Class	Latitude	Longitude
PYRMONT	Former Council Works Depot (Fig and Wattle Depot)	14-26 Wattle STREET	Other Industry	Under assessment	-33.8752655	151.1942645
QUAKERS HILL	7-Eleven (formerly Mobil) Service Station	93 Lalor ROAD	Service Station	Regulation under CLM Act not required	-33.7275907	150.8966764
QUAKERS HILL	BP Branded Parkway (Former Caltex) Service Station Quakers	450 Quakers Hill PARKWAY	Service Station	Regulation under CLM Act not required	-33.72998613	150.9023617
QUEANBEYAN	Former Mobil Service Station	158 Uriarra ROAD	Service Station	Regulation under CLM Act not required	-35.34425514	149.2348687
QUEANBEYAN	Bill Lilley Automotive	169 Crawford STREET	Service Station	Regulation under CLM Act not required	-35.35138121	149.232486
QUEANBEYAN	Woolworths Queanbeyan Service Station	196 Crawford (Cnr Morisset St) STREET	Service Station	Regulation under CLM Act not required	-35.35163055	149.2335759
QUEANBEYAN	Caltex Queanbeyan Service Station	88 Macquoid (also known as Bungendore Rd) STREET	Service Station	Regulation under CLM Act not required	-35.34940535	149.2338807
QUEANBEYAN	Former Mobil Emoleum Depot	109-111 High STREET	Other Petroleum	Regulation under CLM Act not required	-35.3386115	149.237556
QUEANBEYAN	Former Caltex Depot	20-30 Railway STREET	Other Petroleum	Regulation under CLM Act not required	-35.34523	149.22333
QUEANBEYAN EAST	BP-Branded Service Station Queanbeyan	50 Yass ROAD	Service Station	Regulation under CLM Act not required	-35.34126641	149.2445103
QUEANBEYAN WEST	Caltex Service Station	Lanyon Dr Cnr Mccrae St (1 Sunset Place) STREET	Service Station	Regulation under CLM Act not required	-35.36372923	149.2067531
QUIRINDI	Former Mobil Depot Quirindi	4-6 Cross STREET	Other Petroleum	Regulation under CLM Act not required	-31.49903455	150.681972
QUIRINDI	Caltex Service Station, Quirindi	199-201 George STREET	Service Station	Regulation under CLM Act not required	-31.50654793	150.6803589
QUIRINDI	Tamalong Servicentre Quirindi	113-117 Station STREET	Service Station	Under assessment	-31.50179204	150.6814611
RAMSGATE	Shell Coles Express Service Station	Grand Parade cnr Ramsgate ROAD	Service Station	Regulation under CLM Act not required	-33.98537988	151.1471234
RANDWICK	7-Eleven Service Station	126-130 Barker STREET		Contamination currently regulated under CLM Act	-33.92096152	151.2355927
RANDWICK	Service Station, Randwick	33-37 Carrington ROAD	Service Station	Contamination currently regulated under CLM Act	-33.90655015	151.2525065
RANDWICK	Caltex Service Station	2 Alison ROAD	Service Station	Regulation under CLM Act not required	-33.9065752	151.2320687
RANDWICK	Metro Petroleum	345 Avoca STREET	Service Station	Regulation under CLM Act not required	-33.92544832	151.2396799
RAVENSWORTH	Ravensworth Operations Narama Mine	Lemington ROAD	Other Industry	Regulation under CLM Act not required	-32.47115903	151.0359579
RAVENSWORTH	Cumnock Colliery	Pikes Gully ROAD	Other Industry	Regulation under CLM Act not required	-32.40218281	150.9960082
RAYMOND TERRACE	Shell Coles Express Raymond Terrace	107 Adelaide (formerly Pacific Highway) STREET	Service Station	Regulation under CLM Act not required	-32.76110922	151.7492847
RAYMOND TERRACE	Caltex Service Station Raymond Terrace	136 Adelaide (Cnr Adelaide and Glenelg St) STREET	Service Station	Regulation under CLM Act not required	-32.76503842	151.7429264
RAYMOND TERRACE	Former Motor Registry	53 William STREET	Other Petroleum	Regulation under CLM Act not required	-32.76286473	151.7445839


Queanbeyan City Council
Queanbeyan Local Environmental Plan 2012
Land Zoning Map - Sheet LZN_002
Zone
Cadastre
N
Scale 1:20,000 @ A3

WaterNSW

help · contact · customise

State Overview
State Overview

Rivers and Streams
favourites · search · download sites · find a site
Real Time Data - Rivers And Streams

Daily River Reports
Daily River Reports

Dams
favourites · search · download sites · find a site
Real Time Data - Major Dams

Groundwater (Telemetered data)
favourites · search · download sites · find a site
Real Time Data - Bores

All Groundwater Site details
search · download sites · find a site
All Groundwater Map
North Coast Region
Hunter Region
Greater Sydney Region
South Coast Region
Shoalhaven River Basin
Clyde River Basin
Moruya River Basin
Tuross River Basin
Bega River Basin
Towamba River Basin
East Gippsland Basin
Snowy River Basin
Northwest Region
Central West Region
Southwest Region
Upper Murray River Basin
Murray River Basin
Murrumbidgee River Basin
Lake George Basin
Benanee River Basin
Far West Region
Great Artesian Basin
Coal Basins

Meteorology
favourites · search · download sites · find a site
Real Time Data - Weather Stations

All Groundwater Site Details » WEB_GW_MENU » WEB_GW_STHWEST

Lake George Basin

bookmark this page

All data times are Eastern Standard Time

Map

current site: GW043847

contact WaterNSW

NSW Office of Water
Work Summary

GW043846

Licence: 40BL102984 **Licence Status:** CONVERTED

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): IRRIGATION

Work Type: Bore open thru rock
Work Status:
Construct.Method: Cable Tool
Owner Type: Private

Commenced Date:
Completion Date: 01/10/1969

Final Depth: 40.50 m
Drilled Depth: 40.50 m

Contractor Name:
Driller:
Assistant Driller:

Property: ENVIRONA
GWMA: -
GW Zone: -

Standing Water Level (m):
Salinity Description: Hard
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	MURRA	MURRA,047	75
Licensed:	MURRAY	TUGGERANONG	Whole Lot //

Region: 40 - Murrumbidgee
River Basin: 410 - MURRUMBIDGEE RIVER
Area/District:

CMA Map: 8727-3S
Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)

Northing: 6080498.0
Easting: 697856.0

Latitude: 35°23'57.4"S
Longitude: 149°10'43.3"E

GS Map: -

MGA Zone: 0

Coordinate Source: GD_ACC.MAP

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	Threaded Steel	0.00	37.10	127			

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
40.50	40.50	0.00	[Unknown]	17.60		0.51			

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.83	1.83	Soil Subsoil	Soil	
1.83	17.98	16.15	Porphyry Decomposed	Porphyry	
17.98	30.78	12.80	Porphyry Very Hard	Porphyry	
30.78	40.54	9.76	Porphyry Hard	Porphyry	
0.00	1.83	1.83	Clay	Clay	

Remarks

*** End of GW043846 ***

NSW Office of Water
Work Summary

GW043847

Licence: 40BL103102 **Licence Status:** CONVERTED

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): STOCK, DOMESTIC

Work Type: Bore open thru rock
Work Status:
Construct.Method: Cable Tool
Owner Type: Private

Commenced Date:
Completion Date: 01/08/1969

Final Depth: 37.70 m
Drilled Depth: 37.80 m

Contractor Name:
Driller:
Assistant Driller:

Property: ENVIRONA
GWMA: -
GW Zone: -

Standing Water Level (m):
Salinity Description: Hard
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	MURRA	MURRA,047	75
Licensed:	MURRAY	TUGGERANONG	Whole Lot //

Region: 40 - Murrumbidgee
River Basin: 410 - MURRUMBIDGEE RIVER
Area/District:

CMA Map: 8727-3S
Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)

Northing: 6080280.0
Easting: 697952.0

Latitude: 35°24'04.4"S
Longitude: 149°10'47.3"E

GS Map: -

MGA Zone: 0

Coordinate Source: GD,ACC,MAP

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	Threaded Steel	0.00	23.10	152			

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
37.70	37.70	0.00	Fractured	12.10		0.07			

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.22	1.22	Soil Subsoil	Soil	
1.22	25.30	24.08	Porphyry Decomposed	Porphyry	
25.30	37.80	12.50	Porphyry Hard	Porphyry	
37.80	37.81	0.01	Bedrock Hard Water Supply	Bedrock	

Remarks

*** End of GW043847 ***

ABN: 36 092 724 251
Ph: 02 9099 7400

Level 14, 135 King Street, Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Report

NSW LRS
(Formerly LPI)

Sydney

Address: 360A Alderson Place, Queanbeyan

Description: - Lot 6 D.P. 239080

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
19.12.1924 (1924 to 1925)	James Patrick Heaton (Grazier)	Vol 3677 Fol 132
01.04.1925 (1925 to 1936)	Amy Gwendoline Hallcann (Married Woman)	Vol 3677 Fol 132 Now Vol 3817 Fol 104
01.07.1936 (1936 to 1954)	John Morrison (Grazier)	Vol 3817 Fol 104 Now Vol 4788 Fol 123
31.03.1954 (1954 to 1993)	John Walsh Morrison (Catholic Priest) Bernard Lawrence Morrison (Grazier) (Application by Transmission not investigated)	Vol 4788 Fol 123 Now 6/239080
04.03.1993 (1993 to 1999)	Bernard Lawrence Morrison (Grazier)	6/239080
18.06.1999 (1999 to 1999)	Sandra Anne Walsh Graeme Farquhar Finlayson (Executors of the Will of Bernard Lawrence Morrison)	6/239080
18.10.1999 (1999 to 2002)	Therese Mary Hansen John Bernard Morrison Lucille Margaret Wilmot Sandra Anne Walsh	6/239080
	Numerious Transfer were found between 13.06.2002 to 02.04.2014, between the above 4 named people, transferring various shares, these have not been investigated	
13.06.2002 (Part) (2002 to 2005)	The Village Building Co. Limited Now The Village Building Co Limited	6/239080
02.04.2014 (2014 to Date)	# The Village Building Co Limited Now # The Village Building Co. Limited	6/239080

# Denotes Current Registered Proprietor

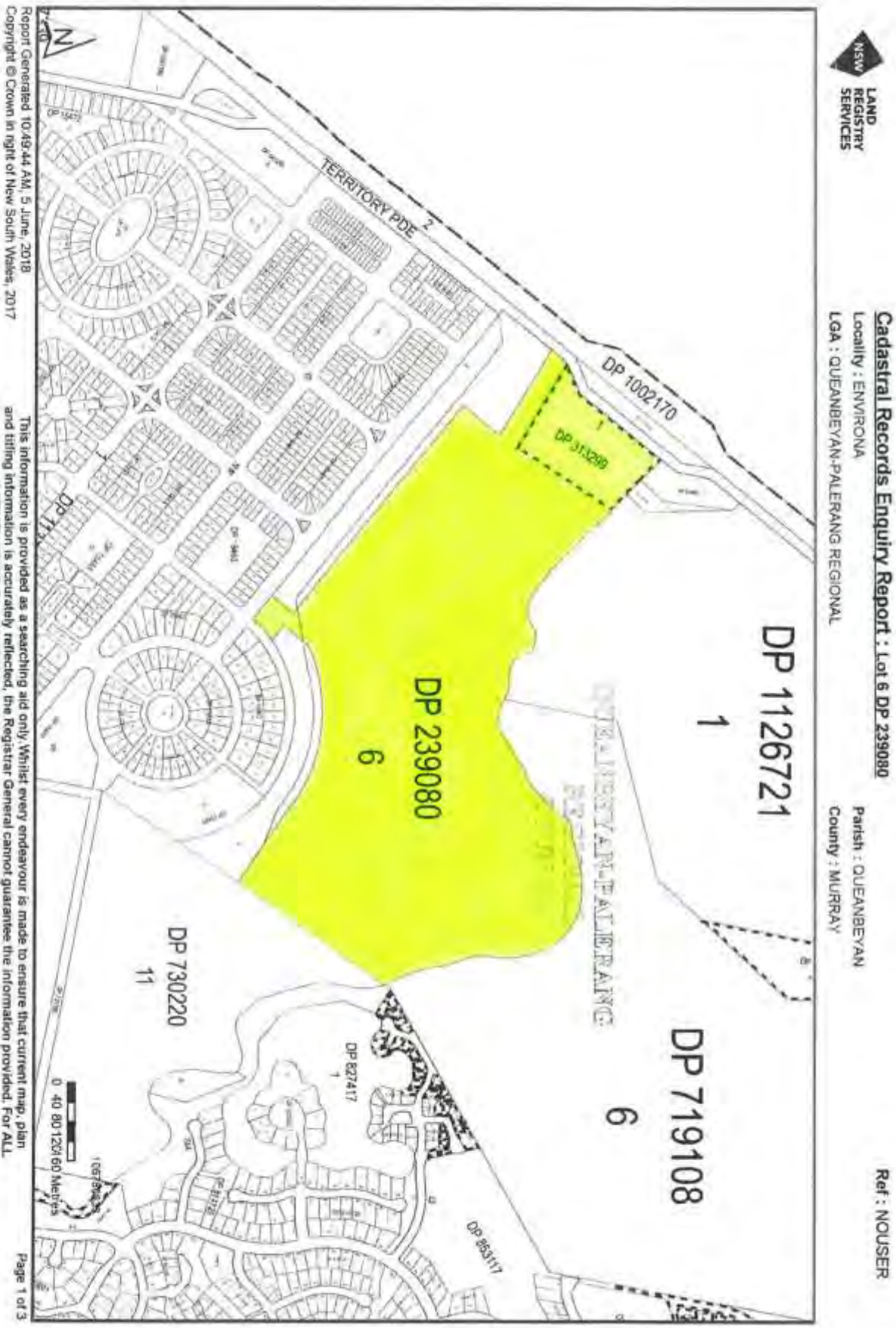
Easements: - NIL

Leases: -

- 13.07.1962 (J717774) - Bernard Lawrence Morrison (Grazier) – expired not investigated

Yours Sincerely
James McDonnell
5 June 2018

Email: james.mcdonnell@infotrack.com.au 1


LAND REGISTRY SERVICES
Cadastral Records Enquiry Report : Lot 6 DP 239080
Locality : ENVIRONA
LGA : QUEANBEYAN-PALERANG REGIONAL
Parish : QUEANBEYAN
County : MURRAY
Ref : NOUSER
TERRITORY PDE
DP 1002170
DP 31299
DP 239080
6
DP 1126721
1
DP 719108
6
DP 730220
11
DP 627417
1
DP 563117
QUEANBEYAN-PALERANG REGIONAL
0 40 80 120 160 Metres
Report Generated 10:49:44 AM, 5 June, 2018
Copyright © Crown in right of New South Wales, 2017
This information is provided as a searching aid only. Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps
Page 1 of 3


InfoTrack
DP239080

LAND REGISTRY SERVICES

InfoTrack

NSW LRS - Owner Enquiry

Search Summary

Owner Name: The Village Building Matter: tralee
Include Properties Previously Owned? Yes

Current Owner Names (Auto Titles)

Owner Name	Locality	Title Reference	Dealing
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	176/754912	T AN83611
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	148/754912	T AN83611
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1207489	TX AJ597880
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1140653	T AJ959737
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/1140653	T AJ959737
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/1140653	T AJ959737
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1207487	T AN83611
THE VILLAGE BUILDING CO. LIMITED	COFFS HARBOUR	9/270533	* AE593861
THE VILLAGE BUILDING CO. LIMITED	ENVIRONA	8655-144	CN AI696791
THE VILLAGE BUILDING CO. LIMITED	QUEANBEYAN	3817-132	CN AI696791
THE VILLAGE BUILDING CO. LIMITED	QUEANBEYAN	4316-172	CN AI696792
THE VILLAGE BUILDING CO. LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/865411	CN AI696791
THE VILLAGE BUILDING CO. LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	CN AI696792
THE VILLAGE BUILDING CO. LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/851918	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TRALEE	3/239080	CN AI696791
THE VILLAGE BUILDING CO. LIMITED	TRALEE	6/239080	CN AI696791
THE VILLAGE BUILDING CO. LIMITED	TRALEE	1/1039904	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TRALEE	1/224095	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TRALEE	2/224095	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TRALEE	3/224095	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TRALEE	4/224095	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TRALEE	5/224095	CN AI696793
THE VILLAGE BUILDING CO. LIMITED	TUGGERANONG	1/213249	CN AJ696793
THE VILLAGE BUILDING COMPANY LIMITED	TRALEE	1/1023430	T 9185535
VILLAGE BUILDING CO LIMITED	WOLLONGONG	2/SP68133	* AM953291

Purchaser/Lessee Names (From 1/6/1971)

Owner Name	Locality	Title Reference	Dealing
THE VILLAGE BUILDING CO LIMITED	COFFS HARBOUR	1/24/758258	L AA401526
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T 8680559
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T 8750841
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T 9620599
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG617768
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG617769
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871700
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871701
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871702
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871703
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871704
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871705
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AG871706
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH63392
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH63393

THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6160
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6161
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6162
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6163
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6164
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6165
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	T AH6166
THE VILLAGE BUILDING CO LIMITED	ENVIRONA	8655-144	TZ AI486036
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T 8680559
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T 8680559
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T 8750841
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T 8750841
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T 9620599
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T 9620599
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG617768
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG617768
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG617769
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG617769
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871700
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871700
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871701
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871701
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871702
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871702
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871703
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871703
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871704
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871704
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871705
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871705
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH53392
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH53392
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH53393
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH53393
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6160
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6160
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6161
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6161
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6162
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6162
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6163
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6163
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6164
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6164
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6165
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6165
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	T AH6166
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	T AH6166
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	3817-132	TZ AI486036
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN	4316-172	TZ AI486036
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T 8680559
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T 8680559
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T 8680559
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T 8750841
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T 8750841
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T 8750841
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T 9620599
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T 9620599
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T 9620599

THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG617768
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG617768
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG617768
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG617769
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG617769
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG617769
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871700
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871700
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871700
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871701
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871701
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871701
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871702
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871702
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871702
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871703
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871703
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871703
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871704
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871704
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871704
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871705
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AG871706
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH53392
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH53392
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH53392
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH53393
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH53393
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH53393
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6160
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6160
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6160
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6161
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6161
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6161
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6162
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6162
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6162
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6163
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6163
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6163
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6164
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6164
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6164
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6165
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6165
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6165
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	T AH6166
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	T AH6166
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	T AH6166
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	1/651918	TZ AH86036
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	226/665411	TZ AH86036
THE VILLAGE BUILDING CO LIMITED	QUEANBEYAN-PALERANG REGIONAL	4788-124	TZ AH86036
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039804	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T 8680559

THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T 8680559
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T 8750841
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T 9620599
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1140653	TX AF452190
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/1140653	TX AF452190
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/1140653	TX AF452190
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG617768
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG617769
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871700
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871701

THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871701
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871702
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871703
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871704
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871705
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AG871706
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH53392
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH53393
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6160

THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6160
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6161
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6162
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6163
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6164
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6165
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AH6166
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1039904	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/224095	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/224095	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/224095	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/239080	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	4/224095	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	5/224095	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	6/239080	T AI486036
THE VILLAGE BUILDING CO LIMITED	TRALEE	1/1140653	T AJ959736
THE VILLAGE BUILDING CO LIMITED	TRALEE	2/1140653	T AJ959736
THE VILLAGE BUILDING CO LIMITED	TRALEE	3/1140653	T AJ959736
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T 8680559
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T 8750841

THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T 9620509
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	TZ AG28223
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG617768
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG617769
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871700
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871701
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871702
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871703
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871704
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871705
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AG871706
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH53392
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH53393
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6160
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6161
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6162
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6163
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6164
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6165
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	T AH6166
THE VILLAGE BUILDING CO LIMITED	TUGGERANONG	1/213249	TZ AI486036

Req:R654524 /Doc:CT 11366-148 CT /Rev:18-Feb-2011 /Sts:OK.SC /Pgs:ALL /Prt:24-May-2018 16:16 /Seq:1 of 2
Ref:tralee /Src:M

11366148

NEW SOUTH WALES

[redacted]CATE OF TITLE

[redacted]RTY ACT, 1900, as amended.

Vol. 11366 Fol. 148

Appln.Nos. 2340 & 15882

Prior Title Vol. 4788 Fol.123

Edition issued 15-7-1970

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED

Witness

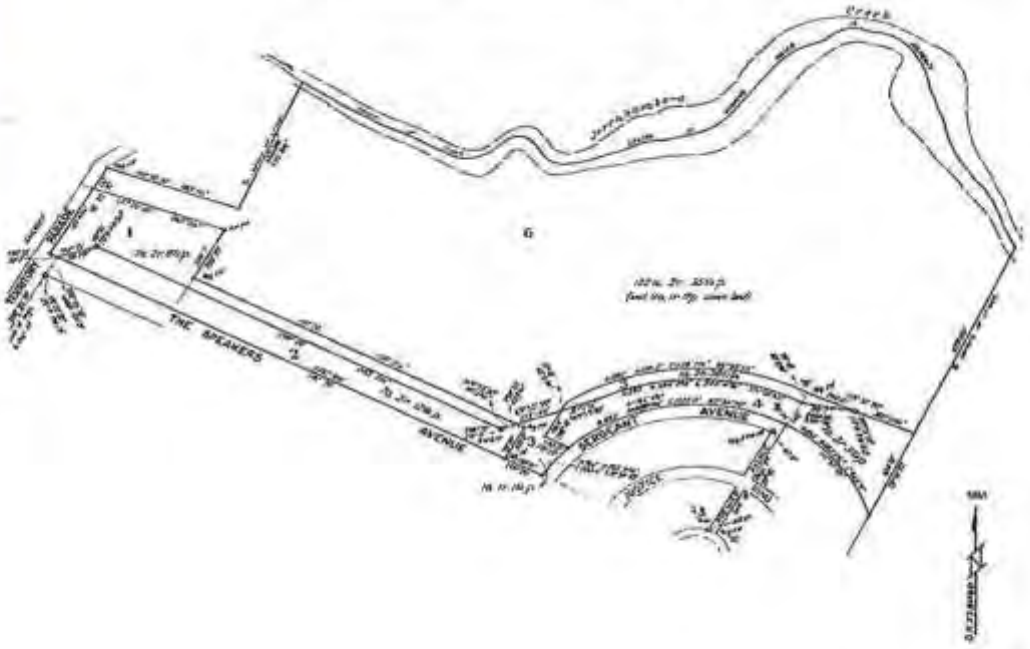
Registrar General

(Page 1) Vol. 11366 Fol. 148

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PLAN SHOWING LOCATION OF LAND



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 6 in Deposited Plan 239080 at Tralee in the Shire of Yarrowlumla Parish of Queanbeyan and County of Murray being part of Portion 38 granted to George Thomas Palmer on 15-8-1837 and part of Portion 12 granted to James Fitzgerald Murray on 14-4-1838.

FIRST SCHEDULE

JOHN WALSH MORRISON, of Goulburn, Catholic Priest and BERNARD LAWRENCE MORRISON, of Queanbeyan, Grazier, as Joint Tenants.

SECOND SCHEDULE

GRY

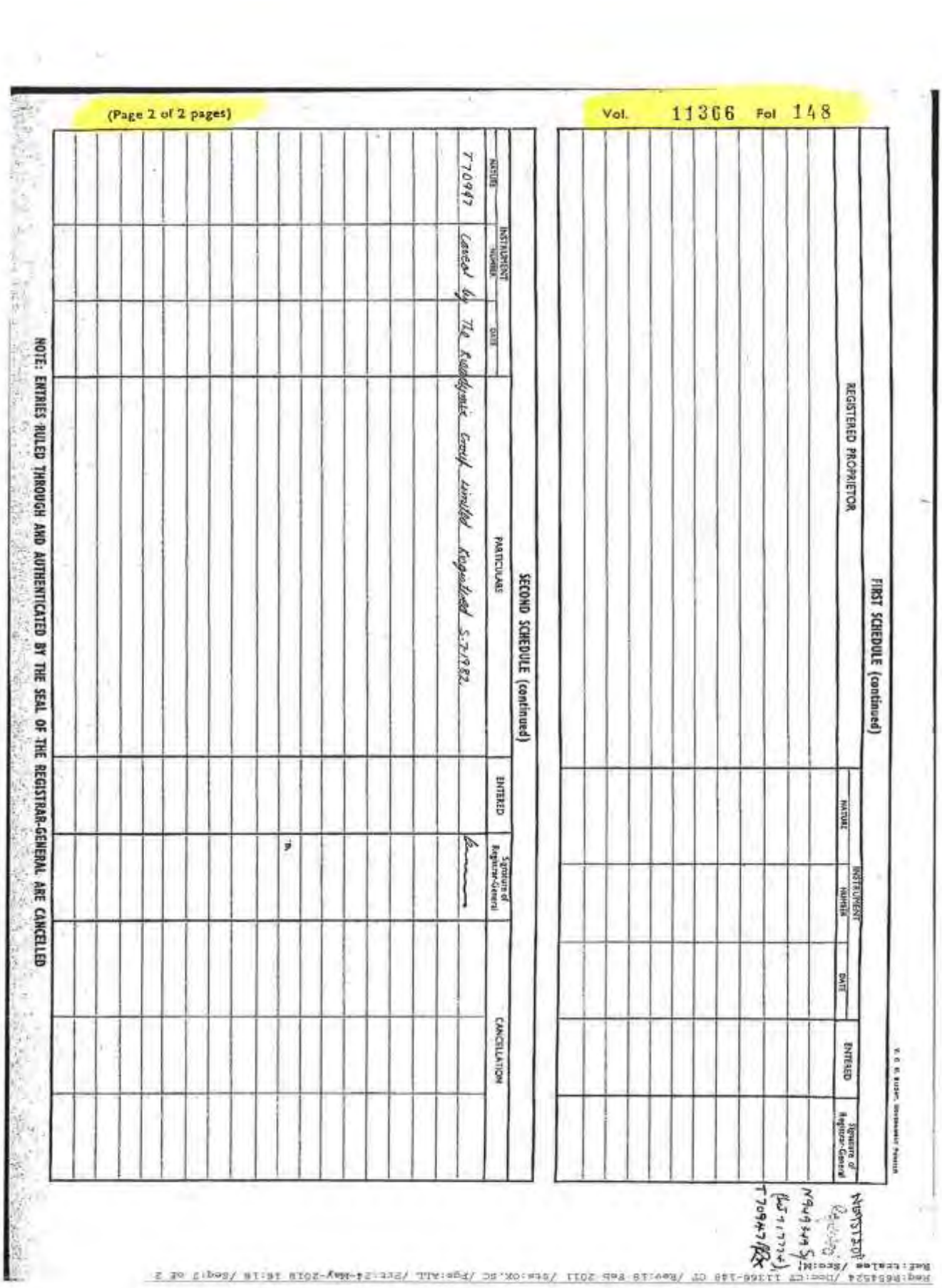
1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. Caveat No.G45442 by the Registrar General. Entered 20-5-1954.
3. Lease No.J717774 to Bernard Lawrence Morrison, of Queanbeyan, Grazier. Entered 16-12-1964.

RX L P

Registrar General.

AGI/GT/

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.



Vol. 11366 Fol 148

(Page 2 of 2 pages)

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	NATURE	INSTRUMENT NUMBER	DATE	ENTERED	Signature of Registrar-General

SECOND SCHEDULE (continued)

PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
770947 Caveat by The Queanbeyan Council entitled Registered 5.7.1982.			

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
24/5/2018 4:16PM

FOLIO: 6/239080

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 11366 FOL 148

Recorded	Number	Type of Instrument	C.T. Issue
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
18/2/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
8/6/1988	X617058	DEPARTMENTAL DEALING	
4/3/1993	I137519	NOTICE OF DEATH	EDITION 1
17/9/1996		AMENDMENT: LOCAL GOVT AREA	
18/6/1999	5838334	REQUEST	
18/6/1999	5802622	TRANSMISSION APPLICATION	EDITION 2
18/10/1999	6275246	DEPARTMENTAL DEALING	
18/10/1999	6220649	TRANSFER	EDITION 3
12/2/2001	7406495	DEPARTMENTAL DEALING	
5/4/2002	8234995	REQUEST	EDITION 4
22/4/2002	8531636	DEPARTMENTAL DEALING	EDITION 5
13/6/2002	8680559	TRANSFER	EDITION 6
19/8/2002	8750841	TRANSFER	EDITION 7
2/10/2002	9003012	DEPARTMENTAL DEALING	EDITION 8
2/10/2002	9003177	DEPARTMENTAL DEALING	EDITION 9
17/6/2003	9620599	TRANSFER	EDITION 10
31/1/2011	AG28223	TRANSFER WITHOUT MONETARY CONSIDERATION	EDITION 11
31/3/2011	AG152111	CAVEAT	
13/4/2011	AG163696	CAVEAT	
13/4/2011	AG163697	CAVEAT	

END OF PAGE 1 - CONTINUED OVER

traleel

PRINTED ON 24/5/2018

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
24/5/2018 4:16PM

FOLIO: 6/239080 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
27/4/2011	AG193974	CAVEAT	
18/5/2011	AG225888	REQUEST	
7/6/2011	AG282211	REQUEST	
6/3/2012	AG617768	TRANSFER	
6/3/2012	AG617769	TRANSFER	EDITION 12
25/5/2012	AG871700	TRANSFER	
25/5/2012	AG871701	TRANSFER	
25/5/2012	AG871702	TRANSFER	
25/5/2012	AG871703	TRANSFER	
25/5/2012	AG871704	TRANSFER	
25/5/2012	AG871705	TRANSFER	
25/5/2012	AG871706	TRANSFER	
25/5/2012	AH6160	TRANSFER	
25/5/2012	AH6161	TRANSFER	
25/5/2012	AH6162	TRANSFER	
25/5/2012	AH6163	TRANSFER	
25/5/2012	AH6164	TRANSFER	
25/5/2012	AH6165	TRANSFER	
25/5/2012	AH6166	TRANSFER	EDITION 13
9/7/2012	AH53392	TRANSFER	
9/7/2012	AH53393	TRANSFER	EDITION 14
2/4/2014	AI486033	WITHDRAWAL OF CAVEAT	
2/4/2014	AI486034	WITHDRAWAL OF CAVEAT	
2/4/2014	AI486035	REQUEST	
2/4/2014	AI486036	TRANSFER WITHOUT MONETARY CONSIDERATION	EDITION 15
1/7/2014	AI696791	CHANGE OF NAME	
1/7/2014	AI696794	MORTGAGE	EDITION 16

*** END OF SEARCH ***

traleel PRINTED ON 24/5/2018

Req:R655880 /Doc:DL 1137519 /Rev:11-May-2010 /Sts:OK.OK /Pgs:ALL /Prt:25-May-2018 08:32 /Seq:1 of 4
Ref:tralee1 /Src:M

RP 8
1979

STAMP DUTY

BROWN
ER
V.

137519 P

SEE ANNEXURE

NOTICE OF DEATH

SECTION 101, REAL PROPERTY ACT, 1900
(See Instructions for Completion on back of form)

ND | A | 1 of 1 |
$ 50 —

DESCRIPTION OF LAND
Note (a)

LAND of which deceased is a registered proprietor

Torrens Title Reference	Torrens Title Reference
Volume 11366 Folio 148 Volume 10510 Folio 206 Volume 10075 Folio 63 Volume 2750 Folio 218	Volume 11366 Folio 145 Volume 10075 Folio 62 Volume 10075 Folio 66 Volume 2194 Folio 37 — For remaining Titles see annexure hereto

REGISTERED DEALING
Note (b)

LEASE, MORTGAGE, or CHARGE of which deceased is a registered proprietor

Type of Dealing	Registered Number	Torrens Title Reference

DECEASED REGISTERED PROPRIETOR
Note (c)

JOHN WALSH MORRISON

OFFICE USE ONLY: N

Note (d)

(the abovenamed DECEASED) is registered as one of the proprietors of the land above described. ~~abovementioned registered dealing.~~ The APPLICANT

APPLICANT
Note (e)

BERNARD LAWRENCE MORRISON of Tralee Station, Tralee Street, Hume, Grazier

OFFICE USE ONLY: OWNER

Note (d)

being the SURVIVING JOINT TENANT, hereby applies to be registered as proprietor of the estate or interest comprised in the land above described. ~~abovementioned registered dealing.~~

STATUTORY DECLARATION

Notes (c) and (g)
Note (f)
Note (d)

I solemnly and sincerely declare that the said JOHN WALSH MORRISON died at Young in the State of New South Wales on 26th June, 1988, that particulars of such death are registered in the said State, and that the said deceased is identical with JOHN WALSH MORRISON one of the registered proprietors of the land above described. ~~abovementioned registered dealing.~~ Annexed hereto and marked "A" is a copy of the Death Certificate of JOHN WALSH MORRISON

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths Act, 1900, and I hereby certify this application to be correct for the purposes of the Real Property Act, 1900.

Made and subscribed at Canberra the 22nd day of December 1992 in the presence of

[signature]
Signature of Witness

GRAEME FINLAYSON
Name of Witness (BLOCK LETTERS)

Solicitor
Canberra.
Address and qualification of Witness

[signature]
Signature of Applicant

TO BE COMPLETED BY LODGING PARTY
Notes (h) and (i)

LODGED BY GALLOWAY & CO.
Phone: 233-1011 Fax: 232-6491
DX 346; L.T.O. Delivery 28A

Delivery Box Number: ELANG - MORRISON

LOCATION OF DOCUMENTS

CT	OTHER	
		Herewith.
		In R.G.O. with
✓		Produced by

0021 C/S

OFFICE USE ONLY

Extra Fee	Checked by	REGISTERED - 19			
	OLL 6423	Registrar General			Notice of death Sighted & returned DoDr 26/6/88.

Caveat T10947 does not affect.

A

ANNEXURE TO NOTICE OF DEATH DATED 22nd. DAY OF December 1992.

8

Volume 4559 Folio 80
Volume 939 Folio 238

Volume 939 Folio 237

Volume 939 Folio 232

Volume 4788 Folio 124

Volume 4550 Folio 215

Volume 4316 Folio 172

* SEE ANNEXURE FOR update.

Volume 3889 Folio 113

Volume 3889 Folio 111

Volume 3820 Folio 154

Volume 3817 Folio 132

Volume 3313 Folio 92

Volume 10505 Folio 153

~~Volume 6959 Folio 116~~

~~Volume 7241 Folio 55~~

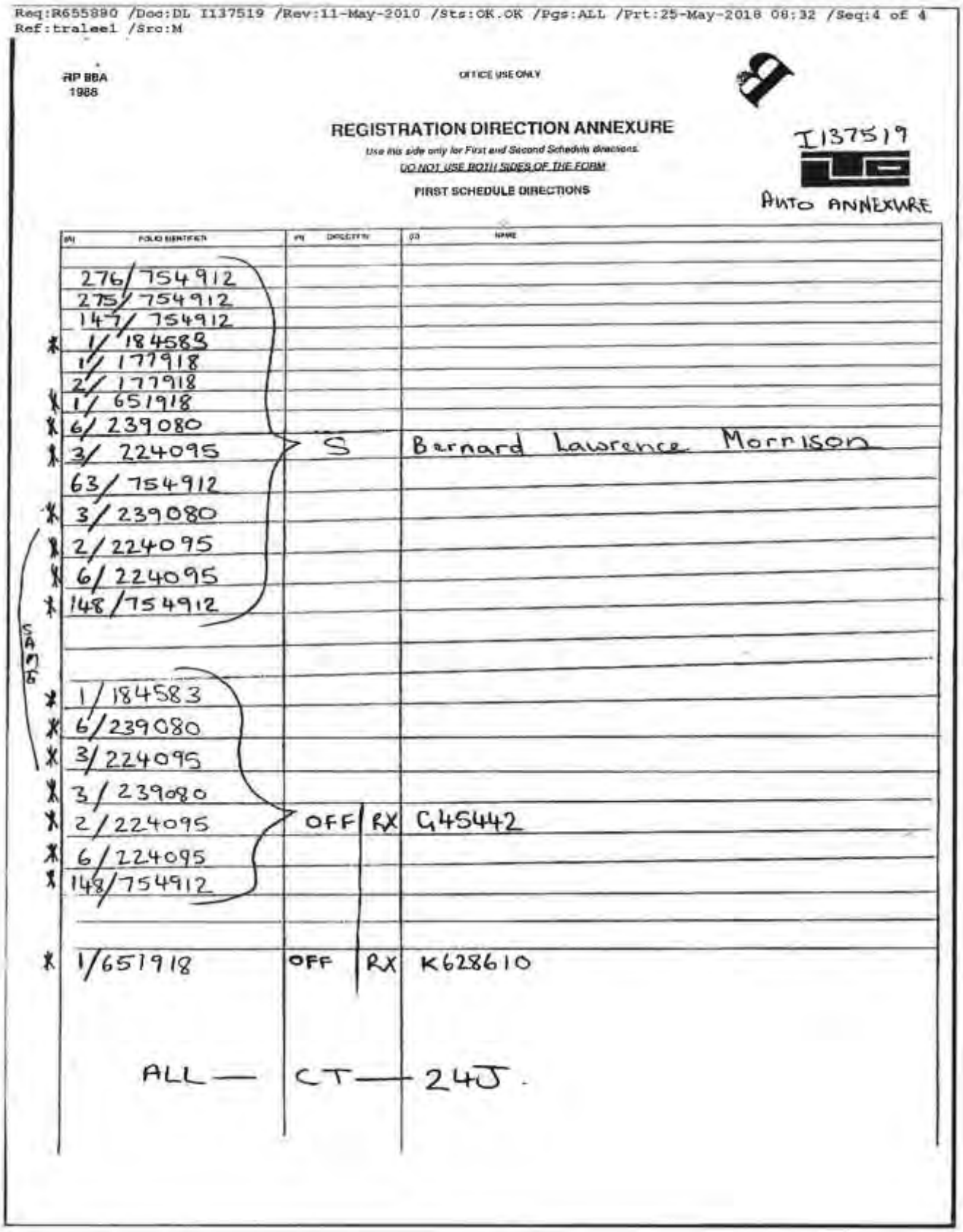
TITLE REFERENCE UPDATE ANNEXURE

8

Dealing Number I137519

TITLE REFERENCE	NOW BEING
939 – 238	276/754912
939 - 237	275/754912
939 - 232	147/754912
4550 - 215	1/184583
3889 - 113	1/177918
3889 - 111	2/177918
10505 - 153	1/651918
11366 - 148	6/239080
10075 - 63	3/224095
2750 - 218	63/754912
11366 - 145	3/239080
10075 - 62	2/224095
10075 - 66	6/224095
2194 - 37	148/754912

LTJ/



Req:R655880 /Doc:DL I137519 /Rev:11-May-2010 /Sts:OK.OK /Pgs:ALL /Prt:25-May-2018 08:32 /Seq:4 of 4
Ref:tralee1 /Src:M

AP 88A
1988

OFFICE USE ONLY

REGISTRATION DIRECTION ANNEXURE

Use this side only for First and Second Schedule directions.
DO NOT USE BOTH SIDES OF THE FORM

FIRST SCHEDULE DIRECTIONS

I137519

AUTO ANNEXURE

(A) FOLIO IDENTIFIER	(B) DIRECTN	(C) NAME
276/754912		
275/754912		
147/754912		
* 1/184583		
1/177918		
2/177918		
* 1/651918		
* 6/239080		
* 3/224095	S	Bernard Lawrence Morrison
63/754912		
* 3/239080		
* 2/224095		
* 6/224095		
* 148/754912		
* 1/184583		
* 6/239080		
* 3/224095		
* 3/239080		
* 2/224095	OFF RX	G45442
* 6/224095		
* 148/754912		
* 1/651918	OFF RX	K628610

ALL — CT — 24J.

Req:R655881 /Doc:DL 5802622 /Rev:23-Jun-1999 /Sts:NO.OK /Pgs:ALL /Prt:25-May-2018 08:32 /Seq:1 of 2
Ref:tralee1 /Src:M

Form: 97-03TA
Licence: 026CN/0528796

TRANSMISSION APPLICATION

New South Wales
Section 93 Real Property Act 1900

5802622U

Instructions for filling out this form are available from the Land Titles Office

Office of State Revenue use only

(A) **LAND**
Show no more than 20 titles.

See Schedule of Lands annexed and marked "A"

(B) **REGISTERED DEALING**
If applicable.

(C) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
28A	GALLOWAY & CO. Phone: (02) 9233 1011 Fax: (02) 9232 6491 DX 340, SYDNEY L.T.O. Delivery 28A REFERENCE (15 character maximum): ELRINGTON: MORRISON

(D) **DECEASED REGISTERED PROPRIETOR** BERNARD LAWRENCE MORRISON 1/4 5/224095 OFFL 4660091

(E) **APPLICANT**

T A	SANDRA ANNE WALSH and GRAEME FARQUHAR FINLAYSON J2

(F) I, the Applicant, being entitled as Executors of the **Will** of the Deceased Registered Proprietor (who died on 8th May 1993) pursuant to **Probate** No. 113200/93 granted on 15th September 1993 to Sandra Anne Walsh and Graeme Farquhar Finlayson, apply to be registered as proprietor of the estate or interest of the Deceased Registered Proprietor in the **Land** specified above.

(G) Certified correct for the purposes of the Real Property Act 1900. **DATE** 16th April 1999

Signed in my presence by the Applicant who is personally known to me.

Signature of Witness

KIM KELO
Name of Witness (BLOCK LETTERS)

5 mersey pl Kaleen ACT
Address of Witness

Signature of Applicant

Evidence sighted & returned (LTO use)

Page 1 of 2 Checked by (LTO use)

"A"

SCHEDULE OF LANDS

1. Volume 3817 Folio 132;
2. Volume 4316 Folio 172; NOW BEING auto consol 4316-172
3. Volume 4788 Folio 124; NOW BEING auto consol 4788-124
4. Volume 10510 Folio 206;
5. Volume 3820 Folio 154 NOW BEING 226/665411
6. Folio Identifier 1/224095 (formerly Volume 10075 Folio 61);
7. Folio Identifier 4/224095 (formerly Volume 10075 Folio 64);
8. Folio Identifier 5/224095 (formerly Volume 10075 Folio 65);
9. Folio Identifier 2/224095 (formerly Volume 10075 Folio 62);
10. Folio Identifier 3/224095 (formerly Volume 10075 Folio 63);
11. Folio Identifier 6/224095 (formerly Volume 10075 Folio 66);
12. Folio Identifier 3/239080 (formerly Volume 11366 Folio 145);
13. Folio Identifier 6/239080 (formerly Volume 11366 Folio 148).

Req:R655970 /Doc:DL 6220649 /Rev:23-Oct-1999 /Sts:NO.OK /Pgs:ALL /Prt:25-May-2018 08:42 /Seq:1 of 3
Ref:traleel /Src:M

Form: 97-01T
Licence: 026CN/0526/96

TRANSFER

New South Wales
Real Property Act 1900

6220649M

Instructions for filling out this form are available from the Land Titles Office

Office of State Revenue use only

01-07-1999 0000027119-004
SECTION 63(A)
DUTY $ [illegible]10.00

(A) **LAND TRANSFERRED** Show no more than 20 titles. If appropriate, specify the share or part transferred.

Vol. 9275 Fol. 217, (now 1/213249), 1, 4 & 5/224095, (now 336/665411) 1/651918, 3/239080, 6/239080, 2/224095, 3/224095, 6/224095, Vol. 3820 Fol. 154, Auto Consul 4316-172, Auto Consul 4788-124, Part Vol 10510 Fol 206 being Part Portion 197 and Part Por. 233, Part Vol. 3817 Folio 132 being the whole excepting thereout Portion 176

(B) **LODGED BY**

LTO Box: 28A

Name, Address or DX and Telephone:
GALLOWAY & CO.
Phone: (02) 9233 1011 Fax: (02) 9232 6491
DX 340, SYDNEY L.T.O. Delivery 28A

REFERENCE (15 character maximum): Elring - Morris

(C) **TRANSFEROR** SANDRA ANNE WALSH and GRAEME FARQUHAR FINLAYSON

(D) ~~acknowledges receipt of the consideration of $~~ pursuant to the terms of the Will of the late Bernard Lawrence Morrison as amended by Orders of the Supreme Court of New South Wales made 6 May 1998 and 3 February 1999.

and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable)

(F) **TRANSFEREE**

T
TS
(s713 LGA)
TW
(Sheriff)

THERESE MARY HANSEN, JOHN BERNARD MORRISON, LUCILLE MARGARET WILMOT AND SANDRA ANNE WALSH in equal undivided one quarter shares as tenants in common

(G)

(H) We certify this dealing correct for the purposes of the Real Property Act 1900.

DATE 6th August 1999

Signed in my presence by the transferor who is personally known to me.

Signature of Witness

Kim Kelo

Name of Witness (BLOCK LETTERS)

5 Mersey Pl Kaleen ACT 2617

Address of Witness

Sandra A. Walsh

Signature of Transferor

29-6-99

Signed in my presence by the transferee who is personally known to me.

SEE ANEXURE "A"

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

Signature of Transferee

NB: if signed on the transferee's behalf by a solicitor or licensed conveyancer, show the signatory's full name in block letters.

Page 1 of 2

CHECKED BY (LTO use)

ANEXURE "A"

Signature of Witness

KIM KELO
Name of Witness (BLOCK LETTERS)

5 Mersey Pl Kaleen ACT.
Address of Witness

Signature of Transferee

Signature of Witness

PHILIP BOYCE
Name of Witness (BLOCK LETTERS)

SOLICITOR 1/36 WINGECARRIBEE ST BOWRAL
Address of Witness

Signature of Transferee

Signature of Witness

KIM KELO
Name of Witness (BLOCK LETTERS)

5 Mersey Pl Kaleen ACT 2617
Address of Witness

Signature of Transferee

H L Thompson
Signature of Witness

HOLLY LYN THOMPSON
Name of Witness (BLOCK LETTERS)

25 Corringle Cl Amaroo ACT 2913
Address of Witness

Signature of Transferee

CHECKED BY (LTO use)

Req:R655970 /Doc:DL 6220649 /Rev:23-Oct-1999 /Sts:NO.OK /Pgs:ALL /Prt:25-May-2018 08:42 /Seq:3 of 3
Ref:tralee1 /Src:M

TITLE REFERENCE UPDATE ANNEXURE

Dealing Number .....

TITLE REFERENCE	NOW BEING
9275 - 217	1/213249
3820 - 154	226/665411
	1-6/224095
	1/651918
	3/239080
	6/239080
	4316 - 172 A/C
	4788 - 124 A/C
	8655 - 144 A/C
Manual Ref.	
3817 - 132	
(pt por 12, 66, 68, 89,	105, 108, 107
por. ~~107~~, 181)	

10-1270

Req:R710967 /Doc:DL 8680559 /Rev:19-Jun-2002 /Sts:NO.OK /Pgs:ALL /Prt:05-Jun-2018 11:05 /Seq:1 of 2
Ref:tralee1 /Src:M

Form: 01T
Release: 2
www.lpi.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

8680559T

PRIVACY NOTE: this information is legally required and will become part of the public record

STAMP DUTY — Office of State Revenue use only — STATE REVENUE [N.S.W. TREASURY]
CLIENT No. 1405240 — STAMP No. 1038
STAMP DUTY $2- — SIGNATURE
TRANSACTION No. 440 — DATE 5.6.2002
ASSESSMENT DETAILS:

(A) TORRENS TITLE: SEE ANNEXURE 'A'

(B) LODGED BY — Delivery Box 28A — Name, Address or DX and Telephone: 28A GALLOWAY & CO
Phone: (02) 9233 1011 Fax: (02) 9251 0731
DX 340, SYDNEY L.T.O. Delivery 28A
Reference: O'CONNOR, VILLAGE
CODES: T, TW (Sheriff)

(C) TRANSFEROR: KEVIN GORDON DELBRIDGE AND FRANCIS LLEWELYN ROBERTS

(D) CONSIDERATION: The transferor acknowledges receipt of the consideration of $ 7,051,000.00 and as regards

(E) ESTATE: the land specified above transfers to the transferee an estate in fee simple

(F) SHARE TRANSFERRED

(G) Encumbrances (if applicable):

(H) TRANSFEREE: THE VILLAGE BUILDING CO. LIMITED ACN/ARBN 056 509 025/97 056 509 025as tenant in common owning ~~50 per centum~~ 50 with THERESE MARY HANSEN as tenants in common owning ~~25 per centum~~ 25 with JOHN BERNARD MORRISON as tenant in common owning ~~25 per centum~~ 25

(I) TENANCY:

(J) DATE 7/6/02

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: Fabio Fior
Address of witness: 25 Hallen Close
Swinger Hill, ACT
2606.

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: Kevin Gordon Delbridge

Francis Llewelyn Roberts.

Certified for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: MARY RUTH HARRIS
Signatory's capacity: transferee's solicitor

Page 1 of 2 number additional pages sequentially

All handwriting must be in block capitals.

Land and Property Information NSW

2K
ksa

FILM WITH 8680559

ANNEXURE 'A'

Auto Consol 4788-124
Auto Consol 3817-132
Auto Consol 8655-144
Auto Consol 4316-172
Folio Identifier 3/239080
Folio Identifier 6/239080
Folio Identifier 226/665411
Folio Identifier 1/651918
Folio Identifier 1/213249
Folio Identifier 1/224095
Folio Identifier 2/224095
Folio Identifier 3/224095
Folio Identifier 4/224095
Folio Identifier 5/224095
Folio Identifier 1/1039904

Req:R655800 /Doc:DL 9620599 /Rev:19-Jun-2003 /Sts:NO.OK /Pgs:ALL /Prt:25-May-2018 08:23 /Seq:1 of 2
Ref:traleel /Src:M

Form: 01T
Release: 2
www.lpi.nsw.gov.au

RELODGED
12 JUN 2003
STAMP DUTY
TIME: 2.15

TRANSFER

New South Wales
Real Property Act 1900

9620599U

PRIVACY NOTE: this information is legally required and will become part of the public record

Office of State Revenue use only

NEW SOUTH WALES DUTY
15-05-2003 0001244656-001
SECTION 18(2)
DUTY $ **************2.00

(A) **TORRENS TITLE** SEE ANNEXURE 'A' HERETO

(B) **LODGED BY** Delivery Box 39U — Name, Address or DX and Telephone: 39U galloways legal services Phone: (02) 9233 1011 Fax: (02) 9232 6491 — Reference: Oconno - Morrison. — CODES T TW (Sheriff)

(C) **TRANSFEROR** JOHN BERNARD MORRISON → will have 17.5/100 share left

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 93,750.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED** 7.8948% OF THE VENDOR'S SHARE = 1.5/100 share.

(G) Encumbrances (if applicable): ----

(H) **TRANSFEREE** THE VILLAGE BUILDING CO. LIMITED ACN 056 509 025

(I) **TENANCY:**

(J) **DATE** 25 OCTOBER, 2002

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness: [signature]

Name of witness: RITA CORBETT
Address of witness: 161 LONDON CIRCUIT CANBERRA ACT

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: [signature]

Certified for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature: [signature]

Signatory's name: MARY RUTH HARRIS
Signatory's capacity: transferee's solicitor

NB: DP633959 NB. Acquisition plan r/213

All handwriting must be in block capitals.

Page 1 of 2
number additional pages sequentially

Land and Property Information NSW.

NOS-lodged

(15)

ANNEXURE 'A'

Folio Identifier 1/213249 Acquisition plan - No
Folio Identifier 1/224095
Folio Identifier 2/224095 & DP 1052367
Folio Identifier 3/224095 &
Folio Identifier 4/224095 &
Folio Identifier 5/224095 &
Folio Identifier 3/239080
Folio Identifier 6/239080
Folio Identifier 1/651918
Folio Identifier 226/665411 & DP
Folio Identifier 1/1039904
Auto Consol 3817-132 & DP
Auto Consol 4316-172
Auto Consol 4788-124 Acquisition plan - No DP 623265
Auto Consol 8655-144 & DP

This is the annexure marked 'A' referred to in Transfer from John Bernard Morrison as Transferor to The Village Building Co. Limited as Transferee

2

Req:R655802 /Doc:DL AG617768 /Rev:09-Mar-2012 /Sts:SC.OK /Pgs:ALL /Prt:25-May-2018 08:23 /Seq:1 of 2
Ref:tralee1 /Src:M

Form: 01T
Release: 4.0
www.lpma.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

AG617768R

RELODGED

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the [illegible] by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY
- 5 DEC 2011
TIME: 3:15

Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 4014978 459
Duty: $10 Trans No: 6297358
Asst details:

(A) TORRENS TITLE — SEE ANNEXURE "A'"

(B) LODGED BY

Document Collection Box	Name, Address or DX, Telephone, and LLPN if any	CODES
392 C	SYDNEY LEGAL AGENTS LLP : 128005 Y Reference: O'Connor/ Village	T TW TJ JT

(C) TRANSFEROR — JOHN BERNARD MORRISON ①

(D) CONSIDERATION — The transferor acknowledges receipt of the consideration of $ 182,388.89 and as regards
(E) ESTATE — the abovementioned land transfers to the transferee an estate in fee simple
(F) SHARE TRANSFERRED — 99/10000
(G) Encumbrances (if applicable):
(H) TRANSFEREE — THE VILLAGE BUILDING CO. ~~PTY~~ LIMITED A.C.N. 056 509 025 ②
(I) TENANCY: ~~[illegible]~~

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 4014978 459 ALTERATION NOTED

DATE

OFF X AG163697

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: KENNETH EDWIN HUBERT
Address of witness: SOLICITOR
First Floor, 32-38 Townshend St
Phillip ACT 2606

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

RELODGED
13 JAN 2012
TIME: 2:40

RELODGED
22 FEB 2012
TIME: 2.20

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: MARY RUTH HARRIS
Signatory's capacity: transferee's solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 196001 Full name: MARY RUTH HARRIS Signature:

1003 ALL HANDWRITING MUST BE IN BLOCK CAPITALS. Page 1 of 2. LAND AND PROPERTY MANAGEMENT AUTHORITY

Annexure A to Transfer

Parties:

JOHN BERNARD MORRISON SALE TO THE VILLAGE BUILDING CO. LIMITED A.C.N. 056 509 025

Dated

Schedule of Land

The Transferor's ~~9475~~ 99/10000 share of

Lot 1 DP 213249
Lot 1 DP 224095
Lot 2 DP 224095
Lot 3 DP 224095
Lot 4 DP 224095
Lot 5 DP 224095
Lot 3 DP 239080
Lot 6 DP 239080
Lot 1 DP 651918
Lot 226 DP 665411
Lot 1 DP 1039904

Auto Consol 3817-132
Auto Consol 4316-172
Auto Consol 4788-124
Auto Concol 8655-144

Req:R655803 /Doc:DL AG617769 /Rev:09-Mar-2012 /Sts:SC.OK /Pgs:ALL /Prt:25-May-2018 08:23 /Seq:1 of 3
Ref:tralee1 /Src:M

Form: 01T
Release: 4.0
www.lpma.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

AG617769P

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the [illegible] by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY — Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 4014978 459
Duty: $10 Trans No: 6297406
Amt details:

(A) **TORRENS TITLE** — SEE ANNEXURE "A"

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and LLPN if any	CODES
392 C	SYDNEY LEGAL AGENTS LLP : 128005 Y Reference: Oconnor Village	T TW TJ JT

(C) **TRANSFEROR** — THERESE MARY HANSEN

(D) **CONSIDERATION** — The transferor acknowledges receipt of the consideration of $ 377,777.00 and as regards

(E) **ESTATE** — the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED** — 275/10000

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** — THE VILLAGE BUILDING CO. LIMITED A.C.N. 056 509 025

(I) **TENANCY:** TENANTS IN COMMON - THE VILLAGE BUILDING CO. LIMITED AS TO 275/10000 SHARE AND THE REMAINING 2225/10000 SHARE TO THERESE MARY HANSEN

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 4014978 459 EXEMPTION NOTED

DATE 28-10-2011

OFF X AG163696

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: Richard Kingham Nesbitt
Address of witness: GILLESPIE - JONES & CO.
Suite 1, First Floor
22-24 Townsville Street
FYSHWICK A.C.T. 2609

RELODGED
22 FEB 2012
TIME: 2-20

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: MARY RUTH HARRIS
Signatory's capacity: transferee's solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 196008 Full name: MARY RUTH HARRIS Signature:

1003

ALL HANDWRITING MUST BE IN BLOCK CAPITALS. Page 1 of 2. LAND AND PROPERTY MANAGEMENT AUTHORITY

Annexure A to Transfer

Parties:

THERESE MARY HANSEN SALE TO THE VILLAGE BUILDING CO. LIMITED A.C.N. 056 509 025

Dated

Schedule of Land

The Transferor's ~~250~~ 275/10000 share of

Lot 1 DP 213249
Lot 1 DP 224095
Lot 2 DP 224095
Lot 3 DP 224095
Lot 4 DP 224095
Lot 5 DP 224095
Lot 3 DP 239080
Lot 6 DP 239080
Lot 1 DP 651918
Lot 226 DP 665411
Lot 1 DP 1039904

Auto Consol 3817-132
Auto Consol 4316-172
Auto Consol 4788-124
Auto Concol 8655-144

Version: 2.1 (0612) Page 2 of 2

Req:R712195 /Doc:DL AI486036 /Rev:04-Apr-2014 /Sts:NO.OK /Pgs:ALL /Prt:05-Jun-2018 12:18 /Seq:1 of 2
Ref:tralee1 /Src:M

Form: 01TWC
Release: 4-1

TRANSFER

without monetary consider:

New South Wales
Real Property Act 1900

AI486036L

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
19-03-2014 0007498754-001
TRANSFER
DUTIABLE AMOUNT $ ******1,526,875.00
DUTY $ *****69,469.50

(A) **TORRENS TITLE** SEE ANNEXURE "A"

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
392	SYDNEY LEGAL AGENTS C LLP : 128005 Y Reference: O'CONNOR / 105126	TZ

(C) **TRANSFEROR** HELENA JOHANNA MORRISON

(D) **CONSIDERATION** SEE ANNEXURE "A"

(E) **ESTATE** and as regards the above land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED** WHOLE

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** THE VILLAGE BUILDING CO LIMITED ACN 056 509 025

(I) **TENANCY:**

DATE 27-03-2014

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: Michelle Knighton
Address of witness: 6 Queen Pl, Chisholm ACT 2905

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below

Signature:

Signatory's name: JOHN PATRICK HARRIS
Signatory's capacity: solicitor

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 592621 Full name: JOHN PATRICK HARRIS Signature:

* s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

Page 1 of 2

L303

Annexure A to Transfer

Parties: **HELENA JOHANNA MORRISON Transfer to**
THE VILLAGE BUILDING CO LIMITED ACN 056 509 025

Dated 27/03/14

(A) **TORRENS TITLE**

The Transferor's 875/10000 share of

1/213249
1/651918
1/1039904
1/224095
2/224095
3/224095
4/224095
5/224095
3/239080
6/239080
228/665411

AUTO CONSOL 8655-144
AUTO CONSOL 3817-132
AUTO CONSOL 4316-172
AUTO CONSOL 4788-124

(D) **CONSIDERATION**

PURSUANT TO CONSENT ORDERS MADE IN THE FAMILY COURT OF AUSTRALIA AT SYDNEY NO. SYC 2405 OF 2011 DATED 24 JULY 2013

Req:R656002 /Doc:DL AI696791 /Rev:03-Jul-2014 /Sts:NO.OK /Pgs:ALL /Prt:25-May-2018 08:49 /Seq:1 of 1
Ref:tralee1 /Src:M

Form: 10CN
Release: 5·3

CHANGE OF NAME

New South Wales
Real Property Act 1900

AI696791A

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

(A) TORRENS TITLE: 3/239080, 6/239080, 226/665411, Auto Consol 8655-144, Auto Consol 3817-132

(B) REGISTERED DEALING: Number | Torrens Title

(C) LODGED BY: Document Collection Box 24J — Name, Address or DX, Telephone, and Customer Account Number if any: ~~COMMONWEALTH BANK OF AUSTRALIA ABN 48 123 123 124~~ LLPN:123836E CTB — Reference: ~~CD0022502N6~~ 464-3818 — CODE: CN

(D) REGISTERED PROPRIETOR: Whose name is to be changed; show the name as it currently appears on the Torrens Title
THE VILLAGE BUILDING CO LIMITED ACN 056 509 025 *

(E) NEW NAME: Of the above registered proprietor in full
THE VILLAGE BUILDING CO. LIMITED ACN 056 509 025

(F) The registered proprietor of the above land applies to have my new name recorded in the Register in respect of that land and hereby consents to the Registrar General contacting the relevant issuing authorities to validate any supporting evidence lodged with this application.

(G) STATUTORY DECLARATION BY THE APPLICANT*

I, Robert Winnel of 26 Lane-Poole Place YARRALUMLA ACT 2600
solemnly and sincerely declare that—

1. I am the Company Director/~~secretary~~ of the Company referred to above
2. on at in the
I married
3. Company name was incorrectly noted on the original transfer

I make this solemn declaration by virtue of the Statutory Declarations Act 1959, and subject to the penalties provided by that Act for the making of false statements in statutory declarations, conscientiously believing the statements contained in this declaration to be true in every particular, and I certify this application to be correct for the purposes of the Real Property Act 1900.

Made and subscribed at Mitchell in the Australian Capital Territory on 11/06/2014
in the presence of James McCourt of Cnr Lander Cct + Ainslie Ave Canberra ACT 2601.
☑ Justice of the Peace (J.P. Number: 000 1165) ☐ Practising Solicitor
☐ Other qualified witness *[specify]*
** who certifies the following matters concerning the making of this statutory declaration by the person who made it:
1. I saw the face of the person OR ~~I did not see the face of the person because the person was wearing a face covering, but I am satisfied that the person had a special justification for not removing the covering~~; and
2. I have known the person for at least 12 months OR ~~I have confirmed the person's identity using an identification document and the document I relied on was a~~ *[Omit ID No.]*

Signature of witness: [signature] Signature of applicant: [signature]

* As the services of a qualified witness cannot be provided at lodgment, the declaration should be signed and witnessed prior to lodgment. ** If made outside NSW, cross out the witness certification. If made in NSW, cross out the text which does not apply.

(H) *This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS.*
The applicant's agent certifies that the eNOS data relevant to this dealing has been submitted and stored under
eNOS ID No. Full name: Signature:

ALL HANDWRITING MUST BE IN BLOCK CAPITALS. Page 1 of 1 1309

* Cert. of Registration on Change of name sighted. Reg 35 1/7/14

LAND REGISTRY SERVICES **Title Search** InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 6/239080

SEARCH DATE	TIME	EDITION NO	DATE
24/5/2018	10:43 PM	16	1/7/2014

LAND

LOT 6 IN DEPOSITED PLAN 239080
AT TRALEE
LOCAL GOVERNMENT AREA QUEANBEYAN-PALERANG REGIONAL
PARISH OF QUEANBEYAN COUNTY OF MURRAY
TITLE DIAGRAM DP239080

FIRST SCHEDULE

THE VILLAGE BUILDING CO. LIMITED (CN AI696791)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AI696794 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

tralee PRINTED ON 24/5/2018

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Received: 24/05/2018 22:43:19

Appendix D

Historical Aerial Photographs


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1951
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D1
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1961
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D2
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1973
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D3
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1983
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D4
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1990
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D5
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1995
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D6
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 1998
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D7
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 2005
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D8
REVISION: 0


Douglas Partners
Geotechnics | Environment | Groundwater
CLIENT: Canberra Estates Consortium No 4 Pty Ltd
OFFICE: Canberra
DRAWN BY: SDG
SCALE: NTS
DATE: 23.07.2018
TITLE: Aerial Photograph 2018
Proposed Subdivision
360A Anderson Place, North Tralee
N
PROJECT No: 46162.12
PLATE No: D8
REVISION: 0

Appendix E

Site Photographs

Photo 1: View of the site from the north west corner looking south-east

Photo 2: View of the site from the north west corner looking east

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	1
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 3: View of the site from the north west corner looking south

Photo 4: View of the north-east corner of the site, looking east

Douglas Partners Geotechnics | Environment | Groundwater	**Site Photographs**	PROJECT:	46162.12
	360A Anderson Place	Plate	2
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 5: View of Jerrabomberra Creek to the north of the site

Photo 6: View of the filling embankment to surrounding the race track

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	3
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 7: View of the race track area

Photo 8: View of buildings adjacent to the race track area

Douglas Partners Geotechnics | Environment | Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	4
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 9: View of potential hazardous building materials

Photo 10: View of buildings adjacent to the race track area

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**		PROJECT:	46162.12
	360A Anderson Place		Plate	5
	Tralee, NSW		REV:	A
	Client	Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 11: View of potential hazardous building materials

Photo 12: View of former building footprints

Douglas Partners Geotechnics | Environment | Groundwater	**Site Photographs**	PROJECT:	46162.12
	360A Anderson Place	Plate	6
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 13: View of former building footprints

Photo 14: View of stockpiles of building and demoliton rubble

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	7
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 15: View of stockpiles of building and demoliton rubble

Photo 16: View of race track area

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	8
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 17: View of landfill area

Photo 18: View of landfill area

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	46162.12
	360A Anderson Place	Plate	9
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 19: View of landfill area

Photo 20: View of landfill area

Douglas Partners Geotechnics | Environment | Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	10
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 21: View of soakaway adjacent to race track buildings

Photo 22: View of stockpiles to the east of the race track area

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	11
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Photo 23: View of soakaway adjacent to former homestead building

Photo 24: View of toilet block adjacent to the southern boundary

Douglas Partners Geotechnics | Environment | Groundwater	Site Photographs	PROJECT:	46162.12
	360A Anderson Place	Plate	12
	Tralee, NSW	REV:	A
	Client: Canberra Estates Consortium No. 4 Pty. Ltd	DATE:	13-Jul-18

Appendix F

Test Pit Logs

Soil Descriptions

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

July 2010

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

July 2010

Rock Descriptions

Rock Strength

Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $Is_{(50)}$ MPa	Approx Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200
Extremely high	EH	>10	>200

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and longer sections
Unbroken	Core lengths mostly > 1000 mm

July 2010

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq 100 \text{ mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

July 2010

Symbols & Abbreviations

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core Drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

July 2010

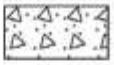
Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

Soils


Topsoil

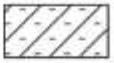

Peat

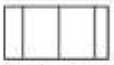

Clay


Silty clay

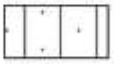

Sandy clay

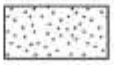

Gravelly clay


Shaly clay

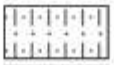

Silt

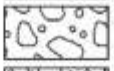

Clayey silt


Sandy silt


Sand

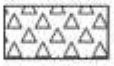

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders


Talus

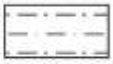
Sedimentary Rocks


Boulder conglomerate


Conglomerate


Conglomeratic sandstone

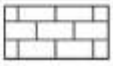

Sandstone


Siltstone


Laminite

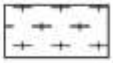

Mudstone, claystone, shale


Coal


Limestone

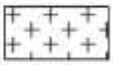
Metamorphic Rocks


Slate, phyllite, schist


Gneiss

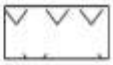

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

July 2010

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 582 M AHD
EASTING: 698046
NORTHING: 6081625

PIT No: 1
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, orange brown, fine to medium grained silty sand with trace cobbles and gravel		D	0.0 0.1		PID<1		
	0.4	FILLING-humid, grey/dark grey silty sand with trace of fine to medium grained sand, with trace gravel		D	0.5 0.6		PID<1		
581	1			D	1.0 1.1		PID<1		1
	1.9	FILLING-golden brown, fine to medium grained clayey sand (unsure whether fill or natural)		D	2.0 2.1		PID<1		2
579	3			D	3.0		PID<1		3
	3.1	Pit discontinued at 3.1m -limit of machine reach			3.1				

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 583 M AHD
EASTING: 698030
NORTHING: 6081637

PIT No: 2
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown, fine to medium grained gravelly sand, with some conglomerate cobbles, very dark grey with white gravel, slightly cemented, with trace pebbles		D	0.0 0.1		PID<1		
	0.3	FILLING-humid, orange/brown, fine to medium grained clayey sand with trace gravel, slightly cemented		D	0.5 0.6		PID<1		
				D	1.0 1.1		PID<1		
		-at 2.3m, 3 black pipes		D	2.0 2.1		PID<1		
	2.5	FILLING-damp, grey mottled orange/brown, fine to medium grained clayey sand		D	2.5 2.6		PID<1		
	2.7	Pit discontinued at 2.7m -limit of investigation							

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted halfway up embankment.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698023
NORTHING: 6081658

PIT No: 3
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING-humid, grey silty clay with trace rootlets and gravel		D	0.0		PID<1		
	0.1	FILLING-humid, orange/brown, fine to medium grained silty sand, slightly cemented			0.1				
				D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
					1.1				
	1.6	FILLING-humid, very dark grey , fine grained sandy clay (potential fill)							
	1.9	FILLING-damp, grey mottled orange/brown, fine to medium grained sandy clay		D	2.0		PID<1		2
	2				2.1				
	2.7	Pit discontinued at 2.7m -limit of investigation							
	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 698002
NORTHING: 6081672

PIT No: 4
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, light brown, fine to medium grained with trace gravel and some rootlets		D	0.0 – 0.1		PID<1		
	0.2	FILLING-humid, fine to medium grained clayey sand with trace gravel -at 0.3m, ground compact, difficult for excavator to get through		D	0.4		PID<1		
		-at 0.6m, small pocket of grey and very dark grey, fine to medium grained sandy clay present in layer		D	0.6 – 1.0 – 1.1		PID<1		1
				D	2.0 – 2.1		PID<1		2
	2.3	FILLING-damp, grey mottled orange/brown, fine to medium grained sandy clay							
	2.5	Pit discontinued at 2.5m -limit of investigation							3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 594 M AHD
EASTING: 697983
NORTHING: 6081684

PIT No: 5
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING-humid, brown, fine to medium grained sandy silt with trace large gravel and rootlets		D	0.0 0.1		PID<1		
		FILLING-humid, golden brown, fine to medium grained silty sand, slightly cemented, with trace of conglomerate cobbles (grey/slightly dark grey rock with white gravel)		D	0.4 0.5		PID<1		
	1			D	1.0 1.1		PID<1		1
	2								2
	2.0	FILLING-humid, very dark grey clay with trace of gravel		D	2.0 2.1		PID<1		
	2.2	FILLING-damp, grey and brown/orange, fine to medium grained sandy clay							
	2.4	Pit discontinued at 2.4m -limit of investigation							
	3								3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 579 M AHD
EASTING: 697971
NORTHING: 6081693

PIT No: 6
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, golden brown, fine to medium grained silty sand with trace rootlets and trace aluminium can		D	0.0 0.1		PID<1		
	0.2	FILLING-humid, grey/dark grey clay with trace of medium grained sand, slightly cemented							
	0.3	FILLING-humid, brown, fine to medium grained silty sand, cemented							
		-at 0.7m, pocket of conglomerate gravel		D	0.5 0.6		PID<1		
	1			D	1.0 1.1		PID<1		1
	1.8	FILLING-brownish grey mottled orange, fine to medium grained sandy clay							
	2			D	2.0 2.1		PID<1		2
	2.2	Pit discontinued at 2.2m -limit of investigation							
	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 580 M AHD
EASTING: 697946
NORTHING: 6081684

PIT No: 7
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, dark brown, fine to coarse grained sandy clay, slightly cemented with some gravel and trace rootlets		D	0.0 0.1		PID<1		
	0.4	FILLING-humid, dark grey, fine to medium grained sandy clay		D	0.5 0.6		PID<1		
	0.7	FILLING-humid, golden brown, fine to coarse grained gravelly sand with trace large gravel		D	1.0 1.1		PID<1		1
	1.5	FILLING-humid to damp, brown/grey mottled orange, fine to medium grained sandy clay		D	1.8 1.7		PID<1		
	1.8	Pit discontinued at 1.8m -limit of investigation							2
									3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Cinderblocks embedded in ground near test pit.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 592 M AHD
EASTING: 697926
NORTHING: 6081678

PIT No: 8
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown fine to medium grained silty sand, cemented		D	0.0 0.1		PID<1		
	0.4	FILLING-humid, brown, fine to coarse grained gravelly sand, cemented		D	0.5 0.6		PID<1		
	0.7	FILLING-humid, dark grey silty clay with trace fine grained sand, cemented		D	1.0 1.1		PID<1		1
	1.6	FILLING-humid, brown/golden brown, fine to coarse grained gravelly sand, slightly cemented		D	2.0 2.1		PID<1		2
	2.4	FILLING-damp, grey mottled orange/brown, fine to medium grained sandy clay							
	2.6	Pit discontinued at 2.6m -limit of investigation							3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 697911
NORTHING: 6081668

PIT No: 9
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, red brown, fine to medium grained sandy clay with some gravel, slighty cemented		D	0.0 0.1		PID<1		
	0.4	FILLING-humid, brown, fine to medium grained sandy silt, slightly cemented		D	0.5 0.6		PID<1		
	0.5	FILLING-very dark grey/brown, fine grained sandy clay							
	1			D	1.0 1.1		PID<1		1
	2			D	2.0 2.1		PID<1		2
	2.3	FILLING-humid to damp, light brown silty clay with trace fine grained sand		D	2.3 2.4		PID<1		
	2.5	Pit discontinued at 2.5m -limit of investigation							3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Near test pit - metal sheeting, concrete blocks, adjacent to wooden sealing area.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 697899
NORTHING: 6081646

PIT No: 10
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown, fine to coarse grained sandy clay with some gravel, slightly cemented, with trace of steel pipe		D	0.0 0.1		PID<1		
				D	0.5 0.6		PID<1		
	0.7	FILLING-humid, very dark grey silty clay with trace fine grained sand							
588	1			D	1.0 1.1		PID<1		1
		-at 2.1m, aluminium can fragment		D	2.0 2.1		PID<1		2
	2.7	FILLING-humid to damp, light brown mottled grey silty clay with trace fine grained sand		D	2.7 2.8		PID<1		
586	2.9	Pit discontinued at 2.9m -limit of investigation							3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Adjacent to seating area

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 698047
NORTHING: 6081655

PIT No: 11
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-brown sandy silty clay with rootlets		D	0.0		PID<1		
	0.1	FILLING-brown sandy silt			0.1				
				D	0.5		PID<1		
					0.6				
-1		-from 1.0m, becoming pale orange/brown		D	1.0		PID<1		-1
					1.1				
-2	2.0	SANDY CLAY-brown mottled dark grey sandy clay		D	2.0		PID<1		-2
					2.1				
	2.5	Pit discontinued at 2.5m -limit of investigation							
-3									-3

RIG:
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Pit dug on side of fill embankment.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 698007
NORTHING: 6081700

PIT No: 12
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-brown sandy clay with rootlets		D	0.0		PID<1		
	0.1	FILLING-brown to grey sandy silt			0.1				
				D	0.5		PID<1		
					0.6				
				D	1.0		PID<1		1
					1.1				
	1.2	SANDY SILT-brown/orange sandy silt							
		-from 2.0m, trace dark grey sandy clay		D	2.0		PID<1		2
					2.1				
	2.2	Pit discontinued at 2.2m -limit of investigation							3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Pit dug into side of fill embankment

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 697958
NORTHING: 6081712

PIT No: 13
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-brown sandy silt with trace gravel		D	0.0 0.1		PID<1		
				D	0.5 0.6		PID<1		
	1.0	FILLING-dark brown sandy silt		D	1.0 1.1		PID<1		1
	2.0	SANDY SILT-orange brown sandy silt		D	2.0 2.1		PID<1		2
				D	3.0 3.1		PID<1		3
	3.2	Pit discontinued at 3.2m -limit of investigation							

RIG:
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Metal drum container on ground. Pit dug into side of fill embankment.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 697905
NORTHING: 6081887

PIT No: 14
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-dark brown silty clay		D	0.0		PID<1		
	0.1	FILLING-brown sandy silt with trace gravel			0.1				
				D	0.5		PID<1		
					0.6				
				D	1.0		PID<1		1
					1.1				
	1.5	SANDY SILT-brown/orange sandy silt		D	1.5		PID<1		
					1.6				
	1.9	Pit discontinued at 1.9m -limit of investigation							2
									3

RIG:
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Brick on surface. Pit dug into side of fill embankment

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 587 M AHD
EASTING: 697885
NORTHING: 6081632

PIT No: 15
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, dark brown/grey, fine to medium grained silty sand with trace gravel		D	0.0 0.1		PID<1		
				D	0.5 0.6		PID<1		
	1			D	1.0 1.1		PID<1		1
	1.8	SILTY SAND-humid, light brown/grey, fine to medium grained silty sand		D	2.0 2.1		PID<1		2
	2.4	Pit discontinued at 2.4m -limit of investigation							3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Pit dug into side of fill embankment

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 582 M AHD
EASTING: 697968
NORTHING: 6081660

PIT No: 16
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown, fine to medium grained gravelly sand, gravel is well graded		D	0.0 0.1		PID<1		
	0.25	FILLING-brown, fine to medium grained sandy silt, slightly cemented with some cemented, very light grey/brown, fine to coarse grained sandy clay with some well graded gravel		D	0.5		PID<1		
	0.6	SANDY CLAY-humid, dark brown, fine to medium grained sandy clay with trace gravel			0.6				
581	1	-from 1.0m, becoming golden brown							1
	1.3	SANDY CLAY-damp, grey mottled orange/brown, fine to medium grained sandy clay		D	1.5		PID<1		
	1.7	Pit discontinued at 1.7m -limit of investigation							
579	2								2
578	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted next to concrete ring that runs around the inside of the racetrack

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 697914
NORTHING: 6081592

PIT No: 17
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown, silty clay with trace medium grained sand, slightly cemented		D	0.0		PID<1		
	0.15	FILLING-humid, brown/grey, fine to medium grained silty sand, cemented with some well graded gravel			0.1				
		-at 0.5m, refusing on 600mm bucket, changed to smaller bucket		D	0.5		PID<1		
	0.6	GRAVELLY SAND-humid, brown, fine to coarse grained gravelly sand, slightly cemented			0.6				
				D	1.0		PID<1		1
					1.1				
	1.2	CLAY-grey mottled brown/orange silty clay							
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Surrounding test pit - wood, metal, concrete

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 581 M AHD
EASTING: 697952
NORTHING: 6081498

PIT No: 18
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown silty clay, slightly cemented with trace fine to medium grained sand and gravel		D	0.0 0.1		PID<1		
	0.3	FILLING-humid, orange brown, fine to medium grained sandy clay, cemented, with trace gravel							
	0.5	FILLING-very light grey silty clay, cemented, with trace gravel		D	0.5		PID<1		
	0.6	CLAYEY SAND-humid, brown, fine to medium grained sandy clay with trace gravel			0.6				
580	1			D	1.0 1.1		PID<1		1
	1.4	SANDY CLAY-damp, grey mottled brown/orange, fine to medium grained sandy clay		D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
579	2								2
578	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Near test pit adjacent to fence - cloth, plastic, chair, scrap metal, wood, car parts, empty oil can.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 698013
NORTHING: 6081573

PIT No: 19
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, orange/brown, fine to medium grained sandy clay, slightly cemented		D	0.0 0.1		PID<1		
	0.25	FILLING-light orange brown, fine to coarse grained gravelly sand, cemented							
	0.4	CLAY-moist, very dark grey clay, moisture content less than plastic limit		D	0.5 0.6		PID<1		
	1			D	1.0 1.1		PID<1		1
				D	1.5 1.6		PID<1		
	1.7	CLAY-moist, grey and mottled orange clay, moisture content less than plastic limit with trace medium grained sand		D	2.0 2.1		PID<1		2
	2.3	Pit discontinued at 2.3m -limit of investigation							3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted on speed track

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 579 M AHD
EASTING: 697967
NORTHING: 6081624

PIT No: 20
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING-humid, brown fine grained sandy silt, slightly cemented, with trace rootlets and gravel and plastic		D	0.0 0.1		PID<1		
	0.2	FILLING-humid, very light grey silty clay, slightly cemented, with trace gravel							
	0.5	SILTY SAND-humid, orange brown, fine to medium grained silty sand		D	0.5 0.6		PID<1		
578	1			D	1.0 1.1		PID<1		1
	1.3	SANDY CLAY-damp, grey mottled orange/brown, fine to medium grained sandy silt		D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
577	2								2
576	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 581 M AHD
EASTING: 697959
NORTHING: 6081555

PIT No: 21
PROJECT No: 46162.12
DATE: 21/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL FILLING-damp, brown, fine to medium grained sandy silt with some rootlets		D	0.0		PID<1		
		FILLING-humid, brown, fine grained clayey sand with trace rootlets			0.1				
				D	0.5		PID<1		
	0.6	FILLING-moist to slightly wet, fine to medium grained clayey sand/sandy clay (pliable) -at 0.7m, unidentified service			0.6				
580	1	-at 1.1m, unidentified service		D	1.0		PID<1.2		1
					1.1				
	1.3	SANDY CLAY-damp to moist, grey mottled orange/brown, fine to medium grained sandy clay							
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
579	2								2
578	3								3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 594 M AHD
EASTING: 698075
NORTHING: 6081585

PIT No: 22
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, orange brown, fine to medium grained sandy silt		D	0.0		PID<1		
	0.2	-at 0.15m, services - power			0.1				
		FILLING-humid, orange brown, fine to medium grained sandy clay -at 0.25m, Telecom with some gravel		D	0.5		PID<1		
					0.6				
				D	1.0		PID<1		
					1.1				
				D	1.5		PID<1		
	1.6	CLAY-moist, grey and orange clay with trace of medium grained sand			1.8				
	1.8	Pit discontinued at 1.8m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 581 M AHD
EASTING: 698065
NORTHING: 6081586

PIT No: 23
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL FILLING-moist, brown sandy silt, fine grained with some rootlets		D	0.0		PID<1		
		FILLING-humid, fine to medium grained silty sand with trace gravel including quartz and pieces of metal			0.1				
				D	0.5		PID<1		
	0.6	SANDY CLAY-moist,dark grey, fine to medium grained sandy clay			0.6				
	1								1
		-from 1.0m, becoming grey sandy clay, fine to medium grained gravel		D	1.0		PID<1		
					1.1				
				D	1.5		PID<1		
					1.8				
	1.9	Pit discontinued at 1.9m -limit of investigation							
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Surrounding test pit-metal sheeting, glass, fibreglass, plastic and concrete.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 583 M AHD
EASTING: 698106
NORTHING: 6081586

PIT No: 24
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	TOPSOIL FILLING- moist, brown, fine to medium grained silty sand with some rootlets, trace loose gravel (blue metal / roadbase) on the surface		D	0.0 0.1		PID<1		
	0.2	FILLING-humid, fine to medium grained silty sand with trace gravel and piece of bitumen							
		SILTY CLAY-moist, dark grey silty clay with trace of fine to medium grained sand		D	0.5 0.6		PID<1		
582	1			D	1.0 1.1		PID<1		1
	1.5	SANDY CLAY-humid to moist, dark grey, medium to coarse grained sandy clay		D	1.5 1.8		PID<1		
581	2								2
	2.5	Pit discontinued at 2.5m -limit of investigation							
580	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Next to concrete slab and metal roof sheets.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 698041
NORTHING: 6081559

PIT No: 25
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.01	ASPHALTIC CEMENT-black gravelly asphaltic cement, vegetation growing through cracks			0.0		PID<1		
	0.2	FILLING-humid, light orange/brown, fine to coarse grained gravelly sand and basaltic gravel			0.1				
		FILLING-humid, light brown, fine to coarse grained sandy clay							
		at 0.2-0.5m depth, concrete pipe (cracked during excavation), running towards racetrack and towards the creek			0.5		PID<1		
	0.6	SANDY CLAY-humid, light orange, grey and brown, fine to medium grained sandy clay			0.5				
	1				1.0		PID<1		1
					1.1				
	1.2	Pit discontinued at 1.2m -limit of investigation							
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Surface surrounding pit-broken tiles, basaltic gravel and bricks

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 698086
NORTHING: 6081530

PIT No: 26
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL FILLING-moist, brown, fine to medium grained silty sand with some rootlets		D	0.0		PID<1		
		FILLING/SILTY SAND-humid, light brown, fine to medium grained silty sand, slightly cemented			0.1				
	0.4	SILTY CLAY-moist, dark grey silty clay with trace of fine grained sand		D	0.5		PID<1		
					0.6				
-1				D	1.0		PID<1	-1	
					1.1				
	1.3	SANDY CLAY-moist: dark grey, fine to medium grained sandy clay with trace gravel		D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
-2								-2	
-3								-3	

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 581 M AHD
EASTING: 698106
NORTHING: 6081558

PIT No: 27
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	TOPSOIL FILLING-light brown fine to medium grained silty sand with some rootlets		D	0.0		PID<1		
	0.15	FILLING-humid, brown, fine to medium grained silty sand, slightly cemented/layered, with trace gravel, with piece of bitumen			0.1				
	0.4	SANDY CLAY-moist, brown, fine to medium grained sandy clay			0.5		PID<1		
				D	0.6				
	0.7	SILTY CLAY-moist, very dark grey silty clay							
580	1			D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
579	2								2
578	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Next to concrete slab.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698045
NORTHING: 6081534

PIT No: 28
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.01	ASPHALTIC CEMENT-black with some orange small gravelled asphaltic cement		D	0.0		PID<1		
	0.2	FILLING-humid, light orange brown, fine to coarse grained gravelly sand			0.1				
		SANDY CLAY-humid, grey and orange, fine to coarse grained sandy clay, cemented, with trace gravel		D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 582 M AHD
EASTING: 698130
NORTHING: 6081562

PIT No: 29
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL FILLING-moist, fine to medium grained silty sand with some rootlets		D	0.0		PID<1		
		FILLING-moist, light brown, fine to medium grained gravelly sand			0.1				
	0.3	SANDY CLAY-grey brown, fine to medium grained sandy clay with some gravel							
				D	0.5		PID<1		
					0.6				
	0.7	CLAY-moist, very dark grey clay with trace of medium grained sand							
581	1			D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -refusal on cemented sandy clay			1.6				
580	2								2
579	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Next to stormwater drain

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 698108
NORTHING: 6081499

PIT No: 30
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, orange-brown silty clay with some gravel		D	0.0 0.1		PID<1		
	0.4	SANDY CLAY-humid, orange-brown, fine grained sandy clay		D	0.5 0.6		PID<1		
	1	-from 1m, becoming more fine to medium grained sandy clay		D	1.0 1.1		PID<1		1
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698634
NORTHING: 6081528

PIT No: 31
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.01	TOPSOIL FILLING-moist, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
					0.1				
		FILLING-humid, orange brown, fine to coarse grained gravelly sand with some large gravel, trace of glass							
	0.3	FILLING-humid, very dark grey, fine to medium grained sandy clay							
				D	0.5		PID<1		
	0.6	FILLING-humid, orange brown, fine to medium grained clayey sand			0.6				
589	1			D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
	1.8	SANDY CLAY-humid, grey/brown/red, fine to medium grained sandy clay			1.8				
588	2								2
	2.1	Pit discontinued at 2.1m -limit of investigation							
587	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: On fill embankment of race track

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 587 M AHD
EASTING: 698011
NORTHING: 6081515

PIT No: 32
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		FILLING (natural reworked)-humid, light brown/orange, fine to medium grained silty sand			0.1				
		-at 0.4m, services (power)		D	0.5		PID<1		
	0.6	FILLING (potentially natural)-humid, orange/brown, fine to coarse grained sandy clay with trace gravel			0.6				
586	1.0	SANDY CLAY-humid, light brown, fine to medium grained sandy clay		D	1.0		PID<1		1
					1.1				
	1.7	Pit discontinued at 1.7m -limit of investigation							
585	2								2
584	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: On surface near test pit - roof guttering fragments.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 697986
NORTHING: 6081485

PIT No: 33
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.01	TOPSOIL FILLING-moist, brown, fine to medium grained sandy silt with some rootlets		D	0.0		PID<1		
	0.2	FILLING-humid, orange brown, fine to medium grained silty sand			0.1				
		FILLING-light grey, fine to medium grained silty sand (cemented) and light brown fine to medium grained silty sand (not cemented)			0.5				
				D			PID<1		
	0.6	FILLING-humid, light brown, fine to medium grained clayey sand			0.6				
	1				1.0				1
				D			PID<1		
					1.1				
	1.4	CLAY-moist, grey/orange clay with trace of medium grained sand							
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 697852
NORTHING: 6081606

PIT No: 34
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	TOPSOIL-damp, brown clayey silt with traces of fine grained sand, glass and ceramic fragments		D	0.0 0.1		PID<1		
	0.1	SILTY SAND-humid, light grey, fine to medium grained silty sand, cemented		D	0.5 0.5		PID<1		
-1				D	1.0		PID<1		1
	1.1	CLAYEY SAND-humid, brown mottled orange grey, fine to medium grained clayey sand			1.1				
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
-2									2
-3									3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted next to abandoned building

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 697850
NORTHING: 6081585

PIT No: 35
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
	0.1	SILTY SAND-damp to humid, light brown/grey, fine to medium grained silty sand, slightly cemented			0.1				
				D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
					1.1				
	1.3	CLAYEY SAND-damp to humid, grey mottled brown, fine to medium grained clayey sand							
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
	2								2
	3								3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted next to abandoned building

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 697839
NORTHING: 6081601

PIT No: 36
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
	0.1	SILTY SAND-humid, grey to light grey, fine to medium grained silty sand, slightly cemented			0.1				
				D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
					1.1				
	1.3	CLAYEY SAND-humid to damp, brown, mottled grey, fine to medium grained clayey sand		D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
	2								2
	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted next to abandoned building, barbed wire on ground.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 697864
NORTHING: 6081637

PIT No: 37
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		SILTY SAND-humid, light grey, fine to medium grained silty sand, slightly cemented			0.1				
				D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
	1.1	CLAYEY SAND-damp, orange/brown mottled grey, fine to medium grained clayey sand			1.1				
				D	1.5		PID<1		
	1.8	Pit discontinued at 1.8m -limit of investigation			1.8				
	2								2
	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 583 M AHD
EASTING: 697873
NORTHING: 6081645

PIT No: 38
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0 0.1		PID<1		
		SILTY SAND-humid, light grey, fine to medium grained silty sand, slightly cemented		D	0.5 0.6		PID<1		
	0.9	CLAYEY SAND-damp, orange/brown mottled grey, fine to medium grained clayey sand		D	1.0 1.1		PID<1		1
				D	1.5 1.8		PID<1		
	1.8	Pit discontinued at 1.8m -limit of investigation							2
									3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 697814
NORTHING: 6081579

PIT No: 39
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.04	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0 0.1		PID<1		
		SILTY SAND-humid, light brown/grey, fine to medium grained silty sand, slightly cemented		D	0.5 0.6		PID<1		
588	1			D	1.0 1.1		PID<1		1
	1.4	CLAYEY SAND-damp, grey mottled orange brown, fine to medium grained clayey sand		D	1.5 1.8		PID<1		
587	1.8	Pit discontinued at 1.8m -limit of investigation							2
586	2								3

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 697804
NORTHING: 6081583

PIT No: 40
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0 0.1		PID<1		
		SILTY SAND-humid, light brown/grey, fine to medium grained silty sand, slightly cemented		D	0.5 0.6		PID<1		
				D	1.0 1.1		PID<1		
	1.3	CLAYEY SAND-damp, grey mottled orange/brown, fine to medium grained clayey sand		D	1.5 1.6		PID<1		
	1.7	Pit discontinued at 1.7m -limit of investigation							

RIG:

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 592 M AHD
EASTING: 697847
NORTHING: 6081629

PIT No: 41
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	TOPSOIL FILLING-brown silty clay with trace sand and trace rootlets		D	0.0 0.1		PID<1		
		FILLING-brown sandy silty clay		D	0.5 0.6		PID<1		
		-from 0.8m, becoming orange/brown/grey		D	1.0 1.1		PID<1		1
	1.2	SILTY CLAY-brown/orange silty clay		D	1.5 1.6		PID<1		
				D	2.0 2.1		PID<1		2
				D	2.5 2.6		PID<1		
	2.6	Pit discontinued at 2.6m -limit of investigation							3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted adjacent to soakaway

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 595 M AHD
EASTING: 697847
NORTHING: 6081623

PIT No: 42
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	TOPSOIL FILLING-brown clay with trace sand and rootlets		D	0.0		PID<1		
	0.1	FILLING-brown/orange clay with trace sand			0.1				
				D	0.5		PID<1		
	0.6	SILTY CLAY-humid, orange/brown silty clay			0.6				
594	1			D	1.0		PID<1		1
					1.1				
	1.5	SILTY CLAY-orange-brown silty clay		D	1.5		PID<1		
					1.6				
593	2			D	2.0		PID<1		2
					2.1				
				D	2.5		PID<1		
					2.6				
	2.7	Pit discontinued at 2.7m -limit of investigation							
592	3								3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted adjacent to soakaway

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698189
NORTHING: 6081598

PIT No: 43
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	TOPSOIL FILLING-brown sandy clay with rootlets		D	0.0		PID<1		
	0.1	FILLING-dark brown sandy silt			0.1				
				D	0.5		PID<1		
	0.6	FILLING-dark brown sandy clay			0.6				
				D	1.0		PID<1		1
	1.2	SILTY CLAY-light orange/brown mottled grey silty clay			1.1				
				D	1.5		PID<1		
					1.6				
				D	2.0		PID<1		2
					2.1				
				D	2.5		PID<1		
	2.7				2.6				
		Pit discontinued at 2.7m -limit of investigation							3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted adjacent to soakaway

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 698171
NORTHING: 6081593

PIT No: 44
PROJECT No: 46162.12
DATE: 26/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		TOPSOIL FILLING-brown sandy silt with rootlets		D	0.0		PID<1		
	0.1	FILLING-humid, brown silty sand with trace anthropogenics material including brick			0.1				
				D	0.5		PID<1		
					0.6				
	1.0	FILLING-brown sandy silt with clay, with trace gravel		D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
					1.6				
	1.7	SILTY CLAY-brown silty clay with trace gravel							
				D	2.0		PID<1		2
					2.1				
		-from 2.3m, becoming dark grey silty clay							
				D	2.5		PID<1		
					2.6				
	2.7	Pit discontinued at 2.7m -limit of investigation							3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted adjacent to soakaway

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 596 M AHD
EASTING: 698191
NORTHING: 6081271

PIT No: 45
PROJECT No: 46162.12
DATE: 26/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-brown sandy clay with rootlets		D	0.0		PID<1		
	0.1	FILLING-brown sandy clay			0.1				
		at 0.5m, white and black plastic pipes		D	0.5		PID<1		
					0.6				
595	1.0	SANDY CLAY-light brown/orange, fine to medium grained sandy clay		D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
					1.8				
594	2			D	2.0		PID<1		2
					2.1				
				D	2.5		PID<1		
					2.6				
	2.7	Pit discontinued at 2.7m -limit of investigation							
593	3								3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted beside demolished structure and soakaway. Bricks on surface and scrap metal.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 596 M AHD
EASTING: 698194
NORTHING: 6881265

PIT No: 46
PROJECT No: 46162.12
DATE: 26/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING-brown sandy clay with rootlets. Anthropogenics material on surface		D	0.0 0.1		PID<1		
		FILLING-light brown sandy clay		D	0.5 0.6		PID<1		
		-at 0.8m, anthropogenic material - black plastic cable							
595	1.0	SANDY CLAY-brown, fine to medium grained sandy clay		D	1.0 1.1		PID<1		1
				D	1.5 1.6		PID<1		
594	2			D	2.0 2.1		PID<1		2
				D	2.5 2.6		PID<1		
	2.7	Pit discontinued at 2.7m -limit of investigation							
593	3								3

RIG:
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted adjacent to demolished structure and beside soakaway. Construction and demolition on ground surface - bricks, plastic, metal.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698026
NORTHING: 6081492

PIT No: 47
PROJECT No: 46162.12
DATE: 26/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		TOPSOIL FILLING-dark brown sandy clay with rootlets		D	0.0 0.1		PID<1		
	0.2	FILLING-brown sandy clay with trace gravel							
		-at 0.4m, electrical conduit		D	0.5 0.6		PID<1		
	1			D	1.0 1.1		PID<1		1
		-from 1.5m, becoming grey		D	1.5 1.6		PID<1		
	2			D	2.0		PID<1		2
	2.1	SANDY CLAY-orange/brown sandy clay			2.1				
				D	2.5 2.6		PID<1		
	2.7	Pit discontinued at 2.7m -limit of investigation							3

RIG:
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted adjacent to soakaway. Common anthropogenic material on surface - bricks, concrete boulders, pipes, plastic pipes.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698019
NORTHING: 6081485

PIT No: 48
PROJECT No: 46162.12
DATE: 26/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		TOPSOIL FILLING-brown sandy clay with rootlets		D	0.0		PID<1		
					0.1				
	0.2	FILLING-brown sandy clay							
				D	0.5		PID<1		
					0.6				
		-from 0.9m, orange/brown sandy clay							
				D	1.0		PID<1		
					1.1				
		-from 1.2m, becoming grey mottled orange/brown sandy clay							
				D	1.5		vPID<1		
	1.6	SANDY CLAY-orange/brown sandy clay			1.8				
				D	2.0		PID<1		
					2.1				
				D	2.5		PID<1		
					2.6				
	2.7	Pit discontinued at 2.7m -limit of investigation							

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 697870
NORTHING: 6081552

PIT No: 49
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-damp, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		SILTY SAND-humid, light brown, fine to medium grained silty sand, slightly cemented			0.1				
				D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
					1.1				
	1.3	CLAYEY SAND-humid, grey mottled orange/brown, fine to medium grained clayey sand		D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
	2								2
	3								3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 593 M AHD
EASTING: 697894
NORTHING: 6081526

PIT No: 50
PROJECT No: 46162.12
DATE: 22/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-damp, light brown, fine to medium grained silty sand		D	0.0 0.1		PID<1		
	0.25	FILLING-humid, light grey/brown, fine to medium grained silty sand		D	0.5 0.6		PID<1		
				D	1.0 1.1		PID<1		1
	1.4	CLAYEY SAND-humid, grey mottled orange/brown, fine to medium grained clayey sand		D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
									2
									3

RIG:
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 585 M AHD
EASTING: 698271
NORTHING: 6081660

PIT No: 51
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, dark brown, fine to medium grained clayey silty sand, with some anthropogenic material including - aluminium drink cans, styrofoam food containers, plastic toys/figures, glass bottles, scrap rusted metal, VHS tapes, cloth		D	0.0 0.1		PID<1		
				D	0.5 0.6		PID<1		
		-from 0.6m, becoming fine to medium grained sandy clay							
	1			D	1.0 1.1		PID<1		1
	1.7	SANDY CLAY-moist, light grey medium grained sandy clay		D	1.7 1.8		PID<1		
	1.9	Pit discontinued at 1.9m -limit of investigation							
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 590 M AHD
EASTING: 698251
NORTHING: 6081661

PIT No: 52
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, brown, fine to medium grained sandy silt with trace gravel, with some anthropogenic material (construction and demolition and household) including scrap metal, wire, wood, metal sheeting, fabric, concrete, food packaging, glass bottles, star pickets, copper wire, aluminium cans *less rubbish in first 0.3m		D	0.0 0.1		PID<1		
				D	0.5 0.6		PID<1		
				D	1.0 1.1		PID<1		
	1.3	CLAYEY SILT-humid to moist, dark brown/grey, fine to medium grained clayey silt		D	1.5 1.8		PID<1		
	1.8	Pit discontinued at 1.8m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Potential asbestos fibres bagged

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 583 M AHD
EASTING: 698236
NORTHING: 6081655

PIT No: 53
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL FILLING-moist, brown, fine grained silty sand with some rootlets		D	0.0		PID<1		
		FILLING-humid, light brown, fine grained sandy silt with trace rootlets and anthropogenic material including - plastic bag, cloth, glass (sheets, bottles)			0.1				
				D	0.5		PID<1		
					0.6				
582	1								1
	1.0	SANDY CLAY-brown with some grey, fine to medium grained sandy clay							
				D	1.5		PID<1		
	1.6	Pit discontinued at 1.6m -limit of investigation			1.6				
581	2								2
580	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 698221
NORTHING: 6081666

PIT No: 54
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-moist, brown, fine to medium grained silty sand with some rootlets		D	0.0 0.1		PID<1		
		SANDY SILT-humid, light brown, fine to medium grained sandy silt with trace rootlets, trace gravel							
	0.5	SILTY SAND-humid, light brown, fine to medium grained silty sand, slightly cemented		D	0.5 0.6		PID<1		
	1.2	Pit discontinued at 1.2m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 698271
NORTHING: 6081675

PIT No: 55
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.01	TOPSOIL-moist, dark brown, fine to medium grained sandy silt with some rootlets		D	0.0		PID<1		
		SANDY CLAY-humid, dark grey, fine to medium grained sandy clay with trace rootlets			0.1				
	0.4	CLAYEY SAND-humid, light grey brown, fine to medium grained clayey sand with trace gravel		D	0.5		PID<1		
					0.6				
588	1			D	1.0		PID<1		1
					1.1				
	1.3	Pit discontinued at 1.3m -limit of investigation							
587	2								2
586	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted into former landfill

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 596 M AHD
EASTING: 698256
NORTHING: 6081670

PIT No: 56
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, light brown, fine to coarse grained gravelly sand with trace anthropogenic material (plastic)		D	0.0 0.1		PID<1		
	0.3	FILLING-humid, brown, fine to coarse grained gravelly sand with some anthropogenic material - plastic bags, plastic items (bottles, cups, cutlery), glass bottles		D	0.5 0.6		PID<1		
595	0.9 1	GRAVELLY SAND-humid, dark grey, fine to coarse grained gravelly sand		D	1.0 1.1		PID<1		1
	1.6	SANDY CLAY-moist, dark grey, fine to medium grained sandy clay							
594	1.9 2	Pit discontinued at 1.9m -limit of investigation							2
593	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 698242
NORTHING: 6081676

PIT No: 57
PROJECT No: 46162.12
DATE: 20/8/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, light grey brown, fine to coarse grained gravelly sand with anthropogenic waste including several whole tyres, aluminium cans, plastic drink bottles, concrete with metal pipes, wood, car battery, oil barrel, corrugated compressed asbestos cement sheet fragments		D	0.0 0.1		PID<1		
				D	0.5 0.6		PID<1		
				D	1.0 1.1		PID<1		
				D	2.0 2.1		PID<1		
	2.1	CLAY-humid, dark grey clay with trace medium grained sand		D	2.2 2.3		PID<1		
	2.3	Pit discontinued at 2.3m -test pit walls collapsing due to rubbish on side walls							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Construction and demolition rubble including - concrete, scrap metal, tyres, carparts, battery

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 585 M AHD
EASTING: 698222
NORTHING: 6081677

PIT No: 58
PROJECT No: 46162.12
DATE: 20/8/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, dark brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		CLAYEY SAND-humid, light grey, fine to medium grained clayey sand			0.1				
		-from 0.4m, becoming more sandy clay							
				D	0.5		PID<1		
					0.6				
	1.1	Pit discontinued at 1.1m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 591 M AHD
EASTING: 698257
NORTHING: 6081689

PIT No: 59
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-moist, dark brown, fine grained sandy silt with some rootlets		D	0.0 0.1		PID<1		
		SANDY SILT-humid, light brown, fine grained sandy silt with trace rootlets							
	0.5	SILTY CLAY-humid, grey/dark grey silty clay		D	0.5 0.6		PID<1		
	1.0	Pit discontinued at 1.0m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 588 M AHD
EASTING: 698237
NORTHING: 6081685

PIT No: 60
PROJECT No: 46162.12
DATE: 20/8/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-moist, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		SILTY CLAY-humid, light greyish brown silty clay with trace of medium grained sand			0.1				
	0.3	SANDY CLAY-humid, light grey brown, fine to medium grained sandy clay							
				D	0.5		PID<1		
					0.6				
	1.0	Pit discontinued at 1.0m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

PID<1PID<1

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 592 M AHD
EASTING: 698849
NORTHING: 6081401

PIT No: 61
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, brown silty sand with some rootlets		D	0.0		PID<1		
		SILTY SAND-humid, orange brown, fine to medium grained silty sand with trace rootlets until 0.4m			0.1				
				D	0.4		PID<1		
					0.5				
	0.9	SILTY CLAY-moist, grey mottled red brown silty clay with some fine to medium grained orange brown silty sand		D	1.0		PID<1		1
					1.1				
	1.5	Pit discontinued at 1.5m -limit of investigation							
									2
									3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 599 M AHD
EASTING: 698737
NORTHING: 6081277

PIT No: 62
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-moist, brown, fine to medium grained silty sand with some rootlets		D	0.0 0.1		PID<1		
		SANDY SILT-damp, light brown, fine to medium grained sandy silt with trace rootlets							
	0.4	SANDY CLAY-moist, orange brown, fine to medium grained sandy clay		D	0.5 0.6		PID<1		
598	1			D	1.0 1.1		PID<1		1
	1.3	CLAYEY SAND/SANDY CLAY-humid, light brown, medium grained clayey sand/sandy clay							
	1.6	Pit discontinued at 1.6m -limit of investigation							
597	2								2
596	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 698733
NORTHING: 6081727

PIT No: 63
PROJECT No: 46162.12
DATE: 18/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING-dark brown silty clay		D	0.0		PID<1		
		FILLING-brown/grey silty clay with trace rootlets			0.1				
	0.4	SILTY CLAY-silty clay with sand			0.5				
				D			PID<1		
					0.6				
-1		-from 1.0m, predominantly grey/brown sand			1.0				-1
				D			PID<1		
					1.1				
		-at 1.5m, becoming dark brown sandy silty clay							
	1.9	Pit discontinued at 1.9m							
-2		-limit of investigation							-2
-3									-3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Open paddock

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 601 M AHD
EASTING: 698783
NORTHING: 6081738

PIT No: 64
PROJECT No: 46162.12
DATE: 18/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.07	TOPSOIL-moist, light brown silty sand with some rootlets							
		SANDY CLAY-humid, brown, fine to medium grained sandy clay with trace gravel							
	0.8	SILTY CLAY-humid, grey brown and dark grey silty clay with trace rootlets							
	1.5	Pit discontinued at 1.5m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit moved due to access

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 698759
NORTHING: 6081773

PIT No: 65
PROJECT No: 46162.12
DATE: 18/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-dark brown silty clay with rootlets		D	0.0		PID<1		
	0.1	SANDY SILT-brown fine grained sandy silt with trace gravel			0.1				
				D	0.5		PID<1		
	0.6	SILTY CLAY-brown silty clay with tree root			0.6				
	0.9	-humid, brown/grey silty clay							
-1				D	1.0		PID<1		1
					1.1				
		Pit discontinued at 1.7m -limit of investigation							
-2									2
-3									3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LML/LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 698699
NORTHING: 6081637

PIT No: 66
PROJECT No: 46162.12
DATE: 18/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		TOPSOIL-brown silty clay with rootlets		D	0.0		PID<1		
					0.1				
	0.2	SILTY CLAY- brown mottled grey silty clay with trace ironstone and gravel							
				D	0.5		PID<1		
					0.6				
-1		-from 1.0m, becoming predominantly sand with some silty clay with trace siltstone gravel		D	1.0		PID<1		-1
					1.1				
				D	1.5		PID<1		
					1.8				
	1.7	Pit discontinued at 1.7m -limit of investigation							
-2									-2
-3									-3

RIG: Kobelco Acera Geospec SK135SR fitted with 450mm wide bucket **LOGGED:** LML **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Open paddock - construction and demolition rubble north east of test pit

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 601 M AHD
EASTING: 698705
NORTHING: 6081511

PIT No: 67
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-moist, brown silty clay with some rootlets		D	0.0		PID<1		
		SANDY SILT-humid, light brown, fine grained sandy silt			0.1				
	0.3	SANDY CLAY-humid, orange brown, fine to medium grained sandy clay							
				D	0.5		PID<1		
	0.6	SILTY CLAY-moist, brown silty clay with trace medium grained sand			0.6				
600	1			D	1.0		PID<1		1
					1.1				
	1.6	Pit discontinued at 1.6m -limit of investigation							
599	2								2
598	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LML **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Open paddock

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: –
EASTING: 698571
NORTHING: 6081628

PIT No: 68
PROJECT No: 46162.12
DATE: 18/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		TOPSOIL-brown silty clay		D	0.0		PID<1		
					0.1				
	0.2	SILTY CLAY brown/mottled grey/brown silty clay with sand							
				D	0.5		PID<1		
					0.6				
-1	1.0	SAND- becoming predominantly sand with some silty clay		D	1.0		PID<1		1
					1.1				
	1.7	Pit discontinued at 1.7m -limit of investigation							
-2									2
-3									3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Open paddock

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 587 M AHD
EASTING: 698588
NORTHING: 6081473

PIT No: 69
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	TOPSOIL-moist, brown silty sand with some rootlets		D	0.0		PID<1		
		SANDY SILT-humid, light brown sandy silt with trace gravel			0.1				
	0.3	SANDY CLAY-humid to moist, orange brown, fine to medium grained sandy clay		D	0.5		PID<1		
					0.6				
	0.75	SANDY CLAY-moist, light orange brown, fine to medium grained sandy clay							
	1	-from 1.0m, becoming more medium grained and gravelly		D	1.0		PID<1		1
					1.1				
	1.7	Pit discontinued at 1.7m -limit of investigation							
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 585 M AHD
EASTING: 698447
NORTHING: 6081602

PIT No: 70
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, dark grey to grey, fine to medium grained silty sand with trace gravel		D	0.0 0.1		PID<1.1		
		-at 0.4m, surface level, layer of buried grass							
	0.5	SILTY SAND-humid, grey silty sand AND clayey sand (medium to coarse grained) with trace gravel		D	0.5 0.6				
	1			D	1.0 1.1		PID<1.1		1
	2	-at 2.0m, with some coarse grained gravel		D	2.0 2.1		PID<1		2
	2.5	Pit discontinued at 2.5m -limit of investigation							
	3								3

RIG: Kobelco Acera Geospec SK135SR fitted with ???
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted into dam wall

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 698457
NORTHING: 6081434

PIT No: 71
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, brown clayey silt with some rootlets		D	0.0		PID<1		
		SILTY SAND-humid, orange brown, fine grained silty sand with trace rootlets			0.1				
				D	0.5		PID<1		
	0.6	GRAVELLY SAND-humid, orange brown medium grained gravelly sand			0.6				
	0.8	GRAVELLY SAND-damp to moist, orange and grey, medium to coarse grained gravelly sand with some gravel and trace clay		D	1.0		PID<1		1
					1.1				
		-from 1.3m, greater sand content (medium to coarse grained) and moist							
	1.9	Pit discontinued at 1.9m -limit of investigation							2
									3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 587 M AHD
EASTING: 698344
NORTHING: 6081568

PIT No: 72
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	TOPSOIL-moist, brown fine grained sandy silt with some rootlets		D	0.0		PID<1		
	0.2	SANDY SILT-humid, brown grey, fine grained sandy silt with trace rootlets			0.1				
		SANDY SILT-humid, light grey, fine to medium grained sandy silt with trace clay content							
				D	0.5		PID<1		
	0.6	SANDY SILTY CLAY-grey, fine to medium grained sandy silty clay			0.5				
				D	1.0		PID<1		
					1.1				
	1.5	Pit discontinued at 1.5m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 698368
NORTHING: 6081388

PIT No: 73
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		TOPSOIL-moist, brown, fine grained sandy silt with rootlets		D	0.0 - 0.1		PID<1		
	0.2	SANDY CLAY-damp, grey mottled orange, fine to medium grained sandy clay							
	0.4	GRAVELLY SAND-humid, brown and orange, fine to coarse grained gravelly sand							
	0.9	CLAYEY SAND-moist, grey and orange, medium to coarse grained clayey sand with some gravel							1
	1.3	CLAYEY SAND-moist, golden brown, fine to medium grained clayey sand (greater sand content than previous layer)							
	1.6	Pit discontinued at 1.6m -limit of investigation							
									2
									3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: White conglomerate rock cobbles present at surface- not found in test pit at depth

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 587 M AHD
EASTING: 698317
NORTHING: 6081519

PIT No: 74
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, brown, fine to medium grained silty sand with some rootlets		D	0.0		PID<1		
		SANDY CLAY-humid, light brown/brown, fine to medium grained sandy clay with trace rootlets			0.1				
	0.4	CLAY-dry to humid, layered very dark grey clay with traces of medium grained sand			0.5				
				D			PID<1		
	0.6	SANDY CLAY-moist, grey mottled orange, fine to medium grained sandy clay			0.6				
				D	1.0		PID<1		1
	1.3	SANDY CLAY-damp, dark grey, fine to medium grained sandy clay			1.1				
	1.6	Pit discontinued at 1.6m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 583 M AHD
EASTING: 698212
NORTHING: 6081544

PIT No: 75
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, dark brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		SANDY SILT-humid, brown, fine grained sandy silt with trace rootlets			0.1				
	0.3	CLAY-humid to damp, very dark grey clay with trace rootlets and trace medium grained sand							
				D	0.5		PID<1		
					0.6				
	1			D	1.0		PID<1		1
					1.1				
	1.2	SANDY CLAY-moist, orange and grey, fine to medium grained sandy clay							
	1.6	Pit discontinued at 1.6m -limit of investigation							
	2								2
	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⁻	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 584 M AHD
EASTING: 698262
NORTHING: 6081566

PIT No: 76
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-humid, light orange brown, fine to medium grained silty sand with trace anthropogenic material (black plastic bags)		D	0.0 0.1		PID<1		
				D	0.4 0.5		PID<1		
	1	base of stockpile		D	1.0 1.1		PID<1		1
		-at 1.7m, black plastic bag embedded in side wall							
	2			D	2.0 2.1		PID<1		2
	2.4	-at 2.3m, cobbles and boulders dark grey claystone/shale SANDY CLAY-humid, brown and light grey, fine to medium grained sandy clay							
	3			D	3.0 3.1		PID<1		3
	3.1	Pit discontinued at 3.1m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket
LOGGED: LOC
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Test pit conducted through stock pile

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚡	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 585 M AHD
EASTING: 698203
NORTHING: 6081608

PIT No: 77
PROJECT No: 46162.12
DATE: 19/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL FILLING-moist, brown, fine grained sandy silt with some rootlets		D	0.0		PID<1		
		FILLING-humid, grey brown, fine to medium grained silty sand			0.1				
	0.3	FILLING-humid, brown, fine to coarse grained gravelly sand with piece of rusted metal							
				D	0.5		PID<1		
					0.6				
	0.8	FILLING-light brown, fine to coarse grained clayey sand with some gravel							
584	1	-at 1.0m, piece of rusted metal		D	1.0		PID<1		1
					1.1				
	1.6	SILTY SAND-light golden brown, fine to medium grained silty sand with trace gravel							
	1.9	Pit discontinued at 1.9m -limit of investigation							
583	2								2
582	3								3

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket **LOGGED:** LOC **SURVEY DATUM:** MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Surface (nearby) - black piping, rusted barrel, wood, while profile appears natural, scrap metal was found at 1.0m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 588 M AHD
EASTING: 697875
NORTHING: 6081915

PIT No: 78
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING-brown sandy clay with rootlets		D	0.0		PID<1		
	0.1	FILLING-humid, brown sandy clay			0.1				
	0.5	SANDY SILT-humid, orange/brown sandy silt		D	0.5		PID<1		
					0.6				
				D	1.0		PID<1		
					1.1				
				D	1.5		PID<1		
					1.6				
	1.7	Pit discontinued at 1.7m -limit of investigation							

RIG: Hitachi KR30 SWL 20.4Kg
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Household rubbish, construction and demolition - metal, glass, etc.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 588 M AHD
EASTING: 697833
NORTHING: 6081875

PIT No: 79
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
					0.0				
		FILLING-brown sandy silt with trace rootlets and trace gravel		D	0.1		PID<1		
	0.2	FILLING-brown/light grey sandy clay with sandstone cobbles							
				D	0.5		PID<1		
					0.6				
587	1.0	SANDY SILTY CLAY-brown/light grey sandy silty clay with sandstone gravel		D	1.0		PID<1		1
					1.1				
				D	1.5		PID<1		
					1.8				
	1.8	Pit discontinued at 1.8m -refusal on rock							
586	2								2
585	3								3

RIG:
LOGGED: LML
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 589 M AHD
EASTING: 697726
NORTHING: 6081777

PIT No: 80
PROJECT No: 46162.12
DATE: 25/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0	FILLING-brown/orange sandy clay with construction and demolition rubble including - concrete, scrap metal on surface		D	0.0 - 0.1		PID<1		
	0.4	FILLING-orange brown sandy clay with trace gravel		D	0.5 - 0.6		PID<1		
588	1			D	1.0 - 1.1		PID<1		1
	1.4	FILLING-orange/brown sandy clay with high gravel content and trace cobbles, with plastic		D	1.5 - 1.8		PID<1		
	1.8	SANDY CLAY-dark brown/dark grey sandy clay with trace gravel							
587	2								2
	2.2	Pit discontinued at 2.2m -limit of investigation							
586	3								3

RIG:

LOGGED: LML

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Concrete, scrap metal on surface. Disturbed surface. Small stockpile.

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 698270
NORTHING: 6081645

PIT No: 51-1
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	TOPSOIL-moist, brown, fine grained sandy silt with some rootlets							
	0.15	SANDY SILT-humid, brown, fine to medium grained sandy silt							
	0.4	CLAY-humid, light brown clay with trace of medium grained sand							
		Pit discontinued at 0.4m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 586 M AHD
EASTING: 698293
NORTHING: 6081646

PIT No: 51-2
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	TOPSOIL-moist, brown, fine grained sandy silt with some rootlets							
	0.2	SANDY SILT-humid, brown, fine to medium grained sandy silt with trace rootlets							
		SANDY CLAY-humid, light brown, fine to medium grained sandy clay							
	0.6	Pit discontinued at 0.6m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Small piece of metal on surface, nothing seen at depth

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⚹	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

TEST PIT LOG

CLIENT: Canberra Estates Consortium No 4 Pty Ltd
PROJECT: Proposed Subdivision
LOCATION: Lot 6 DP239080 Alderson Place

SURFACE LEVEL: 585 M AHD
EASTING: 698252
NORTHING: 6081644

PIT No: 52-1
PROJECT No: 46162.12
DATE: 20/6/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.03	TOPSOIL-brown, fine grained sandy silt with some rootlets							
		SANDY SILT-humid, brown, fine to medium grained sandy silt							
	0.6	CLAY-humid, light brown clay with trace of medium grained sand							
	0.9	Pit discontinued at 0.9m -limit of investigation							

RIG: Zaxis 13s US excavator fitted with 450mm wide bucket

LOGGED: LOC

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Extra test pit per client request (no sampling required).

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	⌵	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics | Environment | Groundwater

Appendix G

Data Quality Assessment

DATA QUALITY ASSESSMENT

Q1. Data Quality Objectives

The detailed site investigation report was prepared with reference to the seven step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure* 1999 as amended 2013 (NEPC, 2013). The DQO process is outlined as follows:

- Stating the Problem;
- Identifying the Decision;
- Identifying Inputs to the Decision;
- Defining the Boundary of the Assessment;
- Developing a Decision Rule;
- Specifying Acceptable Limits on Decision Errors; and
- Optimising the Design for Obtaining Data.

The DQOs have been addressed within the report as shown in Table Q1.

Table Q1: Data Quality Objectives

Data Quality Objective	Report Section where Addressed
State the Problem	S1 Introduction
Identify the Decision	S15 Conclusions and Recommendations
Identify Inputs to the Decision	S1 Introduction S3 Site Identification and Description S4 Soil Landscape, Regional Geology and Hydrogeology S5 Site History S8 Potential for Contamination S9 Preliminary Conceptual Site Model S12 Site Assessment Criteria S13 Results of the Investigation S14 Revised Conceptual Site Model
Define the Boundary of the Assessment	S3 Site Identification and Description Drawing 1 – Appendix B
Develop a Decision Rule	S12 Site Assessment Criteria
Specify Acceptable Limits on Decision Errors	S10 Sampling and Analysis Plan and Methodology S12 Site Assessment Criteria QA/QC Procedures and Results – Sections Q2, Q3
Optimise the Design for Obtaining Data	S10 Sampling and Analysis Plan and Methodology QA/QC Procedures and Results – Sections Q2, Q3

Q2. FIELD AND LABORATORY QUALITY CONTROL

The field and laboratory quality control (QC) procedures and results are summarised in Tables Q2 and Q3. Reference should be made to the fieldwork procedures in Section 10 and the laboratory certificate (Appendix H) for further details.

Table Q2: Field QC

Item	Frequency	Acceptance Criteria	Achievement
Intra-laboratory replicates	>10% primary samples	RPD <30% inorganics), <50% (organics)	yes[1]

NOTES: 1 qualitative assessment of RPD results overall; refer Section Q2.1

Table Q3: Laboratory QC

Item	Frequency	Acceptance Criteria	Achievement
Analytical laboratories used		NATA accreditation	yes
Holding times		In accordance with NEPC (2013) which references various Australian and international standards	yes
Laboratory / Reagant Blanks	1 per lab batch	<PQL	yes
Laboratory duplicates	10% primary samples	<5xPQL – any RPD; >5xPQL – 0-50%RPD	yes
Matrix Spikes	1 per lab batch	70-130% recovery (inorganics); 60-140% (organics)	yes
Surrogate Spikes	organics by GC	70-130% recovery (inorganics); 60-140% (organics)	yes
Control Samples	1 per lab batch	70-130% recovery (inorganics); 60-140% (organics)	yes

In summary, the QC data is considered to be of sufficient quality to be acceptable for the assessment.

Q2.1 Soil Intra-Laboratory Replicates

An intra-laboratory replicate was analysed as an internal check of the reproducibility within the primary laboratory Envirolab Services Pty Ltd (Envirolab) and as a measure of consistency of sampling techniques. The comparative results of analysis between original and intra-laboratory replicate sample are summarised in Table Q4.

Note that, where both samples are below LOR/PQL the difference and RPD have been given as a zero. Where one sample is reported below LOR/PQL, but a concentration is reported for the other, the LOR/PQL value has been used for calculation of the RPD for the less than LOR/PQL sample.

Douglas Partners
Geotechnics | Environment | Groundwater

Table Q4: Relative Percentage Difference Results – Intra-laboratory Replicates

Lab	Sample ID	Date Sampled	Media	Units	Metals								PAH				TRH			
					As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Total	BaP TEQ	BaP	Naphthalene	C6-C10	>C10-C16	>C16-C34	>C34-C40
Envirolab	Pit 70 0.0-0.1	19/06/2018	soil	mg/kg	<PQL	<PQL	9	7	16	<PQL	5	35	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	280	110
Envirolab	BD1/19	19/06/2018	soil	mg/kg	<PQL	<PQL	45	6	19	<PQL	5	10	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference				mg/kg	NA	NA	36	1	1	NA	0	25	NA	NA	NA	NA	NA	NA	NA	NA
RPD				%	NA	NA	**133**	15	5.4	NA	0	**111**	NA	NA	NA	NA	NA	NA	NA	NA
Envirolab	Pit 61 0.0-0.1	19/06/2018	soil	mg/kg	<PQL	<PQL	37	6	16	<PQL	5	12	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD2/19	19/06/2018	soil	mg/kg	<PQL	<PQL	16	6	14	<PQL	5	12	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference				mg/kg	NA	NA	21	0	2	NA	0	0	NA	NA	NA	NA	NA	NA	NA	NA
RPD				%	NA	NA	**79**	0	13	NA	0	0	NA	NA	NA	NA	NA	NA	NA	NA
Envirolab	Pit 51 0.5-0.6	19/06/2018	soil	mg/kg	<PQL	<PQL	8	8	24	<PQL	4	83	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	DB3/19	19/06/2018	soil	mg/kg	<PQL	<PQL	7	6	23	<PQL	6	38	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference				mg/kg	NA	NA	1	2	1	NA	2	25	NA	NA	NA	NA	NA	NA	NA	NA
RPD				%	NA	NA	13	28	4.2	NA	**40**	**49**	NA	NA	NA	NA	NA	NA	NA	NA
Envirolab	Pit 22 0.0-0.1	20/06/2018	soil	mg/kg	<PQL	<PQL	7	3	10	<PQL	3	14	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD1/20	20/06/2018	soil	mg/kg	<PQL	<PQL	8	5	16	<PQL	4	33	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference				mg/kg	NA	NA	1	2	7	NA	1	19	NA	NA	NA	NA	NA	NA	NA	NA
RPD				%	NA	NA	13	**50**	**46**	NA	28	**80**	NA	NA	NA	NA	NA	NA	NA	NA

Douglas Partners
Geotechnics | Environment | Groundwater

Lab	Sample ID	Date Sampled	Media	Units	Metals								PAH				TRH			
					As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Total	BaP TEQ	BaP	Naphthalene	C6-C10	>C10-C16	>C16-C34	>C34-C40
Envirolab	Pit 40 0.0-0.1	22/06/2018	soil	mg/kg	<PQL	<PQL	8	6	17	<PQL	4	28	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD1/22	22/06/2018	soil	mg/kg	<PQL	<PQL	10	7	18	<PQL	5	32	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference				mg/kg	NA	NA	2	1	1	NA	1	4	NA	NA	NA	NA	NA	NA	NA	NA
RPD				%	NA	NA	22	15	5.7	NA	22	13.3	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA/NT- not applicable, not tested

Douglas Partners
Geotechnics | Environment | Groundwater

Table Q4 Continues: Relative Percentage Difference Results – Intra-laboratory Replicates

Lab	Sample ID	Date Sampled	Media	Units	BTEX				Phenol	OCPs									OPP	PCB
					Benzene	Toluene	Ethylbenzene	xylene	Phenol	DDT +DDD +DDE	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Total OCPs	Total	Total
Envirolab	Pit 70 0.0-0.1	19/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD1/19	19/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Envirolab	Pit 61 0.0-0.1	19/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD2/19	19/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Envirolab	Pit 51 0.5-0.6	19/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	DB3/19	19/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Envirolab	Pit 22 0.0-0.1	20/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD1/20	20/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Difference					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Douglas Partners
Geotechnics | Environment | Groundwater

Lab	Sample ID	Date Sampled	Media	Units	BTEX				Phenol	OCPs									OPP	PCB
					Benzene	Toluene	Ethylbenzene	xylene	Phenol	DDT +DDD +DDE	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Total OCPs	Total	Total
Envirolab	Pit 40 0.0-0.1	22/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Envirolab	BD1/22	22/06/2018	soil	mg/kg	<PQL	<PQL	<PQL	<PQL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Difference					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA/NT - not applicable, not tested

Douglas Partners
Geotechnics / Environment / Groundwater

The calculated RPD values were within the acceptable range of ± 30 for inorganic analytes and± 50% for organics with the exception of the ones in bold. However, these are not considered to be significant because:

- Most of the recorded concentrations being at/ close to the practical quantitation limit;
- The majority of RPDs within a replicate pair being within the acceptable limits, however, where the RPDs were outside of the limits, both the primary and duplicate sample results were well below the site assessment criteria.
- All other QA/QC parameters met the DQIs.

Overall, the intra-laboratory replicate comparisons indicate that the sampling techniques were generally consistent and repeatable.

Q3. Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQIs):

- Completeness – a measure of the amount of usable data from a data collection activity;
- Comparability – the confidence (qualitative) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness – the confidence (qualitative) of data representativeness of media present on-site;
- Precision – a measure of variability or reproducibility of data; and
- Accuracy – a measure of closeness of the data to the 'true' value.

The DQIs were assessed as outlined in the following Table Q5.

Table Q5: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Planned targeted and grid locations sampled;
	Preparation of field logs, sample location plan and chain of custody (COC) records;
	Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the chain of custody;
	Samples analysed for contaminants of potential concern (COPC) identified in the preliminary site investigation stage of the assessment
	Completion of COC documentation;
	NATA endorsed laboratory certificate provided by the laboratory;
	Satisfactory frequency and results for field and laboratory QC samples as

Douglas Partners
Geotechnics / Environment / Groundwater

Data Quality Indicator	Method(s) of Achievement
	discussed in Section Q2.
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project; Works undertaken by appropriately experienced and trained DP environmental scientist / engineer; Use of NATA registered laboratories, with test methods the same or similar between laboratories; Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled; Spatial and temporal distribution of sample locations; Sample numbers recovered and analysed are considered to be representative of the target media and complying with DQOs; Samples were extracted and analysed within holding times; Samples were analysed in accordance with the analysis request.
Precision	Acceptable RPD between original samples and replicates; Satisfactory results for all other field and laboratory QC samples.
Accuracy	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQIs have been complied with. As such, it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

Appendix H

Laboratory Certificates of Analysis and Chain of Custody Documentation

175

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE - DSI
Project No: 45162.12 DP Order No: 121926
DP Contact Person: Peter Storey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	CRM60 6A			CRM60 3							TCLP	Notes
PIT 19 0.5-0.6	20/6	S	1	X	X	X	X											
PIT 22 0.0-0.1			2				X											
PIT 22 1.0-1.1			3							X								
PIT 23 0.5-0.6			4				X											
PIT 24 0.0-0.1			5				X											
PIT 24 0.5-0.6			6							X								
PIT 25 0.0-0.1			7				X											
PIT 26 0.0-0.1			8				X											
PIT 24 0.5-0.6			9							X								
PIT 27 0.0-0.1			10				X											
PIT 28 0.0-0.1			11				X											
PIT 29 1.0-1.1			12							X								
PQL (S)		mg/kg																
PQL (W)		mg/L																

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 194568
Date Received: 22/6/18
Time Received: 10:30
Received By: MT
Temp: Cool/Ambient 14.0
Cooling: Ice/Ice Pack
Security: Intact/Broken/None

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished: 21/6/18
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature: MT
Date: 22/6/18 Lab Ref: 194568

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

285

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE - DSI
Project No: 45682.12 DP Order No: 121925
DP Contact Person: Peter Storey
Prior Storage: esky / (fridge) shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A	Combo 3	TCLP	Notes
PS 29 0.0-0.1	20/6/18	S	13				X			
PS 30 0.0-0.1			14				X			
PS 30 1.0-1.1			15					X		
PS 31 0.5-0.6	(0-0.1)		16				X			
PS 31 1.0-1.1			17					X		
PS 32 0.5-0.6			18				X			
PS 33 0.0-0.1			19				X			
PS 33 1.0-1.1			20					X		
PS 51 0.5-0.6	19/6/18		21				X			
PS 52 0.5-0.6			22				X			
PS 52 1.5-1.6			23					X		
PS 53 0.5-0.6			24				X			
PQL (S)		mg/kg								
PQL (W)		mg/L								

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Ph Zn Hg Ni Mn Fe
Date relinquished: 21/6/18
Total number of samples in container:
Results required by:
TAT (Circle): (Standard) 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature: ...
Date: 22/6/18 Lab Ref 194568

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

3 of 5

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE – DSI
Project No: 43162.12 DP Order No: 121965
DP Contact Person: Peter Harvey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A		Combo 3						TCLP	Notes
PIT 54 0.5-0.6	19/6/18	S	25				X									
PIT 55 0.0-0.1	"	"	26				X									
PIT 56 0.5-0.6	"	"	27				X									
PIT 56 1.0-1.1	"	"	28						X							
PIT 57 0.5-0.6	20/6/18	"	29				X									
PIT 57 1.0-1.1	"	"	30						X							
PIT 57 2.2-2.3	"	"	31						X							
PIT 58 0.0-0.1	"	"	32				X									
PIT 59 0.5-0.6	19/6/18	"	33				X									
PIT 60 0.0-0.1	20/6/18	"	34				X									
PIT 61 0.5-0.6	19/6/18	"	35				X									
PIT 62 0.0-0.1	"	"	36				X									
PQL (S)		mg/kg														
PQL (W)		mg/L														

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished: 21/6/18
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature: MT
Date: 22/6/18 Lab Ref: 124568

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

485

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE - DSI
Project No: 44467.12 DP Order No: 121926
DP Contact Person: Peter Harvey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A	Combo 3	TCLP	Notes
PIT 63 0.0-0.1	18/6/18	S	37				X			
PIT 64 0.5-0.6			38				X			
PIT 65 0.3-0.6			39				X			
PIT 66 0.5-0.6			40	X	X	X	X			
PIT 67 0.0-0.1	19/6/18		41				X			
PIT 68 0.0-0.1	18/6/18		42				X			
PIT 69 0.5-0.6	19/6/18		43				X			
PIT 70 0.0-0.1			44				X			
PIT 70 0.5-0.6			45					X		
PIT 71 0.3-0.6			46				X			
PIT 72 0.5-0.6			47				X			
PIT 73 0.0-0.1			48				X			
PQL (S)		mg/kg								
PQL (W)		mg/L								

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished: 21/6/18
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature: MT
Date: 22/6/18 Lab Ref: 194568

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

575

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE – DSI
Project No: 43152.17 DP Order No: 121926
DP Contact Person: Peter Young
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A	Combo 3	VTPH/BTEX	TCLP	Notes
BH74 0.0-0.1	19/6/18	S	49				X				
BH75 0.5-0.6	19/6/18		50				X				
BH76 0.0-0.1			51				X				
BH76 1.0-1.1			52					X			
BH77 0.5-0.6			53	X	X	X	X				
BD1-18	18/6/18		54								
BD1-19	19/6/18		55				X				
BD2-19	19/6/18		56				X				
BD3-19	19/6/18		57				X				
BD1-20	20/6/18		58				X				
TB			59						X		
TS			60						X		
PQL (S)		mg/kg									
PQL (W)		mg/L									

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished: 21/6/18
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature: MT
Date: 22/6/18 Lab Ref: 194868

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

Extra BD2 20/6/18 61

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Canberra
Attention	Peter Storey

Sample Login Details	
Your reference	46162.12, North Tralee DSI
Envirolab Reference	194568
Date Sample Received	22/06/2018
Date Instructions Received	22/06/2018
Date Results Expected to be Reported	29/06/2018

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	60 soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	14.0
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	TRH(C6-C10/BTEX) in Soil	TRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Mois. (Dry) - Soil	Clay 90-120g	CEC	On Hold
Pit19-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Pit22-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit22-1.0-1.1	✓	✓	✓				✓					
Pit23-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit24-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit24-0.5-0.6	✓	✓	✓				✓					
Pit25-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit26-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit26-0.5-0.6	✓	✓	✓				✓					
Pit27-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit28-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit28-1.0-1.1	✓	✓	✓				✓					
Pit29-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit30-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit30-1.0-1.1	✓	✓	✓				✓					
Pit31-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit31-1.0-1.1	✓	✓	✓				✓					
Pit32-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit33-0.-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit33-1.0-1.1	✓	✓	✓				✓					
Pit51-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit52-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit52-1.5-1.6	✓	✓	✓				✓					
Pit53-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit54-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit55-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit56-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit56-1.0-1.1	✓	✓	✓				✓					
Pit57-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit57-1.0-1.1	✓	✓	✓				✓					
Pit57-2.2-2.3	✓	✓	✓				✓					
Pit58-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	TRH/BTEX/Chlorinated Hydrocarbons in Soil	eTPH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Moisture Set	Clay Soil (20g)	CEC	On Hold
Pit59-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit60-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit61-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit62-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit63-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit64-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit65-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit66-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Pit67-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit68-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit69-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit70-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit70-0.5-0.6	✓	✓	✓				✓					
Pit71-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit72-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit73-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit74-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit75-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓				
Pit76-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit76-2.0-0.1	✓	✓	✓				✓					
Pit77-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BD1/18												✓
BD1/19	✓	✓	✓	✓	✓	✓	✓	✓				
BD2/19	✓	✓	✓	✓	✓	✓	✓	✓				
BD3/19	✓	✓	✓	✓	✓	✓	✓	✓				
BD1/20	✓	✓	✓	✓	✓	✓	✓	✓				
TB	✓											
TS	✓											

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 194568

Client Details

Client	Douglas Partners Canberra
Attention	Peter Storey
Address	PO Box 1487, Fyshwick, ACT, 2609

Sample Details

Your Reference	**46162.12, North Tralee DSI**
Number of Samples	60 soil
Date samples received	22/06/2018
Date completed instructions received	22/06/2018

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	29/06/2018
Date of Issue	29/06/2018

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Jeremy Faircloth, Organics Supervisor
Ken Nguyen, Senior Chemist
Lucy Zhu, Asbsestos Analyst
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-1	194568-2	194568-3	194568-4	194568-5
Your Reference	UNITS	Pit19	Pit22	Pit22	Pit23	Pit24
Depth		0.5-0.6	0.0-0.1	1.0-1.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	89	90	90	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-6	194568-7	194568-8	194568-9	194568-10
Your Reference	UNITS	Pit24	Pit25	Pit26	Pit26	Pit27
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	93	92	85	89

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-11	194568-12	194568-13	194568-14	194568-15
Your Reference	UNITS	Pit28	Pit28	Pit29	Pit30	Pit30
Depth		0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	85	91	88	80

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-16	194568-17	194568-18	194568-19	194568-20
Your Reference	UNITS	Pit31	Pit31	Pit32	Pit33	Pit33
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	109	94	92	93

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-21	194568-22	194568-23	194568-24	194568-25
Your Reference	UNITS	Pit51	Pit52	Pit52	Pit53	Pit54
Depth		0.5-0.6	0.5-0.6	1.5-1.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	94	91	87	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-26	194568-27	194568-28	194568-29	194568-30
Your Reference	UNITS	Pit55	Pit56	Pit56	Pit57	Pit57
Depth		0.0-0.1	0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	90	91	93	93

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-31	194568-32	194568-33	194568-34	194568-35
Your Reference	UNITS	Pit57	Pit58	Pit59	Pit60	Pit61
Depth		2.2-2.3	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	19/06/2018	20/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	89	90	93	88

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-36	194568-37	194568-38	194568-39	194568-40
Your Reference	UNITS	Pit62	Pit63	Pit64	Pit65	Pit66
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	93	94	94	91

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-41	194568-42	194568-43	194568-44	194568-45
Your Reference	UNITS	Pit67	Pit68	Pit69	Pit70	Pit70
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	86	84	91	89

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-46	194568-47	194568-48	194568-49	194568-50
Your Reference	UNITS	Pit71	Pit72	Pit73	Pit74	Pit75
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	88	108	116	114

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194568-51	194568-52	194568-53	194568-55	194568-56
Your Reference	UNITS	Pit76	Pit79	Pit77	BD1/19	BD2/19
Depth		0.0-0.1	2.0-0.1	0.5-0.6	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	109	100	111	104	111

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		194568-57	194568-58	194568-59	194568-60
Your Reference	UNITS	BD3/19	BD1/20	TB	TS
Depth		-	-	-	-
Date Sampled		19/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	---
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	---
Benzene	mg/kg	<0.2	<0.2	<0.2	99%
Toluene	mg/kg	<0.5	<0.5	<0.5	99%
Ethylbenzene	mg/kg	<1	<1	<1	99%
m+p-xylene	mg/kg	<2	<2	<2	99%
o-Xylene	mg/kg	<1	<1	<1	99%
naphthalene	mg/kg	<1	<1	<1	---
Total +ve Xylenes	mg/kg	<1	<1	<1	
Surrogate aaa-Trifluorotoluene	%	109	124	111	102

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194568-1	194568-2	194568-3	194568-4	194568-5
Your Reference	UNITS	Pit19	Pit22	Pit22	Pit23	Pit24
Depth		0.5-0.6	0.0-0.1	1.0-1.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{36}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	100	107	98	97	99

svTRH (C10-C40) in Soil						
Our Reference		194568-6	194568-7	194568-8	194568-9	194568-10
Your Reference	UNITS	Pit24	Pit25	Pit26	Pit26	Pit27
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	110	<100	<100	<100
TRH >C_{10}-C_{36}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	120	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	120	<50	<50	<50
Surrogate o-Terphenyl	%	96	98	98	99	98

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194568-11	194568-12	194568-13	194568-14	194568-15
Your Reference	UNITS	Pit28	Pit28	Pit29	Pit30	Pit30
Depth		0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	120	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	120	<50	<50	<50	<50
Surrogate o-Terphenyl	%	98	97	99	98	96

svTRH (C10-C40) in Soil						
Our Reference		194568-16	194568-17	194568-18	194568-19	194568-20
Your Reference	UNITS	Pit31	Pit31	Pit32	Pit33	Pit33
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	98	98	98	100	97

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194568-21	194568-22	194568-23	194568-24	194568-25
Your Reference	UNITS	Pit51	Pit52	Pit52	Pit53	Pit54
Depth		0.5-0.6	0.5-0.6	1.5-1.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	97	95	93	98	97

svTRH (C10-C40) in Soil						
Our Reference		194568-26	194568-27	194568-28	194568-29	194568-30
Your Reference	UNITS	Pit55	Pit56	Pit56	Pit57	Pit57
Depth		0.0-0.1	0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	96	95	94	97	94

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194568-31	194568-32	194568-33	194568-34	194568-35
Your Reference	UNITS	Pit57	Pit58	Pit59	Pit60	Pit61
Depth		2.2-2.3	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	19/06/2018	20/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	94	93	94	95	97

svTRH (C10-C40) in Soil						
Our Reference		194568-36	194568-37	194568-38	194568-39	194568-40
Your Reference	UNITS	Pit62	Pit63	Pit64	Pit65	Pit66
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	97	97	96	94	95

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194568-41	194568-42	194568-43	194568-44	194568-45
Your Reference	UNITS	Pit67	Pit68	Pit69	Pit70	Pit70
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	100	94	95	94	95

svTRH (C10-C40) in Soil						
Our Reference		194568-46	194568-47	194568-48	194568-49	194568-50
Your Reference	UNITS	Pit71	Pit72	Pit73	Pit74	Pit75
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	95	94	90	94	95

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194568-51	194568-52	194568-53	194568-55	194568-56
Your Reference	UNITS	Pit76	Pit79	Pit77	BD1/19	BD2/19
Depth		0.0-0.1	2.0-0.1	0.5-0.6	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	94	92	93	96	97

svTRH (C10-C40) in Soil			
Our Reference		194568-57	194568-58
Your Reference	UNITS	BD3/19	BD1/20
Depth		-	-
Date Sampled		19/06/2018	20/06/2018
Type of sample		soil	soil
Date extracted	-	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	96	96

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-1	194568-2	194568-3	194568-4	194568-5
Your Reference	UNITS	Pit19	Pit22	Pit22	Pit23	Pit24
Depth		0.5-0.6	0.0-0.1	1.0-1.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	83	90	86	90	88

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-6	194568-7	194568-8	194568-9	194568-10
Your Reference	UNITS	Pit24	Pit25	Pit26	Pit26	Pit27
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	90	91	91	90	91

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-11	194568-12	194568-13	194568-14	194568-15
Your Reference	UNITS	Pit28	Pit28	Pit29	Pit30	Pit30
Depth		0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	93	91	93	89	85

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-16	194568-17	194568-18	194568-19	194568-20
Your Reference	UNITS	Pit31	Pit31	Pit32	Pit33	Pit33
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	96	91	91	91	88

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-21	194568-22	194568-23	194568-24	194568-25
Your Reference	UNITS	Pit51	Pit52	Pit52	Pit53	Pit54
Depth		0.5-0.6	0.5-0.6	1.5-1.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	93	92	90	88	85

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-26	194568-27	194568-28	194568-29	194568-30
Your Reference	UNITS	Pit55	Pit56	Pit56	Pit57	Pit57
Depth		0.0-0.1	0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	86	83	85	91	84

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-31	194568-32	194568-33	194568-34	194568-35
Your Reference	UNITS	Pit57	Pit58	Pit59	Pit60	Pit61
Depth		2.2-2.3	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	19/06/2018	20/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	90	86	82	85	87

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-36	194568-37	194568-38	194568-39	194568-40
Your Reference	UNITS	Pit62	Pit63	Pit64	Pit65	Pit66
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		18/06/2018	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	87	88	83	81	87

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-41	194568-42	194568-43	194568-44	194568-45
Your Reference	UNITS	Pit67	Pit68	Pit69	Pit70	Pit70
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	107	102	86	104	93

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-46	194568-47	194568-48	194568-49	194568-50
Your Reference	UNITS	Pit71	Pit72	Pit73	Pit74	Pit75
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	100	101	98	104	88

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194568-51	194568-52	194568-53	194568-55	194568-56
Your Reference	UNITS	Pit76	Pit78	Pit77	BD1/19	BD2/19
Depth		0.0-0.1	2.0-0.1	0.5-0.6	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	97	94	87	97	89

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil			
Our Reference		194568-57	194568-58
Your Reference	UNITS	BD3/19	BD1/20
Depth		-	-
Date Sampled		19/06/2018	20/06/2018
Type of sample		soil	soil
Date extracted	-	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	104

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-1	194568-2	194568-4	194568-5	194568-7
Your Reference	UNITS	Pit19	Pit22	Pit23	Pit24	Pit25
Depth		0.5-0.6	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	119	119	123	121	120

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-8	194568-10	194568-11	194568-13	194568-14
Your Reference	UNITS	Pit26	Pit27	Pit28	Pit29	Pit30
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	122	122	122	122	120

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-16	194568-18	194568-19	194568-21	194568-22
Your Reference	UNITS	Pit31	Pit32	Pit33	Pit51	Pit52
Depth		0.5-0.6	0.5-0.6	0 -0.1	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	20/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	120	129	120	118	118

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-24	194568-25	194568-26	194568-27	194568-29
Your Reference	UNITS	Pit53	Pit54	Pit55	Pit56	Pit57
Depth		0.5-0.6	0.5-0.6	0.0-0.1	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	117	119	120	114	116

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-32	194568-33	194568-34	194568-35	194568-36
Your Reference	UNITS	Pit58	Pit59	Pit60	Pit61	Pit62
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	19/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	114	116	117	117

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-37	194568-38	194568-39	194568-40	194568-41
Your Reference	UNITS	Pit63	Pit64	Pit65	Pit66	Pit67
Depth		0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6	0.0-0.1
Date Sampled		18/06/2018	18/06/2018	18/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	116	115	114	115	112

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-42	194568-43	194568-44	194568-46	194568-47
Your Reference	UNITS	Pit68	Pit69	Pit70	Pit71	Pit72
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		18/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	112	113	119	115	116

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194568-48	194568-49	194568-50	194568-51	194568-53
Your Reference	UNITS	Pit73	Pit74	Pit75	Pit76	Pit77
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	115	115	116	117	117

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil					
Our Reference		194568-55	194568-56	194568-57	194568-58
Your Reference	UNITS	BD1/19	BD2/19	BD3/19	BD1/20
Depth		-	-	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	116	115	117	118

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194568-1	194568-2	194568-4	194568-5	194568-7
Your Reference	UNITS	Pit19	Pit22	Pit23	Pit24	Pit25
Depth		0.5-0.6	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	119	119	123	121	120

Organophosphorus Pesticides						
Our Reference		194568-8	194568-10	194568-11	194568-13	194568-14
Your Reference	UNITS	Pit26	Pit27	Pit28	Pit29	Pit30
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	122	122	122	122	120

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194568-16	194568-18	194568-19	194568-21	194568-22
Your Reference	UNITS	Pit31	Pit32	Pit33	Pit51	Pit52
Depth		0.5-0.6	0.5-0.6	0 -0.1	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	20/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	120	129	120	118	118

Organophosphorus Pesticides						
Our Reference		194568-24	194568-25	194568-26	194568-27	194568-28
Your Reference	UNITS	Pit53	Pit54	Pit55	Pit56	Pit57
Depth		0.5-0.6	0.5-0.6	0.0-0.1	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	117	119	120	114	116

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194568-32	194568-33	194568-34	194568-35	194568-36
Your Reference	UNITS	Pit58	Pit59	Pit60	Pit61	Pit62
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	19/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	114	114	116	117	117

Organophosphorus Pesticides						
Our Reference		194568-37	194568-38	194568-39	194568-40	194568-41
Your Reference	UNITS	Pit63	Pit64	Pit65	Pit66	Pit67
Depth		0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6	0.0-0.1
Date Sampled		18/06/2018	18/06/2018	18/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	116	115	114	115	112

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194568-42	194568-43	194568-44	194568-46	194568-47
Your Reference	UNITS	Pit68	Pit69	Pit70	Pit71	Pit72
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		18/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	112	113	119	115	116

Organophosphorus Pesticides						
Our Reference		194568-48	194568-49	194568-50	194568-51	194568-53
Your Reference	UNITS	Pit73	Pit74	Pit75	Pit76	Pit77
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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	%	115	115	116	117	117

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides					
Our Reference		194568-55	194568-56	194568-57	194568-58
Your Reference	UNITS	BD1/19	BD2/19	BD3/19	BD1/20
Depth		-	-	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	116	115	117	118

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194568-1	194568-2	194568-4	194568-5	194568-7
Your Reference	UNITS	Pit19	Pit22	Pit23	Pit24	Pit25
Depth		0.5-0.6	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	119	119	123	121	120

PCBs in Soil						
Our Reference		194568-8	194568-10	194568-11	194568-13	194568-14
Your Reference	UNITS	Pit26	Pit27	Pit28	Pit29	Pit30
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	122	122	122	122	120

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194568-16	194568-18	194568-19	194568-21	194568-22
Your Reference	UNITS	Pit31	Pit32	Pit33	Pit51	Pit52
Depth		0.5-0.6	0.5-0.6	0-0.1	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	20/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	120	129	120	118	118

PCBs in Soil						
Our Reference		194568-24	194568-25	194568-26	194568-27	194568-29
Your Reference	UNITS	Pit53	Pit54	Pit55	Pit56	Pit57
Depth		0.5-0.6	0.5-0.6	0.0-0.1	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	117	119	120	114	116

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194568-32	194568-33	194568-34	194568-35	194568-36
Your Reference	UNITS	Pit58	Pit59	Pit60	Pit61	Pit62
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	19/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	114	114	116	117	117

PCBs in Soil						
Our Reference		194568-37	194568-38	194568-39	194568-40	194568-41
Your Reference	UNITS	Pit63	Pit64	Pit65	Pit66	Pit67
Depth		0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6	0.0-0.1
Date Sampled		18/06/2018	18/06/2018	18/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	116	115	114	115	112

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194568-42	194568-43	194568-44	194568-46	194568-47
Your Reference	UNITS	Pit66	Pit69	Pit70	Pit71	Pit72
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		18/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	112	113	119	115	116

PCBs in Soil						
Our Reference		194568-48	194568-49	194568-50	194568-51	194568-53
Your Reference	UNITS	Pit73	Pit74	Pit75	Pit76	Pit77
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	115	115	116	117	117

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil					
Our Reference		194568-55	194568-56	194568-57	194568-58
Your Reference	UNITS	BD1/19	BD2/19	BD3/19	BD1/20
Depth		-	-	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil
Date extracted	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	116	115	117	118

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194568-1	194568-2	194568-3	194568-4	194568-5
Your Reference	UNITS	Pit19	Pit22	Pit22	Pit23	Pit24
Depth		0.5-0.6	0.0-0.1	1.0-1.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	9	8	7	8
Copper	mg/kg	2	6	4	3	3
Lead	mg/kg	10	18	11	10	8
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	4	4	3	4
Zinc	mg/kg	11	33	13	14	20

Acid Extractable metals in soil						
Our Reference		194568-6	194568-7	194568-8	194568-9	194568-10
Your Reference	UNITS	Pit24	Pit25	Pit26	Pit26	Pit27
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	8	4	7	6
Copper	mg/kg	5	4	2	4	4
Lead	mg/kg	21	12	10	18	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	4	2	3	2
Zinc	mg/kg	19	23	10	14	15

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194568-11	194568-12	194568-13	194568-14	194568-15
Your Reference	UNITS	Pit28	Pit28	Pit29	Pit30	Pit30
Depth		0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	8	10	9	11
Copper	mg/kg	3	3	3	6	6
Lead	mg/kg	11	21	7	13	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	4	6	6	5
Zinc	mg/kg	17	8	21	21	25

Acid Extractable metals in soil						
Our Reference		194568-16	194568-17	194568-18	194568-19	194568-20
Your Reference	UNITS	Pit31	Pit31	Pit32	Pit33	Pit33
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	8	9	8	7
Copper	mg/kg	4	5	3	3	2
Lead	mg/kg	13	12	10	12	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	4	3	4	2
Zinc	mg/kg	21	17	8	17	8

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194568-21	194568-22	194568-23	194568-24	194568-25
Your Reference	UNITS	Pit51	Pit52	Pit52	Pit53	Pit54
Depth		0.5-0.6	0.5-0.6	1.5-1.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	10	6	9	8
Copper	mg/kg	8	7	5	12	4
Lead	mg/kg	24	24	16	16	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	7	4	5	3
Zinc	mg/kg	63	86	140	36	17

Acid Extractable metals in soil						
Our Reference		194568-26	194568-27	194568-28	194568-29	194568-30
Your Reference	UNITS	Pit55	Pit56	Pit56	Pit57	Pit57
Depth		0.0-0.1	0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	5	5	6	7
Copper	mg/kg	12	7	5	6	7
Lead	mg/kg	20	13	11	210	25
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	13	4	3	3	5
Zinc	mg/kg	32	32	21	140	170

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194568-31	194568-32	194568-33	194568-34	194568-35
Your Reference	UNITS	Pit57	Pit58	Pit59	Pit60	Pit61
Depth		2.2-2.3	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	19/06/2018	20/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	7	8	7	37
Copper	mg/kg	7	6	9	6	6
Lead	mg/kg	13	16	16	15	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	4	6	4	5
Zinc	mg/kg	37	27	39	34	12

Acid Extractable metals in soil						
Our Reference		194568-36	194568-37	194568-38	194568-39	194568-40
Your Reference	UNITS	Pit62	Pit63	Pit64	Pit65	Pit66
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	30	6	5	6	8
Copper	mg/kg	5	4	3	4	8
Lead	mg/kg	16	13	13	13	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	3	3	3	5
Zinc	mg/kg	8	24	23	24	56

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194568-41	194568-42	194568-43	194568-44	194568-45
Your Reference	UNITS	Pit67	Pit68	Pit69	Pit70	Pit70
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	27	7	20	9	6
Copper	mg/kg	6	6	10	7	4
Lead	mg/kg	19	16	12	18	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	4	9	5	3
Zinc	mg/kg	9	34	18	35	22

Acid Extractable metals in soil						
Our Reference		194568-46	194568-47	194568-48	194568-49	194568-50
Your Reference	UNITS	Pit71	Pit72	Pit73	Pit74	Pit75
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	8	6	5	12
Copper	mg/kg	6	6	3	3	7
Lead	mg/kg	13	19	10	10	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	5	2	2	5
Zinc	mg/kg	12	23	12	10	18

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194568-51	194568-52	194568-53	194568-55	194568-56
Your Reference	UNITS	Pit76	Pit78	Pit77	BD1/19	BD2/19
Depth		0.0-0.1	2.0-0.1	0.5-0.6	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	15	6	45	16
Copper	mg/kg	5	7	3	6	6
Lead	mg/kg	15	13	12	19	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	7	3	5	5
Zinc	mg/kg	17	25	15	10	12

Acid Extractable metals in soil			
Our Reference		194568-57	194568-58
Your Reference	UNITS	BD3/19	BD1/20
Depth		-	-
Date Sampled		19/06/2018	20/06/2018
Type of sample		soil	soil
Date prepared	-	25/06/2018	25/06/2018
Date analysed	-	25/06/2018	25/06/2018
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	7	8
Copper	mg/kg	6	5
Lead	mg/kg	23	16
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	6	4
Zinc	mg/kg	38	33

Client Reference: 46162.12, North Tralee DSI

Moisture						
Our Reference		194568-1	194568-2	194568-3	194568-4	194568-5
Your Reference	UNITS	Pit19	Pit22	Pit22	Pit23	Pit24
Depth		0.5-0.6	0.0-0.1	1.0-1.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	5.8	5.8	8.5	5.3	4.7

Moisture						
Our Reference		194568-6	194568-7	194568-8	194568-9	194568-10
Your Reference	UNITS	Pit24	Pit25	Pit26	Pit26	Pit27
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	14	6.7	5.3	10	5.7

Moisture						
Our Reference		194568-11	194568-12	194568-13	194568-14	194568-15
Your Reference	UNITS	Pit28	Pit28	Pit29	Pit30	Pit30
Depth		0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	5.0	7.6	3.4	8.6	16

Moisture						
Our Reference		194568-16	194568-17	194568-18	194568-19	194568-20
Your Reference	UNITS	Pit31	Pit31	Pit32	Pit33	Pit33
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.-0.1	1.0-1.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	4.7	6.5	7.1	4.7	5.3

Client Reference: 46162.12, North Tralee DSI

Moisture						
Our Reference		194568-21	194568-22	194568-23	194568-24	194568-25
Your Reference	UNITS	Pit51	Pit52	Pit52	Pit53	Pit54
Depth		0.5-0.6	0.5-0.6	1.5-1.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	7.7	6.2	11	6.5	3.9

Moisture						
Our Reference		194568-26	194568-27	194568-28	194568-29	194568-30
Your Reference	UNITS	Pit55	Pit56	Pit56	Pit57	Pit57
Depth		0.0-0.1	0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	13	8.7	8.1	6.3	8.0

Moisture						
Our Reference		194568-31	194568-32	194568-33	194568-34	194568-35
Your Reference	UNITS	Pit57	Pit58	Pit59	Pit60	Pit61
Depth		2.2-2.3	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	19/06/2018	20/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	13	13	10	7.2	7.1

Moisture						
Our Reference		194568-36	194568-37	194568-38	194568-39	194568-40
Your Reference	UNITS	Pit62	Pit63	Pit64	Pit65	Pit66
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	5.4	6.9	7.0	6.9	10

Client Reference: 46162.12, North Tralee DSI

Moisture						
Our Reference		194568-41	194568-42	194568-43	194568-44	194568-45
Your Reference	UNITS	Pit67	Pit68	Pit69	Pit70	Pit70
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	6.0	11	16	9.3	5.6

Moisture						
Our Reference		194568-46	194568-47	194568-48	194568-49	194568-50
Your Reference	UNITS	Pit71	Pit72	Pit73	Pit74	Pit75
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	5.7	9.6	7.8	7.8	8.6

Moisture						
Our Reference		194568-51	194568-52	194568-53	194568-55	194568-56
Your Reference	UNITS	Pit76	Pit76	Pit77	BD1/19	BD2/19
Depth		0.0-0.1	2.0-0.1	0.5-0.6	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Moisture	%	5.4	12	4.2	7.0	5.6

Moisture			
Our Reference		194568-57	194568-58
Your Reference	UNITS	BD3/19	BD1/20
Depth		-	-
Date Sampled		19/06/2018	20/06/2018
Type of sample		soil	soil
Date prepared	-	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018
Moisture	%	7.8	6.2

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194568-1	194568-2	194568-4	194568-5	194568-7
Your Reference	UNITS	Pit19	Pit22	Pit23	Pit24	Pit25
Depth		0.5-0.6	0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 35g	Approx. 30g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194568-8	194568-10	194568-11	194568-13	194568-14
Your Reference	UNITS	Pit26	Pit27	Pit28	Pit29	Pit30
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 40g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		194568-16	194568-18	194568-19	194568-21	194568-22
Your Reference	UNITS	Pit31	Pit32	Pit33	Pit51	Pit52
Depth		0.5-0.6	0.5-0.6	0 -0.1	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	20/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 35g	Approx. 35g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194568-24	194568-25	194568-26	194568-27	194568-29
Your Reference	UNITS	Pit53	Pit54	Pit55	Pit56	Pit57
Depth		0.5-0.6	0.5-0.6	0.0-0.1	0.5-0.6	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194568-32	194568-33	194568-34	194568-35	194568-36
Your Reference	UNITS	Pit58	Pit59	Pit60	Pit61	Pit62
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		20/06/2018	19/06/2018	20/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 30g	Approx. 35g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		194568-37	194568-38	194568-39	194568-40	194568-41
Your Reference	UNITS	Pit63	Pit64	Pit65	Pit66	Pit67
Depth		0.0-0.1	0.5-0.6	0.5-0.6	0.5-0.6	0.0-0.1
Date Sampled		18/06/2018	18/06/2018	18/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194568-42	194568-43	194568-44	194568-45	194568-47
Your Reference	UNITS	Pit68	Pit69	Pit70	Pit71	Pit72
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6
Date Sampled		18/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194568-48	194568-49	194568-50	194568-51	194568-53
Your Reference	UNITS	Pit73	Pit74	Pit75	Pit76	Pit77
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	0.5-0.6
Date Sampled		19/06/2018	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 45g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils					
Our Reference		194568-55	194568-56	194568-57	194568-58
Your Reference	UNITS	BD1/19	BD2/19	BD3/19	BD1/20
Depth		-	-	-	-
Date Sampled		19/06/2018	19/06/2018	19/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 35g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Misc Inorg - Soil				
Our Reference		194568-1	194568-40	194568-53
Your Reference	UNITS	Pit19	Pit66	Pit77
Depth		0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil
Date prepared	-	26/06/2018	26/06/2018	26/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018
pH 1:5 soil:water	pH Units	9.7	8.2	8.3

Client Reference: 46162.12, North Tralee DSI

Clay 50-120g				
Our Reference		194568-1	194568-40	194568-53
Your Reference	UNITS	Pit19	Pit66	Pit77
Depth		0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil
Date prepared	-	25/06/2018	25/06/2018	25/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018
Clay in soils <2µm	% (w/w)	18	25	14

Client Reference: 46162.12, North Tralee DSI

CEC				
Our Reference		194568-1	194568-40	194568-83
Your Reference	UNITS	Pit19	Pit66	Pit77
Depth		0.5-0.6	0.5-0.6	0.5-0.6
Date Sampled		20/06/2018	18/06/2018	19/06/2018
Type of sample		soil	soil	soil
Date prepared	-	26/06/2018	26/06/2018	26/06/2018
Date analysed	-	26/06/2018	26/06/2018	26/06/2018
Exchangeable Ca	meq/100g	2.1	12	3.4
Exchangeable K	meq/100g	0.2	0.6	0.3
Exchangeable Mg	meq/100g	0.76	2.4	0.82
Exchangeable Na	meq/100g	1.2	<0.1	<0.1
Cation Exchange Capacity	meq/100g	4.3	15	4.5

Client Reference: 46162.12, North Tralee DSI

Method ID	Methodology Summary
AS1289.3.6.3	Determination Particle Size Analysis using AS1289.3.6.3 and AS1289.3.6.1 and in house method INORG-107. Clay fraction at <2µm reported.
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.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
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-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. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Client Reference: 46162.12, North Tralee DSI

Method ID	Methodology Summary
Org-012	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. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. 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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
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-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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date extracted	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			26/06/2018	1	26/06/2018	26/06/2018		26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	92	89
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	92	99
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	92	103
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	85	95
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	89	93
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	97	103
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	88	92
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016	90	1	92	89	3	86	88

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194568-22
Date extracted	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	26/06/2018	26/06/2018		26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	25	Org-016		11	<25	<25	0	98	106
TRH C_6 - C_{10}	mg/kg	25	Org-016		11	<25	<25	0	98	106
Benzene	mg/kg	0.2	Org-016		11	<0.2	<0.2	0	100	108
Toluene	mg/kg	0.5	Org-016		11	<0.5	<0.5	0	92	100
Ethylbenzene	mg/kg	1	Org-016		11	<1	<1	0	93	100
m+p-xylene	mg/kg	2	Org-016		11	<2	<2	0	102	110
o-Xylene	mg/kg	1	Org-016		11	<1	<1	0	92	99
naphthalene	mg/kg	1	Org-014		11	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		11	91	88	3	93	97

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date extracted	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	26/06/2018	26/06/2018		26/06/2018	26/06/2018
TRH C_6 - C_9	mg/kg	25	Org-016		21	<25	<25	0	100	93
TRH C_6 - C_{10}	mg/kg	25	Org-016		21	<25	<25	0	100	93
Benzene	mg/kg	0.2	Org-016		21	<0.2	<0.2	0	103	86
Toluene	mg/kg	0.5	Org-016		21	<0.5	<0.5	0	94	87
Ethylbenzene	mg/kg	1	Org-016		21	<1	<1	0	95	88
m+p-xylene	mg/kg	2	Org-016		21	<2	<2	0	104	97
o-Xylene	mg/kg	1	Org-016		21	<1	<1	0	94	87
naphthalene	mg/kg	1	Org-014		21	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		21	92	92	0	96	84

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				31	25/06/2018	25/06/2018			
Date analysed	-				31	26/06/2018	26/06/2018			
TRH C_6 - C_9	mg/kg	25	Org-016		31	<25	<25	0		
TRH C_6 - C_{10}	mg/kg	25	Org-016		31	<25	<25	0		
Benzene	mg/kg	0.2	Org-016		31	<0.2	<0.2	0		
Toluene	mg/kg	0.5	Org-016		31	<0.5	<0.5	0		
Ethylbenzene	mg/kg	1	Org-016		31	<1	<1	0		
m+p-xylene	mg/kg	2	Org-016		31	<2	<2	0		
o-Xylene	mg/kg	1	Org-016		31	<1	<1	0		
naphthalene	mg/kg	1	Org-014		31	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		31	93	93	0		

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	26/06/2018	26/06/2018			
TRH C_6 - C_9	mg/kg	25	Org-016		41	<25	<25	0		
TRH C_6 - C_{10}	mg/kg	25	Org-016		41	<25	<25	0		
Benzene	mg/kg	0.2	Org-016		41	<0.2	<0.2	0		
Toluene	mg/kg	0.5	Org-016		41	<0.5	<0.5	0		
Ethylbenzene	mg/kg	1	Org-016		41	<1	<1	0		
m+p-xylene	mg/kg	2	Org-016		41	<2	<2	0		
o-Xylene	mg/kg	1	Org-016		41	<1	<1	0		
naphthalene	mg/kg	1	Org-014		41	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		41	95	89	7		

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	26/06/2018	26/06/2018			
TRH C_6 - C_9	mg/kg	25	Org-016		51	<25	<25	0		
TRH C_6 - C_{10}	mg/kg	25	Org-016		51	<25	<25	0		
Benzene	mg/kg	0.2	Org-016		51	<0.2	<0.2	0		
Toluene	mg/kg	0.5	Org-016		51	<0.5	<0.5	0		
Ethylbenzene	mg/kg	1	Org-016		51	<1	<1	0		
m+p-xylene	mg/kg	2	Org-016		51	<2	<2	0		
o-Xylene	mg/kg	1	Org-016		51	<1	<1	0		
naphthalene	mg/kg	1	Org-014		51	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		51	109	110	1		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: svTRH (C10-C40) in Soil				Duplicate					Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date extracted	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			26/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	112	100
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	100	86
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	77	71
TRH >C_{10}-C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	112	100
TRH >C_{16}-C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	100	86
TRH >C_{34}-C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	77	71
Surrogate o-Terphenyl	%		Org-003	97	1	100	99	1	115	107

QUALITY CONTROL: svTRH (C10-C40) in Soil				Duplicate					Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194568-22
Date extracted	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	25/06/2018	25/06/2018		25/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003		11	<50	<50	0	117	101
TRH C_{15} - C_{28}	mg/kg	100	Org-003		11	<100	<100	0	110	96
TRH C_{29} - C_{36}	mg/kg	100	Org-003		11	<100	<100	0	77	83
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		11	<50	<50	0	117	101
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		11	<100	<100	0	110	96
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		11	120	<100	18	77	83
Surrogate o-Terphenyl	%		Org-003		11	98	98	2	125	95

QUALITY CONTROL: svTRH (C10-C40) in Soil				Duplicate					Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date extracted	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	26/06/2018	26/06/2018		26/06/2018	26/06/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003		21	<50	<50	0	118	102
TRH C_{15} - C_{28}	mg/kg	100	Org-003		21	<100	<100	0	107	95
TRH C_{29} - C_{36}	mg/kg	100	Org-003		21	<100	<100	0	77	80
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		21	<50	<50	0	118	102
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		21	<100	<100	0	107	95
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		21	<100	<100	0	77	80
Surrogate o-Terphenyl	%		Org-003		21	97	98	1	124	94

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				31	25/06/2018	25/06/2018			
Date analysed	-				31	26/06/2018	26/06/2018			
TRH C_{10} - C_{14}	mg/kg	50	Org-003		31	<50	<50	0		
TRH C_{15} - C_{28}	mg/kg	100	Org-003		31	<100	<100	0		
TRH C_{29} - C_{36}	mg/kg	100	Org-003		31	<100	<100	0		
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		31	<50	<50	0		
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		31	<100	<100	0		
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		31	<100	<100	0		
Surrogate o-Terphenyl	%		Org-003		31	94	94	0		

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	26/06/2018	26/06/2018			
TRH C_{10} - C_{14}	mg/kg	50	Org-003		41	<50	<50	0		
TRH C_{15} - C_{28}	mg/kg	100	Org-003		41	<100	<100	0		
TRH C_{29} - C_{36}	mg/kg	100	Org-003		41	<100	<100	0		
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		41	<50	<50	0		
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		41	<100	<100	0		
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		41	<100	<100	0		
Surrogate o-Terphenyl	%		Org-003		41	100	94	6		

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	26/06/2018	26/06/2018			
TRH C_{10} - C_{14}	mg/kg	50	Org-003		51	<50	<50	0		
TRH C_{15} - C_{28}	mg/kg	100	Org-003		51	<100	<100	0		
TRH C_{29} - C_{36}	mg/kg	100	Org-003		51	<100	<100	0		
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		51	<50	<50	0		
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		51	<100	<100	0		
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		51	<100	<100	0		
Surrogate o-Terphenyl	%		Org-003		51	94	94	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date extracted	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			26/06/2018	1	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	94	92
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	92	91
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	96	93
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	96	94
Pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	102	99
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	94	92
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	<0.05	<0.05	0	115	130
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012	92	1	83	82	1	121	119

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194566-22
Date extracted	-				11	25/06/2018	26/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Naphthalene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	94	96
Acenaphthylene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	93	95
Phenanthrene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	96	97
Anthracene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	98	101
Pyrene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	104	106
Benzo(a)anthracene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	94	94
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		11	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		11	<0.05	<0.05	0	97	82
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		11	93	95	2	123	126

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date extracted	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Naphthalene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	96	92
Acenaphthylene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	97	86
Phenanthrene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	102	95
Anthracene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	99	87
Pyrene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	109	93
Benzo(a)anthracene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	101	94
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		21	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		21	<0.05	<0.05	0	101	84
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		21	93	90	3	127	107

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				31	25/06/2018	25/06/2018			
Date analysed	-				31	26/06/2018	26/06/2018			
Naphthalene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Acenaphthylene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Phenanthrene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Anthracene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Pyrene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Benzo(a)anthracene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		31	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		31	<0.05	<0.05	0		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		31	90	85	6		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	26/06/2018	26/06/2018			
Naphthalene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Acenaphthylene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Phenanthrene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Anthracene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Pyrene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Benzo(a)anthracene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		41	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		41	<0.05	<0.05	0		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		41	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		41	107	85	23		

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	26/06/2018	26/06/2018			
Naphthalene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Acenaphthylene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Phenanthrene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Anthracene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Pyrene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Benzo(a)anthracene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		51	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		51	<0.05	<0.05	0		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		51	97	111	13		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date extracted	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			26/06/2018	1	26/06/2018	26/06/2018		26/06/2018	26/06/2018
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	94	91
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	89	84
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	96	90
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	96	90
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	93	93
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	101	95
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	108	102
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	94	90
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	97	91
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	109	101
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005	114	1	119	117	2	112	117

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194568-22
Date extracted	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	26/06/2018	26/06/2018		26/06/2018	26/06/2018
HCB	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	89	92
gamma-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	85	84
Heptachlor	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	84	84
delta-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	93	93
Heptachlor Epoxide	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	91	94
gamma-Chlordane	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	96	97
Dieldrin	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	104	103
Endrin	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	86	86
pp-DDD	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	91	90
Endosulfan II	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	76	88
Methoxychlor	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005		11	122	122	0	113	115

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date extracted	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	26/06/2018	26/06/2018		26/06/2018	26/06/2018
HCB	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	89	82
gamma-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	87	81
Heptachlor	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	84	82
delta-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	96	88
Heptachlor Epoxide	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	92	90
gamma-Chlordane	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	100	93
Dieldrin	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	106	98
Endrin	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	86	85
pp-DDD	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	92	89
Endosulfan II	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005		21	<0.1	<0.1	0	73	70
Methoxychlor	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005		21	118	119	1	114	107

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	26/06/2018	26/06/2018			
HCB	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
gamma-BHC	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Heptachlor	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
delta-BHC	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Heptachlor Epoxide	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
gamma-Chlordane	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Dieldrin	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Endrin	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
pp-DDD	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Endosulfan II	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Methoxychlor	mg/kg	0.1	Org-005		41	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005		41	112	113	1		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	26/06/2018	26/06/2018			
HCB	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
gamma-BHC	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Heptachlor	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
delta-BHC	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Heptachlor Epoxide	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
gamma-Chlordane	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Dieldrin	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Endrin	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
pp-DDD	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Endosulfan II	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Methoxychlor	mg/kg	0.1	Org-005		51	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005		51	117	117	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date extracted	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			26/06/2018	1	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	95	102
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	98	98
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	98	102
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	101	106
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	94	99
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	109	113
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	105	113
Surrogate TCMX	%		Org-008	114	1	119	117	2	114	123

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194568-22
Date extracted	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	91	95
Chlorpyriphos-methyl	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	88	105
Dimethoate	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	95	94
Fenitrothion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	94	96
Malathion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	74	88
Parathion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	100	102
Ronnel	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	101	106
Surrogate TCMX	%		Org-008		11	122	122	0	114	117

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date extracted	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	93	95
Chlorpyriphos-methyl	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	86	75
Dimethoate	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	97	100
Fenitrothion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	94	93
Malathion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	76	69
Parathion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	102	104
Ronnel	mg/kg	0.1	Org-008		21	<0.1	<0.1	0	103	107
Surrogate TCMX	%		Org-008		21	118	119	1	119	110

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	26/06/2018	26/06/2018			
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Chlorpyriphos-methyl	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Dimethoate	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Fenitrothion	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Malathion	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Parathion	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Ronnel	mg/kg	0.1	Org-008		41	<0.1	<0.1	0		
Surrogate TCMX	%		Org-008		41	112	113	1		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	26/06/2018	26/06/2018			
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Chlorpyriphos-methyl	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Dimethoate	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Fenitrothion	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Malathion	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Parathion	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Ronnel	mg/kg	0.1	Org-008		51	<0.1	<0.1	0		
Surrogate TCMX	%		Org-008		51	117	117	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date extracted	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			26/06/2018	1	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	101	105
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006	114	1	119	117	2	114	123

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194568-22
Date extracted	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Aroclor 1016	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006		11	<0.1	<0.1	0	102	100
Aroclor 1260	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006		11	122	122	0	114	117

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date extracted	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	26/06/2018	26/06/2018		26/06/2018	26/06/2018
Aroclor 1016	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006		21	<0.1	<0.1	0	102	100
Aroclor 1260	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006		21	118	119	1	119	110

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	26/06/2018	26/06/2018			
Aroclor 1016	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Aroclor 1260	mg/kg	0.1	Org-006		41	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006		41	112	113	1		

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	26/06/2018	26/06/2018			
Aroclor 1016	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Aroclor 1260	mg/kg	0.1	Org-006		51	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006		51	117	117	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	194568-2
Date prepared	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-			25/06/2018	1	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	97	78
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	93	89
Chromium	mg/kg	1	Metals-020	<1	1	4	4	0	94	89
Copper	mg/kg	1	Metals-020	<1	1	2	2	0	93	93
Lead	mg/kg	1	Metals-020	<1	1	10	8	22	92	81
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	99	97
Nickel	mg/kg	1	Metals-020	<1	1	3	2	40	91	88
Zinc	mg/kg	1	Metals-020	<1	1	11	10	10	97	83

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194568-22
Date prepared	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				11	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Arsenic	mg/kg	4	Metals-020		11	<4	<4	0	91	81
Cadmium	mg/kg	0.4	Metals-020		11	<0.4	<0.4	0	97	88
Chromium	mg/kg	1	Metals-020		11	7	8	13	89	98
Copper	mg/kg	1	Metals-020		11	3	4	29	89	94
Lead	mg/kg	1	Metals-020		11	11	12	9	86	88
Mercury	mg/kg	0.1	Metals-021		11	<0.1	<0.1	0	96	104
Nickel	mg/kg	1	Metals-020		11	3	3	0	86	89
Zinc	mg/kg	1	Metals-020		11	17	22	26	90	#

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194568-42
Date prepared	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Date analysed	-				21	25/06/2018	25/06/2018		25/06/2018	25/06/2018
Arsenic	mg/kg	4	Metals-020		21	<4	<4	0	97	83
Cadmium	mg/kg	0.4	Metals-020		21	<0.4	<0.4	0	93	93
Chromium	mg/kg	1	Metals-020		21	8	7	13	95	96
Copper	mg/kg	1	Metals-020		21	8	6	29	94	99
Lead	mg/kg	1	Metals-020		21	24	24	0	91	92
Mercury	mg/kg	0.1	Metals-021		21	<0.1	<0.1	0	114	116
Nickel	mg/kg	1	Metals-020		21	4	4	0	92	93
Zinc	mg/kg	1	Metals-020		21	63	44	36	96	99

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-				31	25/06/2018	25/06/2018			
Date analysed	-				31	25/06/2018	25/06/2018			
Arsenic	mg/kg	4	Metals-020		31	<4	<4	0		
Cadmium	mg/kg	0.4	Metals-020		31	<0.4	<0.4	0		
Chromium	mg/kg	1	Metals-020		31	6	5	18		
Copper	mg/kg	1	Metals-020		31	7	5	33		
Lead	mg/kg	1	Metals-020		31	13	14	7		
Mercury	mg/kg	0.1	Metals-021		31	<0.1	<0.1	0		
Nickel	mg/kg	1	Metals-020		31	3	3	0		
Zinc	mg/kg	1	Metals-020		31	37	45	20		

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-				41	25/06/2018	25/06/2018			
Date analysed	-				41	25/06/2018	25/06/2018			
Arsenic	mg/kg	4	Metals-020		41	<4	4	0		
Cadmium	mg/kg	0.4	Metals-020		41	<0.4	<0.4	0		
Chromium	mg/kg	1	Metals-020		41	27	29	7		
Copper	mg/kg	1	Metals-020		41	6	7	15		
Lead	mg/kg	1	Metals-020		41	19	17	11		
Mercury	mg/kg	0.1	Metals-021		41	<0.1	<0.1	0		
Nickel	mg/kg	1	Metals-020		41	7	7	0		
Zinc	mg/kg	1	Metals-020		41	9	9	0		

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-				51	25/06/2018	25/06/2018			
Date analysed	-				51	25/06/2018	25/06/2018			
Arsenic	mg/kg	4	Metals-020		51	<4	<4	0		
Cadmium	mg/kg	0.4	Metals-020		51	<0.4	<0.4	0		
Chromium	mg/kg	1	Metals-020		51	12	12	0		
Copper	mg/kg	1	Metals-020		51	5	5	0		
Lead	mg/kg	1	Metals-020		51	15	13	14		
Mercury	mg/kg	0.1	Metals-021		51	<0.1	<0.1	0		
Nickel	mg/kg	1	Metals-020		51	4	5	22		
Zinc	mg/kg	1	Metals-020		51	17	17	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			26/08/2018					26/08/2018	
Date analysed	-			26/08/2018					26/08/2018	
pH 1:5 soil:water	pH Units		Inorg-001						99	

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			26/06/2018	53	26/06/2018	26/06/2018		26/06/2018	
Date analysed	-			26/06/2018	53	26/06/2018	26/06/2018		26/06/2018	
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	53	3.4	3.4	0	105	
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	53	0.3	0.3	0	117	
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	53	0.82	0.83	1	106	
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	53	<0.1	<0.1	0	114	

Client Reference: 46162.12, North Tralee DSI

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

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.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC, 2011.

Client Reference: 46162.12, North Tralee DSI

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.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Client Reference: 46162.12, North Tralee DSI

Report Comments

Acid Extractable metals in soil - # 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 were sub-sampled from jars provided by the client.

Page 187 f

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE – DS1
Project No: 45162.12 DP Order No:
DP Contact Person: Peter Storey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A	Combo 3	TCLP	Notes
PIT 1 0.5-0.6	21/6	S	1				X			
PIT 2 0.1-0.2			2				X			
PIT 2 2.0-2.1			3					X		
PIT 3 0.5-0.6			4				X			
PIT 4 0.0-0.1			4				X			
PIT 4 ~~0.5-0.6~~ 1.0-1.1	0.5-0.6 JE		5					X		
PIT 5 1.0-1.1			6				X			
PIT 6 0.0-0.1			7				X			
PIT 6 2.0-2.1			8					X		
PIT 7 0.5-0.6			-				X			
PIT 8 0.0-0.1			NR				X			
PIT 8 1.0-1.1			9					X		
PQL (S)		mg/kg								
PQL (W)		mg/L								

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 194926
Date Received: 27.06.18
Time Received: 11:50
Received by: JE
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None
10.6°C
TP4/0.0-0.1
TP7/0.5-0.6

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished:
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature:
Date: 27/6/18 Lab Ref: 194926

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Page 276

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE – DSI
Project No: 44652.13 DP Order No:
DP Contact Person: PETER STANLEY
Prior Storage: esky (fridge) / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	CSM50 CA		CSM50 3						TCLP	Notes
PIT 9 0.5-0.6	22/6	S	10				X									
PIT 10 0.0-0.1	21/6		11				X									
PIT 10 1.0-1.1	22/6		12						X							
PIT 4 0.0-0.1	25/6		–				X									
PIT 12 0.5-0.6			13				X									
PIT 12 2.0-2.1			14						X							
PIT 13 0.5-0.6			15				X									
PIT 14 0.5-0.6			16				X									
PIT 14 1.5-1.6	10/7 JE		17						X							
PIT 15 0.5-0.6	22/6		18				X									
PIT 16 0.0-0.1	21/6		19				X									
PIT 16 1.0-1.1	4		20						X							
PQL (S)		mg/kg														
PQL (W)		mg/L														

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished:
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature:
Date: 27/6 Lab Ref: 194926

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Page 3 of 6

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE
Project No: 46162.12 DP Order No:
DP Contact Person: Peter Storey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A		Combo 3						TCLP	Notes
HT 19 0.0-0.1	21/6	S	21				X									
HT 19 0.3-0.4	"		22				X									
HT 19 0.3-0.6	"		23						X							
PT 20 0.0-0.1	20/6		24				X									
PT 20 1.0-1.1	21/6		25						X							
PT 21 0.0-0.1	"		NR				X									
PT 21 1.5-1.6	"		26						X							
PT 34 0.0-0.1	22/6		27				X									
PT 34 1.0-1.1			28						X							
PT 35 0.0-0.1			29				X									
PT 36 0.0-0.1			30				X									
PT 36 0.5-0.6			31						X							
PQL (S)		mg/kg														
PQL (W)		mg/L														

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished:
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature:
Date: 27/6/18 Lab Ref: 194926

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Page 4 of 6

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE – DSI
Project No: 44662.12 DP Order No:
DP Contact Person: Peter Storey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	CUHSO 6A	CUHSO 3	Micro	TCLP	Notes
PIT 37 0.0-0.1	22/6	S	40	32			X				
PIT 38 0.0-0.1			41	33			X				
PIT 38 0.5-0.6			42	34				X			
PIT 39 0.0-0.1			43	35			X				Micro =
PIT 40 0.0-0.1			44	36			X				E. coli,
PIT 40 0.5-0.6			45	37				X			Salmonella +
PIT 41 1.0-1.1	25/6		46	38					X		faecal
PIT 41 2.0-2.1			47	39					X		coliforms
PIT 42 0.5-0.6			48	40					X		
PIT 43 0.5-0.6			49	41					X		
PIT 43 1.5-1.6			50	42					X		
PIT 44 0.5-0.6	1.0-1.1	TE	51	43					X		
PQL (S)		mg/kg									
PQL (W)		mg/L									

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished:
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature:
Date: 27/6/18 Lab Ref: 194926

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Page 58 of 6

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE - DSI
Project No: 44162.12 DP Order No:
DP Contact Person: PETER STOLZ
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Cmb 6A	Cmb 3	Micro	TCLP	Notes
PIT 45 0.5-0.6	26/6	S	52 44						x		Micro =
PIT 45 1.2-1.6			53 45						x		E. coli,
PIT 46 1.0-1.1			54 46						x		Salmonella +
PIT 47 0.5-0.6			55 47						x		faecal
PIT 47 1.5-1.6			56 48						x		Staphylo.
PIT 48 1.0-1.1			57 49						x		
PIT 44 0.3-0.4	22/6		58 50				x				
PIT 50 0.3-0.4	24/6		59 51				x				
PIT 78 0.0-0.1	25/6		60 52				x				
PIT 79 0.0-0.1			61 53				x				
PIT 80 0.0-0.1			62 54				x				
PQL (S)		mg/kg									
PQL (W)		mg/L									

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished:
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature:
Date: 27/6/18 Lab Ref: 194926

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Page 6 of 6

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: .....
Project No: ..... DP Order No: .....
DP Contact Person: .....
Prior Storage: esky / fridge / shelved (circle) .....

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Combo 6A	Combo 3	VTRH / BTEX	TCLP	Notes
TB2			63	55					X		
TS2			64	51					X		
TP2/0.0-0.1			68	57							
TP1/0-0.1			66	58							
TP18/1.0-1.1			67	57							
PQL (S)		mg/kg									
PQL (W)		mg/L									

Extra JE

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished: .....
Total number of samples in container: .....
Results required by: .....
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature: .....
Date: 27/6/18 Lab Ref: 194926

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Canberra
Attention	Peter Storey

Sample Login Details	
Your reference	46162.12, North Tralee DSI
Envirolab Reference	194926
Date Sample Received	27/06/2018
Date Instructions Received	27/06/2018
Date Results Expected to be Reported	04/07/2018

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	59 soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.6
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	TRH(C6-C10/BTEX) in Soil	TRH(C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Moisture Content	On Hold
PIT1-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT2 -1.0-1.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT2 -2.0-2.1	✓	✓	✓				✓			
PIT3 -0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT4 -0.5-0.6	✓	✓	✓				✓			
PIT5 -1.0-1.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT6 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT6 -2.0-2.1	✓	✓	✓				✓			
PIT8 -1.0-1.1	✓	✓	✓				✓			
PIT9 -0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT10 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT10 -1.0-1.1	✓	✓	✓				✓			
PIT12 -0.0-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT12 -2.0-2.1	✓	✓	✓				✓			
PIT13 -0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT14 -0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT14 -1.0-1.1	✓	✓	✓				✓			
PIT15 -0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
PIT16 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT16 -1.0-1.1	✓	✓	✓				✓			
PIT17 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT18 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT18 -0.5-0.6	✓	✓	✓				✓			
PIT20 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT20 -1.0-1.1	✓	✓	✓				✓			
PIT21 -1.5-1.6	✓	✓	✓				✓			
PIT34 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT34 -1.0-1.1	✓	✓	✓				✓			
PIT35 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT36 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT36 -0.5-0.6	✓	✓	✓				✓			
PIT37 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	TRH/BTEX/HVOC in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils	Moist. Sieving (1) Soil	On Hold
PIT38 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT38 -0.5-0.6	✓	✓	✓				✓			
PIT39 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT40 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT40 -0.5-0.6	✓	✓	✓				✓			
PIT41 -1.0-1.1									✓	
PIT41 -2.0-2.1									✓	
PIT42 -0.5-0.6									✓	
PIT43 -0.5-0.6									✓	
PIT43 -1.5-1.6									✓	
PIT44 -1.0-1.1									✓	
PIT45 -0.5-0.6									✓	
PIT45 -1.5-1.6									✓	
PIT46 -1.0-1.1									✓	
PIT47 -0.5-0.6									✓	
PIT47 -1.5-1.6									✓	
PIT48 -1.0-1.1									✓	
PIT49 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT50 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT78 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT79 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
PIT80 -0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
TB2	✓									
TS2	✓									
TP2-0.0-0.1										✓
TP1-0.0-0.1										✓
TP18-1.0-1.1										✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 194926

Client Details

Client	Douglas Partners Canberra
Attention	Peter Storey
Address	PO Box 1487, Fyshwick, ACT, 2609

Sample Details

Your Reference	**46162.12, North Tralee DSI**
Number of Samples	59 soil
Date samples received	27/06/2018
Date completed instructions received	27/06/2018

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	04/07/2018
Date of Issue	04/07/2018

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jeremy Faircloth, Organics Supervisor
Leon Ow, Chemist
Lucy Zhu, Asbsestos Analyst
Nancy Zhang, Assistant Lab Manager
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-1	194926-2	194926-3	194926-4	194926-5
Your Reference	UNITS	PIT1	PIT2	PIT2	PIT3	PIT4
Depth		0.5-0.6	1.0-1.1	2.0-2.1	0.5-0.6	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	91	91	92	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-6	194926-7	194926-8	194926-9	194926-10
Your Reference	UNITS	PIT5	PIT6	PIT6	PIT8	PIT9
Depth		1.0-1.1	0.0-0.1	2.0-2.1	1.0-1.1	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	95	95	94	91

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-11	194926-12	194926-13	194926-14	194926-15
Your Reference	UNITS	PIT10	PIT10	PIT12	PIT12	PIT13
Depth		0.0-0.1	1.0-1.1	0.0-0.6	2.0-2.1	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	88	92	88	98	92

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-16	194926-17	194926-18	194926-19	194926-20
Your Reference	UNITS	PIT14	PIT14	PIT15	PIT16	PIT16
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		25/06/2018	25/06/2018	22/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	100	99	100	92

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-21	194926-22	194926-23	194926-24	194926-25
Your Reference	UNITS	PIT17	PIT16	PIT18	PIT20	PIT20
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	20/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	97	97	95	98	86

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-26	194926-27	194926-28	194926-29	194926-30
Your Reference	UNITS	PIT21	PIT34	PIT34	PIT35	PIT36
Depth		1.5-1.6	0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1
Date Sampled		21/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	94	93	92	92

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-31	194926-32	194926-33	194926-34	194926-35
Your Reference	UNITS	PIT36	PIT37	PIT38	PIT38	PIT39
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	27/06/2018	27/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	94	98	96	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		194926-36	194926-37	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT40	PIT40	PIT49	PIT50	PIT78
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/06/2018	27/06/2018	27/06/2018	27/06/2018	27/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	94	97	94	93

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		194926-53	194926-54	194926-55	194926-56
Your Reference	UNITS	PIT79	PIT80	TB2	TS2
Depth		0.0-0.1	0.0-0.1	-	-
Date Sampled		25/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil
Date extracted	-	27/06/2018	27/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	
Benzene	mg/kg	<0.2	<0.2	<0.2	96%
Toluene	mg/kg	<0.5	<0.5	<0.5	95%
Ethylbenzene	mg/kg	<1	<1	<1	98%
m+p-xylene	mg/kg	<2	<2	<2	99%
o-Xylene	mg/kg	<1	<1	<1	99%
naphthalene	mg/kg	<1	<1	<1	
Total +ve Xylenes	mg/kg	<1	<1	<1	
Surrogate aaa-Trifluorotoluene	%	90	87	87	94

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194926-1	194926-2	194926-3	194926-4	194926-5
Your Reference	UNITS	PIT1	PIT2	PIT2	PIT3	PIT4
Depth		0.5-0.6	1.0-1.1	2.0-2.1	0.5-0.6	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	96	122	122	121	121

svTRH (C10-C40) in Soil						
Our Reference		194926-6	194926-7	194926-8	194926-9	194926-10
Your Reference	UNITS	PIT5	PIT6	PIT6	PIT8	PIT9
Depth		1.0-1.1	0.0-0.1	2.0-2.1	1.0-1.1	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	120	121	123	123	121

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194926-11	194926-12	194926-13	194926-14	194926-15
Your Reference	UNITS	PIT10	PIT10	PIT12	PIT12	PIT13
Depth		0.0-0.1	1.0-1.1	0.0-0.6	2.0-2.1	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	123	103	102	99	100

svTRH (C10-C40) in Soil						
Our Reference		194926-16	194926-17	194926-18	194926-19	194926-20
Your Reference	UNITS	PIT14	PIT14	PIT15	PIT16	PIT16
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		25/06/2018	25/06/2018	22/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	99	99	118	117	117

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194926-21	194926-22	194926-23	194926-24	194926-25
Your Reference	UNITS	PIT17	PIT16	PIT18	PIT20	PIT20
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	20/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	121	98	97	99	97

svTRH (C10-C40) in Soil						
Our Reference		194926-26	194926-27	194926-28	194926-29	194926-30
Your Reference	UNITS	PIT21	PIT34	PIT34	PIT35	PIT36
Depth		1.5-1.6	0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1
Date Sampled		21/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	96	100	97	100	100

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil						
Our Reference		194926-31	194926-32	194926-33	194926-34	194926-35
Your Reference	UNITS	PIT36	PIT37	PIT38	PIT38	PIT39
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	100	99	102	98	99

svTRH (C10-C40) in Soil						
Our Reference		194926-36	194926-37	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT40	PIT40	PIT49	PIT50	PIT78
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	100	98	99	99	99

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date extracted	-	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	102	119

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-1	194926-2	194926-3	194926-4	194926-5
Your Reference	UNITS	PIT1	PIT2	PIT2	PIT3	PIT4
Depth		0.5-0.6	1.0-1.1	2.0-2.1	0.5-0.6	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	83	83	80	81	81

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-6	194926-7	194926-8	194926-9	194926-10
Your Reference	UNITS	PIT5	PIT6	PIT6	PIT8	PIT9
Depth		1.0-1.1	0.0-0.1	2.0-2.1	1.0-1.1	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	79	81	79	80	81

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-11	194926-12	194926-13	194926-14	194926-15
Your Reference	UNITS	PIT10	PIT10	PIT12	PIT12	PIT13
Depth		0.0-0.1	1.0-1.1	0.0-0.6	2.0-2.1	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	80	80	82	80	80

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-16	194926-17	194926-18	194926-19	194926-20
Your Reference	UNITS	PIT14	PIT14	PIT15	PIT16	PIT16
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		25/06/2018	25/06/2018	22/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	80	80	80	82	79

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-21	194926-22	194926-23	194926-24	194926-25
Your Reference	UNITS	PIT17	PIT16	PIT18	PIT20	PIT20
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	20/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	81	83	82	81	82

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-26	194926-27	194926-28	194926-29	194926-30
Your Reference	UNITS	PIT21	PIT34	PIT34	PIT35	PIT36
Depth		1.5-1.6	0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1
Date Sampled		21/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	81	82	82	82	81

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-31	194926-32	194926-33	194926-34	194926-35
Your Reference	UNITS	PIT36	PIT37	PIT38	PIT38	PIT39
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	81	81	80	83	91

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil						
Our Reference		194926-36	194926-37	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT40	PIT40	PIT49	PIT50	PIT78
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
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
Surrogate p-Terphenyl-d14	%	88	85	89	86	89

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date extracted	-	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	89

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194926-1	194926-2	194926-4	194926-5	194926-7
Your Reference	UNITS	PIT1	PIT2	PIT3	PIT5	PIT6
Depth		0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1	0.0-0.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	120	121	121	121	123

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194926-10	194926-11	194926-13	194926-15	194926-16
Your Reference	UNITS	PIT9	PIT10	PIT12	PIT13	PIT14
Depth		0.5-0.6	0.0-0.1	0.0-0.6	0.5-0.6	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	121	120	121	121	119

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194926-18	194926-19	194926-21	194926-22	194926-24
Your Reference	UNITS	PIT15	PIT16	PIT17	PIT18	PIT20
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	21/06/2018	21/06/2018	21/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	120	118	116	120	119

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194926-27	194926-29	194926-30	194926-32	194926-33
Your Reference	UNITS	PIT34	PIT35	PIT36	PIT37	PIT38
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	116	116	120	121	121

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil						
Our Reference		194926-35	194926-36	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT39	PIT40	PIT49	PIT50	PIT78
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	117	115	118	110	111

Client Reference: 46162.12, North Tralee DSI

Organochlorine Pesticides in soil			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date extracted	-	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	113	111

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194926-1	194926-2	194926-4	194926-6	194926-7
Your Reference	UNITS	PIT1	PIT2	PIT3	PIT5	PIT6
Depth		0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1	0.0-0.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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	%	120	121	121	121	123

Organophosphorus Pesticides						
Our Reference		194926-10	194926-11	194926-13	194926-15	194926-16
Your Reference	UNITS	PIT9	PIT10	PIT12	PIT13	PIT14
Depth		0.5-0.6	0.0-0.1	0.0-0.6	0.5-0.6	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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	%	121	120	121	121	119

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194926-18	194926-19	194926-21	194926-22	194926-24
Your Reference	UNITS	PIT15	PIT16	PIT17	PIT18	PIT20
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	21/06/2018	21/06/2018	21/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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	%	120	118	116	120	119

Organophosphorus Pesticides						
Our Reference		194926-27	194926-29	194926-30	194926-32	194926-33
Your Reference	UNITS	PIT34	PIT35	PIT36	PIT37	PIT38
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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	%	116	116	120	121	121

Client Reference: 46162.12, North Tralee DSI

Organophosphorus Pesticides						
Our Reference		194926-35	194926-36	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT39	PIT40	PIT49	PIT50	PIT78
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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	%	117	115	118	110	111

Organophosphorus Pesticides			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date extracted	-	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Surrogate TCMX	%	113	111

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194926-1	194926-2	194926-4	194926-6	194926-7
Your Reference	UNITS	PIT1	PIT2	PIT3	PIT5	PIT6
Depth		0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1	0.0-0.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	120	121	121	121	123

PCBs in Soil						
Our Reference		194926-10	194926-11	194926-13	194926-15	194926-16
Your Reference	UNITS	PIT9	PIT10	PIT12	PIT13	PIT14
Depth		0.5-0.6	0.0-0.1	0.0-0.6	0.5-0.6	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	121	120	121	121	119

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194926-18	194926-19	194926-21	194926-22	194926-24
Your Reference	UNITS	PIT15	PIT16	PIT17	PIT18	PIT20
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	21/06/2018	21/06/2018	21/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	120	118	116	120	119

PCBs in Soil						
Our Reference		194926-27	194926-29	194926-30	194926-32	194926-33
Your Reference	UNITS	PIT34	PIT35	PIT36	PIT37	PIT38
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	116	116	120	121	121

Client Reference: 46162.12, North Tralee DSI

PCBs in Soil						
Our Reference		194926-35	194926-36	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT39	PIT40	PIT49	PIT50	PIT76
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
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
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	117	115	118	110	111

PCBs in Soil			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date extracted	-	28/06/2018	28/06/2018
Date analysed	-	28/06/2018	28/06/2018
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	113	111

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194926-1	194926-2	194926-3	194926-4	194926-5
Your Reference	UNITS	PIT1	PIT2	PIT2	PIT3	PIT4
Depth		0.5-0.6	1.0-1.1	2.0-2.1	0.5-0.6	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	11	9	10	11
Copper	mg/kg	7	7	6	7	5
Lead	mg/kg	15	16	16	16	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	4	5	4	5
Zinc	mg/kg	23	24	19	19	19

Acid Extractable metals in soil						
Our Reference		194926-6	194926-7	194926-8	194926-9	194926-10
Your Reference	UNITS	PIT5	PIT6	PIT6	PIT8	PIT9
Depth		1.0-1.1	0.0-0.1	2.0-2.1	1.0-1.1	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	10	16	8	9
Copper	mg/kg	6	6	7	7	8
Lead	mg/kg	15	13	20	16	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	4	5	4	6
Zinc	mg/kg	20	21	22	21	32

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194926-11	194926-12	194926-13	194926-14	194926-15
Your Reference	UNITS	PIT10	PIT10	PIT12	PIT12	PIT13
Depth		0.0-0.1	1.0-1.1	0.0-0.6	2.0-2.1	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	10	11	7	7
Copper	mg/kg	7	10	6	5	5
Lead	mg/kg	16	19	16	15	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	6	4	4	4
Zinc	mg/kg	20	33	24	21	22

Acid Extractable metals in soil						
Our Reference		194926-16	194926-17	194926-18	194926-19	194926-20
Your Reference	UNITS	PIT14	PIT14	PIT15	PIT16	PIT16
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		25/06/2018	25/06/2018	22/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	10	8	12	10
Copper	mg/kg	6	6	9	9	6
Lead	mg/kg	14	15	18	17	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	5	7	9	4
Zinc	mg/kg	20	21	30	32	16

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194926-21	194926-22	194926-23	194926-24	194926-25
Your Reference	UNITS	PIT17	PIT18	PIT18	PIT20	PIT20
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	20/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	5	6	5	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	17	9	11	10
Copper	mg/kg	15	13	19	7	7
Lead	mg/kg	21	23	26	15	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	17	16	11	5	5
Zinc	mg/kg	52	46	55	20	18

Acid Extractable metals in soil						
Our Reference		194926-26	194926-27	194926-28	194926-29	194926-30
Your Reference	UNITS	PIT21	PIT34	PIT34	PIT35	PIT36
Depth		1.5-1.6	0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1
Date Sampled		21/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	7	10	8	9
Copper	mg/kg	5	9	4	12	9
Lead	mg/kg	17	29	16	22	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	4	3	3	4
Zinc	mg/kg	12	48	13	21	31

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil						
Our Reference		194926-31	194926-32	194926-33	194926-34	194926-35
Your Reference	UNITS	PIT36	PIT37	PIT38	PIT38	PIT39
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	10	8	8	9
Copper	mg/kg	4	3	5	4	7
Lead	mg/kg	15	15	17	14	28
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	3	4	3
Zinc	mg/kg	15	14	34	14	28

Acid Extractable metals in soil						
Our Reference		194926-36	194926-37	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT40	PIT40	PIT49	PIT50	PIT76
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	7	8	9	6
Copper	mg/kg	6	4	3	4	6
Lead	mg/kg	17	12	12	12	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	2	2	4	3
Zinc	mg/kg	28	9	7	16	25

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date prepared	-	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	12	31
Copper	mg/kg	6	14
Lead	mg/kg	17	26
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	7	11
Zinc	mg/kg	34	22

Client Reference: 46162.12, North Tralee DSI

Moisture						
Our Reference		194926-1	194926-2	194926-3	194926-4	194926-5
Your Reference	UNITS	PIT1	PIT2	PIT2	PIT3	PIT4
Depth		0.5-0.6	1.0-1.1	2.0-2.1	0.5-0.6	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	9.0	4.9	8.1	5.8	7.9

Moisture						
Our Reference		194926-6	194926-7	194926-8	194926-9	194926-10
Your Reference	UNITS	PIT5	PIT6	PIT8	PIT8	PIT9
Depth		1.0-1.1	0.0-0.1	2.0-2.1	1.0-1.1	0.5-0.6
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	7.7	5.3	8.5	11	11

Moisture						
Our Reference		194926-11	194926-12	194926-13	194926-14	194926-15
Your Reference	UNITS	PIT10	PIT10	PIT12	PIT12	PIT13
Depth		0.0-0.1	1.0-1.1	0.0-0.6	2.0-2.1	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	8.0	13	6.9	9.6	5.7

Moisture						
Our Reference		194926-16	194926-17	194926-18	194926-19	194926-20
Your Reference	UNITS	PIT14	PIT14	PIT15	PIT16	PIT16
Depth		0.5-0.6	1.0-1.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		25/06/2018	25/06/2018	22/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	5.7	7.0	8.4	7.8	11

Client Reference: 46162.12, North Tralee DSI

Moisture						
Our Reference		194926-21	194926-22	194926-23	194926-24	194926-25
Your Reference	UNITS	PIT17	PIT18	PIT18	PIT20	PIT20
Depth		0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1	1.0-1.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	20/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	7.0	9.3	7.1	7.2	14

Moisture						
Our Reference		194926-26	194926-27	194926-28	194926-29	194926-30
Your Reference	UNITS	PIT21	PIT34	PIT34	PIT35	PIT36
Depth		1.5-1.6	0.0-0.1	1.0-1.1	0.0-0.1	0.0-0.1
Date Sampled		21/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	14	5.8	8.7	5.8	8.8

Moisture						
Our Reference		194926-31	194926-32	194926-33	194926-34	194926-35
Your Reference	UNITS	PIT36	PIT37	PIT38	PIT38	PIT39
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.5-0.6	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	6.1	7.9	7.5	3.5	6.7

Moisture						
Our Reference		194926-36	194926-37	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT40	PIT40	PIT49	PIT50	PIT78
Depth		0.0-0.1	0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018	29/06/2018	29/06/2018	29/06/2018
Moisture	%	5.9	4.6	3.7	6.0	5.4

Client Reference: 46162.12, North Tralee DSI

Moisture			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date prepared	-	28/06/2018	28/06/2018
Date analysed	-	29/06/2018	29/06/2018
Moisture	%	6.2	9.9

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194926-1	194926-2	194926-4	194926-5	194926-7
Your Reference	UNITS	PIT1	PIT2	PIT3	PIT5	PIT6
Depth		0.5-0.6	1.0-1.1	0.5-0.6	1.0-1.1	0.0-0.1
Date Sampled		21/06/2018	21/06/2018	21/06/2018	21/06/2018	21/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
Sample mass tested	g	Approx. 35g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Red fine- grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194926-10	194926-11	194926-13	194926-15	194926-16
Your Reference	UNITS	PIT9	PIT10	PIT12	PIT13	PIT14
Depth		0.5-0.6	0.0-0.1	0.0-0.6	0.5-0.6	0.5-0.6
Date Sampled		22/06/2018	22/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
Sample mass tested	g	Approx. 35g	Approx. 40g	Approx. 40g	Approx. 35g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		194926-18	194926-19	194926-21	194926-22	194926-24
Your Reference	UNITS	PIT15	PIT16	PIT17	PIT18	PIT20
Depth		0.5-0.6	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	21/06/2018	21/06/2018	21/06/2018	20/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
Sample mass tested	g	Approx. 40g	Approx. 45g	Approx. 40g	Approx. 40g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194926-27	194926-29	194926-30	194926-32	194926-33
Your Reference	UNITS	PIT34	PIT35	PIT36	PIT37	PIT38
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
Sample mass tested	g	Approx. 40g	Approx. 45g	Approx. 40g	Approx. 30g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils						
Our Reference		194926-35	194926-36	194926-50	194926-51	194926-52
Your Reference	UNITS	PIT39	PIT40	PIT49	PIT50	PIT76
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		22/06/2018	22/06/2018	22/06/2018	22/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
Sample mass tested	g	Approx. 35g	Approx. 45g	Approx. 35g	Approx. 40g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils			
Our Reference		194926-53	194926-54
Your Reference	UNITS	PIT79	PIT80
Depth		0.0-0.1	0.0-0.1
Date Sampled		25/06/2018	25/06/2018
Type of sample		soil	soil
Date analysed	-	03/07/2018	03/07/2018
Sample mass tested	g	Approx. 40g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

Client Reference: 46162.12, North Tralee DSI

Micro testing in soil						
Our Reference		194926-38	194926-39	194926-40	194926-41	194926-42
Your Reference	UNITS	PIT41	PIT41	PIT42	PIT43	PIT43
Depth		1.0-1.1	2.0-2.1	0.5-0.6	0.5-0.6	1.5-1.6
Date Sampled		25/06/2018	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Type of sample		soil	soil	soil	soil	soil
Date testing started	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date testing completed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
E Coli in soil	MPN/100g	<200	<200	<200	<200	<200
Salmonella*	50g	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Faecal Coliforms in soil	MPN/100g	<200	<200	<200	<200	<200

Micro testing in soil						
Our Reference		194926-43	194926-44	194926-45	194926-46	194926-47
Your Reference	UNITS	PIT44	PIT45	PIT45	PIT46	PIT47
Depth		1.0-1.1	0.5-0.6	1.5-1.6	1.0-1.1	0.5-0.6
Date Sampled		25/06/2018	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Type of sample		soil	soil	soil	soil	soil
Date testing started	-	28/06/2018	28/06/2018	28/06/2018	28/06/2018	28/06/2018
Date testing completed	-	03/07/2018	03/07/2018	03/07/2018	03/07/2018	03/07/2018
E Coli in soil	MPN/100g	<200	<200	<200	<200	<200
Salmonella*	50g	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Faecal Coliforms in soil	MPN/100g	<200	<200	<200	<200	<200

Micro testing in soil			
Our Reference		194926-48	194926-49
Your Reference	UNITS	PIT47	PIT48
Depth		1.5-1.6	1.0-1.1
Date Sampled		26/06/2018	26/06/2018
Type of sample		soil	soil
Date testing started	-	28/06/2018	28/06/2018
Date testing completed	-	03/07/2018	03/07/2018
E Coli in soil	MPN/100g	<200	<200
Salmonella*	50g	Not Detected	Not Detected
Faecal Coliforms in soil	MPN/100g	<200	<200

Client Reference: 46162.12, North Tralee DSI

Method ID	Methodology Summary
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.
Ext-008	Subcontracted to Sonic Food & Water Testing. NATA Accreditation No. 4034.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
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-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. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Client Reference: 46162.12, North Tralee DSI

Method ID	Methodology Summary
Org-012	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. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. 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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
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-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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date extracted	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			29/06/2018	1	29/06/2018	29/06/2018		29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	94	90
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	94	90
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	90	86
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	88	83
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	94	90
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	100	96
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	92	87
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016	92	1	90	93	3	95	88

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date extracted	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	29/06/2018	29/06/2018		29/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	25	Org-016		11	<25	<25	0	99	97
TRH C_6 - C_{10}	mg/kg	25	Org-016		11	<25	<25	0	99	97
Benzene	mg/kg	0.2	Org-016		11	<0.2	<0.2	0	96	93
Toluene	mg/kg	0.5	Org-016		11	<0.5	<0.5	0	93	90
Ethylbenzene	mg/kg	1	Org-016		11	<1	<1	0	98	97
m+p-xylene	mg/kg	2	Org-016		11	<2	<2	0	105	103
o-Xylene	mg/kg	1	Org-016		11	<1	<1	0	96	93
naphthalene	mg/kg	1	Org-014		11	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		11	88	94	7	98	99

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	194926-52
Date extracted	-				21	28/06/2018	28/06/2018		28/06/2018	27/06/2018
Date analysed	-				21	29/06/2018	29/06/2018		28/06/2018	29/06/2018
TRH C_6 - C_9	mg/kg	25	Org-016		21	<25	<25	0	96	90
TRH C_6 - C_{10}	mg/kg	25	Org-016		21	<25	<25	0	96	90
Benzene	mg/kg	0.2	Org-016		21	<0.2	<0.2	0	92	86
Toluene	mg/kg	0.5	Org-016		21	<0.5	<0.5	0	90	87
Ethylbenzene	mg/kg	1	Org-016		21	<1	<1	0	95	89
m+p-xylene	mg/kg	2	Org-016		21	<2	<2	0	101	94
o-Xylene	mg/kg	1	Org-016		21	<1	<1	0	92	89
naphthalene	mg/kg	1	Org-014		21	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		21	97	97	0	93	101

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				31	28/06/2018	28/06/2018			
Date analysed	-				31	29/06/2018	29/06/2018			
TRH C_6 - C_9	mg/kg	25	Org-016		31	<25	<25	0		
TRH C_6 - C_{10}	mg/kg	25	Org-016		31	<25	<25	0		
Benzene	mg/kg	0.2	Org-016		31	<0.2	<0.2	0		
Toluene	mg/kg	0.5	Org-016		31	<0.5	<0.5	0		
Ethylbenzene	mg/kg	1	Org-016		31	<1	<1	0		
m+p-xylene	mg/kg	2	Org-016		31	<2	<2	0		
o-Xylene	mg/kg	1	Org-016		31	<1	<1	0		
naphthalene	mg/kg	1	Org-014		31	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		31	92	98	6		

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	27/06/2018	27/06/2018			
Date analysed	-				51	29/06/2018	29/06/2018			
TRH C_6 - C_9	mg/kg	25	Org-016		51	<25	<25	0		
TRH C_6 - C_{10}	mg/kg	25	Org-016		51	<25	<25	0		
Benzene	mg/kg	0.2	Org-016		51	<0.2	<0.2	0		
Toluene	mg/kg	0.5	Org-016		51	<0.5	<0.5	0		
Ethylbenzene	mg/kg	1	Org-016		51	<1	<1	0		
m+p-xylene	mg/kg	2	Org-016		51	<2	<2	0		
o-Xylene	mg/kg	1	Org-016		51	<1	<1	0		
naphthalene	mg/kg	1	Org-014		51	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016		51	94	96	2		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date extracted	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			29/06/2018	1	29/06/2018	29/06/2018		29/06/2018	28/06/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	119	110
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	99	101
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	77	81
TRH >C_{10}-C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	119	110
TRH >C_{16}-C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	99	101
TRH >C_{34}-C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	77	81
Surrogate o-Terphenyl	%		Org-003	99	1	96	122	24	116	98

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date extracted	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	29/06/2018	29/06/2018		28/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003		11	<50	<50	0	113	128
TRH C_{15} - C_{28}	mg/kg	100	Org-003		11	<100	<100	0	98	111
TRH C_{29} - C_{36}	mg/kg	100	Org-003		11	<100	<100	0	77	95
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		11	<50	<50	0	113	128
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		11	<100	<100	0	98	111
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		11	<100	<100	0	77	95
Surrogate o-Terphenyl	%		Org-003		11	123	124	1	110	122

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	194926-52
Date extracted	-				21	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				21	29/06/2018	29/06/2018		29/06/2018	29/06/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003		21	<50	<50	0	113	99
TRH C_{15} - C_{28}	mg/kg	100	Org-003		21	<100	<100	0	97	83
TRH C_{29} - C_{36}	mg/kg	100	Org-003		21	<100	<100	0	92	106
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		21	<50	<50	0	113	99
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		21	<100	<100	0	97	83
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		21	<100	<100	0	92	106
Surrogate o-Terphenyl	%		Org-003		21	121	121	0	110	99

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				31	28/06/2018	28/06/2018			
Date analysed	-				31	29/06/2018	29/06/2018			
TRH C_{10} - C_{14}	mg/kg	50	Org-003		31	<50	<50	0		
TRH C_{15} - C_{28}	mg/kg	100	Org-003		31	<100	<100	0		
TRH C_{29} - C_{36}	mg/kg	100	Org-003		31	<100	<100	0		
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		31	<50	<50	0		
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		31	<100	<100	0		
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		31	<100	<100	0		
Surrogate o-Terphenyl	%		Org-003		31	100	101	1		

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	28/06/2018	28/06/2018			
Date analysed	-				51	29/06/2018	29/06/2018			
TRH C_{10} - C_{14}	mg/kg	50	Org-003		51	<50	<50	0		
TRH C_{15} - C_{28}	mg/kg	100	Org-003		51	<100	<100	0		
TRH C_{29} - C_{36}	mg/kg	100	Org-003		51	<100	<100	0		
TRH >C_{10}-C_{16}	mg/kg	50	Org-003		51	<50	<50	0		
TRH >C_{16}-C_{34}	mg/kg	100	Org-003		51	<100	<100	0		
TRH >C_{34}-C_{40}	mg/kg	100	Org-003		51	<100	<100	0		
Surrogate o-Terphenyl	%		Org-003		51	99	99	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date extracted	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			29/06/2018	1	29/06/2018	29/06/2018		29/06/2018	29/06/2018
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	91	94
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	89	93
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	89	97
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	85	96
Pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	89	99
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	98	92
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	<0.05	<0.05	0	93	88
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012	90	1	83	84	1	103	106

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date extracted	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	29/06/2018	29/06/2018		29/06/2018	29/06/2018
Naphthalene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	95	120
Acenaphthylene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	93	120
Phenanthrene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	97	110
Anthracene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	97	107
Pyrene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	99	113
Benzo(a)anthracene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0	94	136
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		11	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		11	<0.05	<0.05	0	92	117
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		11	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		11	80	81	1	102	90

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	194926-52
Date extracted	-				21	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				21	29/06/2018	29/06/2018		29/06/2018	29/06/2018
Naphthalene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	97	94
Acenaphthylene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	95	92
Phenanthrene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	98	95
Anthracene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	96	91
Pyrene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	100	96
Benzo(a)anthracene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0	98	95
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		21	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		21	<0.05	<0.05	0	85	81
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		21	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		21	81	82	1	113	109

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				31	28/06/2018	28/06/2018			
Date analysed	-				31	29/06/2018	29/06/2018			
Naphthalene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Acenaphthylene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Phenanthrene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Anthracene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Pyrene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Benzo(a)anthracene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		31	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		31	<0.05	<0.05	0		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		31	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		31	81	81	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				51	28/06/2018	28/06/2018			
Date analysed	-				51	29/06/2018	29/06/2018			
Naphthalene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Acenaphthylene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Phenanthrene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Anthracene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Pyrene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Benzo(a)anthracene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012		51	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012		51	<0.05	<0.05	0		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012		51	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012		51	86	87	1		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil				Duplicate					Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date extracted	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	91	100
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	84	93
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	86	93
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	92	103
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	89	106
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	97	110
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	104	118
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	87	96
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	91	102
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	97	93
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005	113	1	120	122	2	105	116

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date extracted	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
HCB	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	94	102
gamma-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	88	94
Heptachlor	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	87	95
delta-BHC	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	97	102
Heptachlor Epoxide	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	96	106
gamma-Chlordane	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	105	110
Dieldrin	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	113	119
Endrin	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	91	98
pp-DDD	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	98	104
Endosulfan II	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005		11	<0.1	<0.1	0	92	108
Methoxychlor	mg/kg	0.1	Org-005		11	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005		11	120	120	0	112	116

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				21	28/06/2018	28/06/2018			
Date analysed	-				21	28/06/2018	28/06/2018			
HCB	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
gamma-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Heptachlor	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
delta-BHC	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Heptachlor Epoxide	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
gamma-Chlordane	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Dieldrin	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endrin	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
pp-DDD	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endosulfan II	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Methoxychlor	mg/kg	0.1	Org-005		21	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005		21	116	119	3		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date extracted	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	94	98
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	91	96
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	97	96
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	98	92
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	94	87
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	106	104
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	103	107
Surrogate TCMX	%		Org-008	113	1	120	122	2	115	121

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date extracted	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	96	99
Chlorpyriphos-methyl	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	104	98
Dimethoate	mg/kg	0.1	Org-008		11	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	106	95
Fenitrothion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	91	96
Malathion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	80	86
Parathion	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	102	108
Ronnel	mg/kg	0.1	Org-008		11	<0.1	<0.1	0	105	108
Surrogate TCMX	%		Org-008		11	120	120	0	121	123

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				21	28/06/2018	28/06/2018			
Date analysed	-				21	28/06/2018	28/06/2018			
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Chlorpyriphos	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Chlorpyriphos-methyl	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Dimethoate	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Fenitrothion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Malathion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Parathion	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Ronnel	mg/kg	0.1	Org-008		21	<0.1	<0.1	0		
Surrogate TCMX	%		Org-008		21	116	119	3		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date extracted	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	100	101
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006	113	1	120	122	2	115	121

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date extracted	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Aroclor 1016	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006		11	<0.1	<0.1	0	102	102
Aroclor 1260	mg/kg	0.1	Org-006		11	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006		11	120	120	0	121	123

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-				21	28/06/2018	28/06/2018			
Date analysed	-				21	28/06/2018	28/06/2018			
Aroclor 1016	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Aroclor 1260	mg/kg	0.1	Org-006		21	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006		21	116	119	3		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	194926-22
Date prepared	-			28/06/2018	1	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-			29/06/2018	1	29/06/2018	29/06/2018		29/06/2018	29/06/2018
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	108	85
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	96	84
Chromium	mg/kg	1	Metals-020	<1	1	8	7	13	103	92
Copper	mg/kg	1	Metals-020	<1	1	7	7	0	111	112
Lead	mg/kg	1	Metals-020	<1	1	15	15	0	102	86
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	96	103
Nickel	mg/kg	1	Metals-020	<1	1	4	5	22	103	92
Zinc	mg/kg	1	Metals-020	<1	1	23	22	4	96	107

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	194926-2
Date prepared	-				11	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				11	29/06/2018	29/06/2018		29/06/2018	29/06/2018
Arsenic	mg/kg	4	Metals-020		11	<4	<4	0	103	87
Cadmium	mg/kg	0.4	Metals-020		11	<0.4	<0.4	0	91	91
Chromium	mg/kg	1	Metals-020		11	12	11	9	98	100
Copper	mg/kg	1	Metals-020		11	7	7	0	103	111
Lead	mg/kg	1	Metals-020		11	16	16	0	97	98
Mercury	mg/kg	0.1	Metals-021		11	<0.1	<0.1	0	102	100
Nickel	mg/kg	1	Metals-020		11	7	7	0	98	102
Zinc	mg/kg	1	Metals-020		11	20	21	5	95	95

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	194926-52
Date prepared	-				21	28/06/2018	28/06/2018		28/06/2018	28/06/2018
Date analysed	-				21	29/06/2018	29/06/2018		29/06/2018	29/06/2018
Arsenic	mg/kg	4	Metals-020		21	5	5	0	105	94
Cadmium	mg/kg	0.4	Metals-020		21	<0.4	<0.4	0	95	94
Chromium	mg/kg	1	Metals-020		21	20	15	29	101	100
Copper	mg/kg	1	Metals-020		21	15	14	7	106	108
Lead	mg/kg	1	Metals-020		21	21	20	5	99	94
Mercury	mg/kg	0.1	Metals-021		21	<0.1	<0.1	0	102	103
Nickel	mg/kg	1	Metals-020		21	17	16	6	101	101
Zinc	mg/kg	1	Metals-020		21	52	51	2	96	89

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-				31	28/06/2018	28/06/2018			
Date analysed	-				31	29/06/2018	29/06/2018			
Arsenic	mg/kg	4	Metals-020		31	<4	<4	0		
Cadmium	mg/kg	0.4	Metals-020		31	<0.4	<0.4	0		
Chromium	mg/kg	1	Metals-020		31	10	8	22		
Copper	mg/kg	1	Metals-020		31	4	4	0		
Lead	mg/kg	1	Metals-020		31	15	14	7		
Mercury	mg/kg	0.1	Metals-021		31	<0.1	<0.1	0		
Nickel	mg/kg	1	Metals-020		31	3	3	0		
Zinc	mg/kg	1	Metals-020		31	15	14	7		

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-				51	28/06/2018	28/06/2018			
Date analysed	-				51	29/06/2018	29/06/2018			
Arsenic	mg/kg	4	Metals-020		51	<4	<4	0		
Cadmium	mg/kg	0.4	Metals-020		51	<0.4	<0.4	0		
Chromium	mg/kg	1	Metals-020		51	9	9	0		
Copper	mg/kg	1	Metals-020		51	4	5	22		
Lead	mg/kg	1	Metals-020		51	12	14	15		
Mercury	mg/kg	0.1	Metals-021		51	<0.1	<0.1	0		
Nickel	mg/kg	1	Metals-020		51	4	5	22		
Zinc	mg/kg	1	Metals-020		51	16	16	0		

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Micro testing in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
E Coli in soil	MPN/100g	200	Ext-008	<200						
Salmonella*	50g	0	Ext-008	<0						
Faecal Coliforms in soil	MPN/100g	200	Ext-008	<200						

Client Reference: 46162.12, North Tralee DSI

Result Definitions	
NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

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.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Client Reference: 46162.12, North Tralee DSI

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.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Client Reference: 46162.12, North Tralee DSI

Report Comments

Salmonella analysed by Sonic Food & Water Testing. Report No.W1812419 and W1812420.

E Coli and Faecal coliform analysed by Sonic, report no W1812421 and W1812422.

Asbestos: A portion of the supplied samples were sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that these sub-samples are indicative of the entire sample.
Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples were sub-sampled from jars provided by the client.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project Name: NORTH TRALEE – DSI
Project No: 45182.12 DP Order No:
DP Contact Person: Peter Storey
Prior Storage: esky / fridge / shelved (circle)

To: Envirolab Services Pty Ltd
12 Ashley Street
CHATSWOOD NSW 2067
Ph: (02) 9910 6200
Attn: Jacinta Hurst

Sample ID	Date Sampled	Sample Type S-soil W-water	Lab ID	Analytes: pH	CEC	Clay Content	Asbestos ID	NEPM Asbestos	Combo 3	TCLP	Notes
Pit 571-1	20/6	ACM	1				x				
Pit 572-1	20/6	ACM	2				x				
Pit 573 20-2.1	20/6	Soil	3					x			
Mat 1	22/6	ACM	4				x				
Mat 2	11	ACM	5				x				
Mat 3	11	ACM	6				x				
22 bulk	20/6	ACM	7				x				
BD1-25	25/6	Soil	8						x		
BD1-22	22/6	Soil	9						x		
PQL (S)		mg/kg									
PQL (W)		mg/L									

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 195963
Date Received: 11.7.18.
Time Received: 11:00
Received by:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit *As per Laboratory Method (Detection Limit)
# - Metals to-Analyse (Please circle): As Cd Cr Cu Pb Zn Hg Ni Mn Fe
Date relinquished: 10/6
Total number of samples in container:
Results required by:
TAT (Circle): Standard 72 hr 48hr 24hr

SAMPLES RECEIVED
Please sign and date to acknowledge receipt of samples and return by fax
Signature:
Date: 11.7.18 Lab Ref: 195963

Send results to:
Douglas Partners Pty Ltd
Address:
PO BOX 1487 FYSHWICK
ACT 2609
Fax: (02) 6260 1147

M:/Environmental/QA-QC/AmendedC-O-C.doc Rev5/June 2008

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Canberra
Attention	Peter Storey

Sample Login Details	
Your reference	46162.12, North Tralee DSI
Envirolab Reference	195963
Date Sample Received	11/07/2018
Date Instructions Received	11/07/2018
Date Results Expected to be Reported	18/07/2018

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	9 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	12.0
Cooling Method	None
Sampling Date Provided	YES

Comments
Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID						
Pit57-1.0-1.1					✓	
Pit57-2.0-2.1					✓	
Pit57-2.0-2.1						✓
Mat 1					✓	
Mat 2					✓	
Mat 3					✓	
22 Surf					✓	
BD1-25	✓	✓	✓	✓		
BD1-22	✓	✓	✓	✓		

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 195963

Client Details

Client	Douglas Partners Canberra
Attention	Peter Storey
Address	PO Box 1487, Fyshwick, ACT, 2609

Sample Details

Your Reference	**46162.12, North Tralee DSI**
Number of Samples	9 Soil
Date samples received	11/07/2018
Date completed instructions received	11/07/2018

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	18/07/2018
Date of Issue	18/07/2018

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Matt Tang
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Long Pham, Team Leader, Metals
Lucy Zhu, Asbsestos Analyst
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

NATA
TECHNICAL COMPETENCE

Client Reference: 46162.12, North Tralee DSI

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		195963-8	195963-9
Your Reference	UNITS	BD1-25	BD1-22
Depth		-	-
Date Sampled		25/06/2018	22/06/2001
Type of sample		Soil	Soil
Date extracted	-	12/07/2018	12/07/2018
Date analysed	-	13/07/2018	13/07/2018
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	97

Client Reference: 46162.12, North Tralee DSI

svTRH (C10-C40) in Soil			
Our Reference		195963-8	195963-9
Your Reference	UNITS	BD1-25	BD1-22
Depth		-	-
Date Sampled		25/06/2018	22/06/2001
Type of sample		Soil	Soil
Date extracted	-	12/07/2018	12/07/2018
Date analysed	-	12/07/2018	12/07/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10}-C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	92	91

Client Reference: 46162.12, North Tralee DSI

PAHs in Soil			
Our Reference		155963-8	155963-9
Your Reference	UNITS	BD1-25	BD1-22
Depth		-	-
Date Sampled		25/06/2018	22/06/2001
Type of sample		Soil	Soil
Date extracted	-	12/07/2018	12/07/2018
Date analysed	-	13/07/2018	13/07/2018
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	114	106

Client Reference: 46162.12, North Tralee DSI

Acid Extractable metals in soil			
Our Reference		195963-8	195963-9
Your Reference	UNITS	BD1-25	BD1-22
Depth		-	-
Date Sampled		25/06/2018	22/06/2001
Type of sample		Soil	Soil
Date prepared	-	12/07/2018	12/07/2018
Date analysed	-	12/07/2018	12/07/2018
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	10	10
Copper	mg/kg	7	8
Lead	mg/kg	18	21
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	5	6
Zinc	mg/kg	32	53

Client Reference: 46162.12, North Tralee DSI

Moisture			
Our Reference		195963-8	195963-9
Your Reference	UNITS	BD1-25	BD1-22
Depth		-	-
Date Sampled		25/06/2018	22/06/2001
Type of sample		Soil	Soil
Date prepared	-	12/07/2018	12/07/2018
Date analysed	-	13/07/2018	13/07/2018
Moisture	%	6.7	6.4

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - materials						
Our Reference		195963-1	195963-2	195963-4	195963-5	195963-6
Your Reference	UNITS	Pit57	Pit57	Mat 1	Mat 2	Mat 3
Depth		1.0-1.1	2.0-2.1	-	-	-
Date Sampled		20/06/2018	20/06/2018	22/06/2018	22/06/2018	22/06/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	17/07/2018	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Mass / Dimension of Sample	-	140x47x5mm	210x90x5mm	90x90x5mm	85x56x5mm	130x95x4mm
Sample Description	-	Beige compressed fibre cement material	Beige compressed fibre cement material	Beige compressed fibre cement material	Peach compressed fibre cement material	Peach compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - materials		
Our Reference		195963-7
Your Reference	UNITS	22 Surf
Depth		-
Date Sampled		20/06/2018
Type of sample		Soil
Date analysed	-	17/07/2018
Mass / Dimension of Sample	-	145x37x5mm
Sample Description	-	Beige compressed fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic Fibres detected

Client Reference: 46162.12, North Tralee DSI

Asbestos ID - soils NEPM		
Our Reference		195963-3
Your Reference	UNITS	Pit57
Depth		2.0-2.1
Date Sampled		20/06/2018
Type of sample		Soil
Date analysed	-	16/07/2018
Sample mass tested	g	1,467.53
Sample Description	-	Grey coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos*1	g/kg	4.8350
Asbestos ID in soil <0.1g/kg*	-	See Above
ACM >7mm Estimation*	g	7.0901
FA and AF Estimation*	g	0.0054
FA and AF Estimation*#2	%(w/w)	<0.001

Client Reference: 46162.12, North Tralee DSI

Method ID	Methodology Summary
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.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** [#1] Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** [#2] The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "–" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
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-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. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).

Client Reference: 46162.12, North Tralee DSI

Method ID	Methodology Summary
Org-012	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. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. 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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
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-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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/07/2018					12/07/2018	
Date analysed	-			13/07/2018					13/07/2018	
TRH C_6 - C_9	mg/kg	25	Org-016	<25					84	
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25					84	
Benzene	mg/kg	0.2	Org-016	<0.2					82	
Toluene	mg/kg	0.5	Org-016	<0.5					81	
Ethylbenzene	mg/kg	1	Org-016	<1					78	
m+p-xylene	mg/kg	2	Org-016	<2					89	
o-Xylene	mg/kg	1	Org-016	<1					78	
naphthalene	mg/kg	1	Org-014	<1						
Surrogate aaa-Trifluorotoluene	%		Org-016	101					101	

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/07/2018					12/07/2018	
Date analysed	-			12/07/2018					12/07/2018	
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50					117	
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100					101	
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100					92	
TRH >C_{10}-C_{16}	mg/kg	50	Org-003	<50					117	
TRH >C_{16}-C_{34}	mg/kg	100	Org-003	<100					101	
TRH >C_{34}-C_{40}	mg/kg	100	Org-003	<100					92	
Surrogate o-Terphenyl	%		Org-003	92					109	

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/07/2018					12/07/2018	
Date analysed	-			13/07/2018					13/07/2018	
Naphthalene	mg/kg	0.1	Org-012	<0.1					115	
Acenaphthylene	mg/kg	0.1	Org-012	<0.1						
Acenaphthene	mg/kg	0.1	Org-012	<0.1						
Fluorene	mg/kg	0.1	Org-012	<0.1					110	
Phenanthrene	mg/kg	0.1	Org-012	<0.1					119	
Anthracene	mg/kg	0.1	Org-012	<0.1						
Fluoranthene	mg/kg	0.1	Org-012	<0.1					121	
Pyrene	mg/kg	0.1	Org-012	<0.1					128	
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1						
Chrysene	mg/kg	0.1	Org-012	<0.1					97	
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2						
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05					101	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1						
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1						
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1						
Surrogate p-Terphenyl-d14	%		Org-012	109					114	

Client Reference: 46162.12, North Tralee DSI

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			12/07/2018					12/07/2018	
Date analysed	-			12/07/2018					12/07/2018	
Arsenic	mg/kg	4	Metals-020	<4					116	
Cadmium	mg/kg	0.4	Metals-020	<0.4					105	
Chromium	mg/kg	1	Metals-020	<1					112	
Copper	mg/kg	1	Metals-020	<1					117	
Lead	mg/kg	1	Metals-020	<1					110	
Mercury	mg/kg	0.1	Metals-021	<0.1					116	
Nickel	mg/kg	1	Metals-020	<1					112	
Zinc	mg/kg	1	Metals-020	<1					106	

Client Reference: 46162.12, North Tralee DSI

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

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.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Client Reference: 46162.12, North Tralee DSI

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.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request

Client Reference: 46162.12, North Tralee DSI

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.
This is reported outside our scope of NATA accreditation.

Appendix I

Ecological Investigation Level Calculation Sheet Output

Inputs
Select contaminant from list below
As
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	Arsenic generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	20	40
Urban residential and open public spaces	50	100
Commercial and Industrial	80	160

Inputs
Select contaminant from list below
Cu
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
21.4
Enter soil pH (calcium chloride method) (values from 1 to 14)
8.7
Enter organic carbon content (%OC) (values from 0 to 50%)
1
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	85
Urban residential and open public spaces	#NUM!	230
Commercial and Industrial	#NUM!	320

Inputs
Select contaminant from list below
DDT
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	DDT generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	3	3
Urban residential and open public spaces	180	180
Commercial and Industrial	640	640

Inputs
Select contaminant from list below
Naphthalene
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	Naphthalene generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	10	10
Urban residential and open public spaces	170	170
Commercial and Industrial	370	370

Inputs
Select contaminant from list below
Ni
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
21.4
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Ni soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	55
Urban residential and open public spaces	#NUM!	280
Commercial and Industrial	#NUM!	480

Inputs
Select contaminant from list below
Pb
Below needed to calculate fresh and aged ACLs
Below needed to calculate fresh and aged ABCs
or for fresh ABCs only
or for aged ABCs only

Outputs		
Land use	Lead generic EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	110	470
Urban residential and open public spaces	270	1100
Commercial and Industrial	440	1800

Inputs
Select contaminant from list below
Cr_III
Below needed to calculate fresh and aged ACLs
Enter % clay (values from 0 to 100%)
10
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cr III soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	140
Urban residential and open public spaces	#NUM!	410
Commercial and Industrial	#NUM!	670

Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
21.4
Enter soil pH (calcium chloride method) (values from 1 to 14)
8.7
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Zn soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	#NUM!	240
Urban residential and open public spaces	#NUM!	810
Commercial and industrial	#NUM!	1200

Appendix J

Tables

Douglas Partners

TABLE J1
Asbestos in Soil Calculation Sieve Analysis

Date	18 to 22 June 2018
Project No.	
Asbestos Content	15 %
Sieve size	7 mm
Asbestos Criteria %w/w Public Space	0.02 % w/w
Asbestos Criteria %w/w Commercial	0.05 % w/w

Pit	Depth (m)	Strata	Approx. Sample Volume (L)	Asbestos Material Observed	Weight of Soil sampling (kg)	Weight of Asbestos Sample (g)	Weight of Sample (kg)	Asbestos in Soil (%w/w)
1	1.0-1.1	Filling (silty sand)	10	None observed	11.6		0.000	0.000
1	0.0-0.1	Filling (silty sand)	10	None observed	12.3		0.000	0.000
2	0.0-0.1	Filling (gravelly sand)	10	None observed	10.9		0.000	0.000
2	1.0-1.1	Filling (clayey sand)	10	None observed	15.3		0.000	0.000
3	0.0-0.1	Filling (silty clay)	10	None observed	10.3		0.000	0.000
3	1.0-1.1	Filling (silty sand)	10	None observed	10.9		0.000	0.000
4	0.0-0.1	Filling (sand)	10	None observed	9.21		0.000	0.000
4	1.0-1.1	Filling (clayey sand)	10	None observed	13		0.000	0.000
5	0.0-0.1	Filling (sandy silt)	10	None observed	10.9		0.000	0.000
5	1.0-1.1	Filling (silty sand)	10	None observed	11.5		0.000	0.000
6	1.0-1.1	Filling (silty sand)	10	None observed	12.1		0.000	0.000
6	0.0-0.1	Filling (silty sand)	10	None observed	15		0.000	0.000
7	0.0-0.1	Filling (sandy clay)	10	None observed	10.8		0.000	0.000
7	1.0-1.1	Filling (gravelly sand)	10	None observed	12.1		0.000	0.000
8	0.0-0.1	Filling (silty sand)	10	None observed	15.3		0.000	0.000
8	1.0-1.1	Filling (silty clay)	10	None observed	14.9		0.000	0.000
9	0.0-0.1	Filling (sandy clay)	10	None observed	10.6		0.000	0.000
9	1.0-1.1	Filling (sandy clay)	10	None observed	11.9		0.000	0.000
10	0.0-0.1	Filling (sandy clay)	10	None observed	9.8		0.000	0.000
10	2.0-2.1	Filling (silty clay)	10	None observed	11.1		0.000	0.000
11	0.0-0.1	Filling (silty clay)	10	None observed	14.2		0.000	0.000
11	1.0-1.1	Filling (sandy silt)	10	None observed	15.8		0.000	0.000
12	0.0-0.1	Filling (sandy clay)	10	None observed	13.9		0.000	0.000
12	1.0-1.1	Filling (sandy silt)	10	None observed	16.2		0.000	0.000
13	1.0-1.1	Filling (sandy silt)	10	None observed	12.9		0.000	0.000
13	0.0-0.1	Filling (sandy silt)	10	None observed	13.4		0.000	0.000
14	0.0-0.1	Filling (silty clay)	10	None observed	13.6		0.000	0.000
14	1.0-1.1	Filling (sandy silt)	10	None observed	14.5		0.000	0.000
15	0.0-0.1	Filling (silty sand)	10	None observed	10.6		0.000	0.000
15	1.0-1.1	Filling (silty sand)	10	None observed	11.1		0.000	0.000
16	0.5-0.6	Filling (sandy silt)	10	None observed	12.9		0.000	0.000
16	0.0-0.1	Filling (gravelly sand)	10	None observed	13.6		0.000	0.000
17	0.0-0.1	Filling (silty clay)	10	None observed	10.6		0.000	0.000
17	0.5-0.6	Filling (silty sand)	10	None observed	13.9		0.000	0.000
18	0.5-0.6	Filling (silty clay)	10	None observed	12.1		0.000	0.000
18	0.0-0.1	Filling (silty clay)	10	None observed	15.6		0.000	0.000
20	0.0-0.1	Filling (sandy silt)	10	None observed	10.9		0.000	0.000
21	1.0-1.1	Filling (clayey sand)	10	None observed	12.8		0.000	0.000
21	0.0-0.1	Filling (sandy silt)	10	None observed	16.5		0.000	0.000
22	0.0-0.1	Filling (Sandy Silt)	10	None observed	15.5		0.000	0.000
22	1.5-1.6	Filling (Sandy Clay)	10	None observed	13.7		0.000	0.000
23	0.0-0.1	Filling (sandy silt)	10	None observed	13.9		0.000	0.000
23	0.5-0.6	Filling (silty sand)	10	None observed	13.9		0.000	0.000
24	0.0-0.1	Topsoil fill/ng	10	None observed	13.8		0.000	0.000
25	0.0-0.1	Filling (gravelly sand)	10	None observed	10.9		0.000	0.000
25	0.5-0.6	Filling (sandy clay)	10	None observed	12.1		0.000	0.000
26	0.0-0.1	Filling (silty sand)	10	None observed	15.7		0.000	0.000
27	0.0-0.1	Filling (silty sand)	10	None observed	14.1		0.000	0.000
28	0.0-0.1	Filling (gravelly sand)	10	None observed	13.2		0.000	0.000
29	0.0-0.1	Filling (gravelly sand)	10	None observed	12.3		0.000	0.000
30	0.0-0.1	Filling (silty clay)	10	None observed	10.6		0.000	0.000
31	0.5-0.6	Filling (sandy clay)	10	None observed	14.6		0.000	0.000
31	0.0-0.5	Filling (gravelly sand)	10	None observed	12.9		0.000	0.000
32	0.0-0.1	Filling (silty sand)	10	None observed	16.1		0.000	0.000
32	0.5-0.6	Filling (sandy clay)	10	None observed	15.8		0.000	0.000
33	0.0-0.1	Filling (silty sand)	10	None observed	11.5		0.000	0.000
33	0.5-0.6	Filling (silty sand)	10	None observed	13.4		0.000	0.000
34	0.0-0.1	Silty sand	10	None observed	9.8		0.000	0.000
34	1.0-1.1	Silty sand	10	None observed	12.1		0.000	0.000
35	0.0-0.1	Silty sand	10	None observed	10.9		0.000	0.000
35	1.0-1.1	Silty sand	10	None observed	11.3		0.000	0.000
36	0.0-0.1	Silty sand	10	None observed	10.5		0.000	0.000
37	0.0-0.1	Silty sand	10	None observed	11.3		0.000	0.000
38	0.0-0.1	Sandy silt	10	None observed	11.6		0.000	0.000
39	0.0-0.1	Sandy silt	10	None observed	10.6		0.000	0.000
40	0.0-0.1	Sandy silt	10	None observed	10.6		0.000	0.000
49	0.0-0.1	Sandy silt	10	None observed	12.7		0.000	0.000
50	0.0-0.1	Filling (silty sand)	10	None observed	12.3		0.000	0.000
51	0.0-1.7	Filling	10	None observed	14.3		0.000	0.000
52	0.5-0.6	Filling	10	None observed	11.5		0.000	0.000
53	0.5-0.6	Filling (sandy silt)	10	None observed	13.8		0.000	0.000
54	0.0-0.1	Sandy Silt	10	None observed	11.9		0.000	0.000
56	0.5-2.8	Filling (gravelly sand)	10	None observed	12.2		0.000	0.000
57	0.0-0.1	Filling	10	None observed	10.3		0.000	0.000
51	1.0-1.1	Filling	10	2 fragments (70mm to 80mm long) observed Compressed fibre cement material	13.1	42.3	0.042	0.046
57	2.0-2.1	Filling	10	3 fragments (40mm to 200mm long) observed Compressed fibre cement material	15	223.5	0.224	0.224
58	0.0-0.1	Filling (Sandy Silt)	10	None observed	12.5		0.000	0.000
59	0.0-0.1	Sandy Silt	10	None observed	10.5		0.000	0.000
60	0.0-0.1	Silty clay	10	None observed	13.5		0.000	0.000

Notes: Bold — Sample exceeds the Asbestos in Soil %w/w for commercial/industrial land use
Bold — Sample exceeds the Asbestos in Soil %w/w for recreational land use

Douglas Partners

TABLE J2
SUMMARY OF LABORATORY TEST RESULTS - INORGANICS (mg/kg)

Sample ID	Depth (m)	Sample Date	Material Type	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
PIT1	0.5-0.6	21/06/2018	Filling (silty sand)	<4	<0.4	8	7	15	<0.1	4	23
PIT2	1.0-1.1	21/06/2018	Filling (clayey sand)	<4	<0.4	11	7	19	<0.1	4	24
PIT2	2.0-2.1	21/06/2018	Filling (clayey sand)	<4	<0.4	9	6	16	<0.1	5	18
PIT3	0.5-0.6	21/06/2018	Filling (silty sand)	<4	<0.4	10	7	16	<0.1	4	19
PIT4	0.5-0.6	21/06/2018	Filling (clayey sand)	<4	<0.4	11	5	19	<0.1	5	19
PIT5	1.0-1.1	21/06/2018	Filling (silty sand)	<4	<0.4	13	6	15	<0.1	5	20
PIT6	0.0-0.1	21/06/2018	Filling (silty sand)	<4	<0.4	10	6	13	<0.1	4	21
PIT6	2.0-2.1	21/06/2018	Filling (sandy clay)	<4	<0.4	16	7	20	<0.1	5	22
PIT8	1.0-1.1	21/06/2018	Filling (silty clay)	<4	<0.4	9	7	16	<0.1	4	21
PIT9	0.5-0.6	22/06/2018	Filling (sandy clay)	<4	<0.4	9	8	18	<0.1	6	32
PIT10	0.0-0.1	22/06/2018	Filling (sandy clay)	<4	<0.4	12	7	16	<0.1	7	20
PIT10	1.0-1.1	22/06/2018	Filling (silty clay)	<4	<0.4	10	10	19	<0.1	6	33
PIT12	0.0-0.6	25/06/2018	Filling (sandy silt)	<4	<0.4	11	6	16	<0.1	4	24
PIT12	2.0-2.1	25/06/2018	Filling (sandy silt)	<4	<0.4	7	5	15	<0.1	4	21
PIT13	0.5-0.6	25/06/2018	Filling (sandy silt)	<4	<0.4	7	5	14	<0.1	4	22
PIT14	0.5-0.6	25/06/2018	Filling (sandy silt)	<4	<0.4	10	6	14	<0.1	4	20
PIT14	1.0-1.1	25/06/2018	Sandy silt	<4	<0.4	10	6	15	<0.1	5	21
PIT15	0.5-0.6	22/06/2018	Filling (silty sand)	<4	<0.4	8	9	18	<0.1	7	30
PIT16	0.0-0.1	21/06/2018	Filling (gravelly sand)	<4	<0.4	12	9	17	<0.1	9	32
PIT16	1.0-1.1	21/06/2018	Sandy clay	<4	<0.4	10	6	13	<0.1	4	16
PIT17	0.0-0.1	21/06/2018	Filling (silty clay)	5	<0.4	20	15	21	<0.1	17	52
PIT18	0.0-0.1	21/06/2018	Filling (silty clay)	6	<0.4	17	13	23	<0.1	16	46
PIT18	0.5-0.6	21/06/2018	Filling (silty clay)	5	<0.4	9	19	26	<0.1	11	55
Pit19	0.5-0.6	20/06/2018	Clay	<4	<0.4	4	2	10	<0.1	3	11
PIT20	0.0-0.1	20/06/2018	Filling (sandy silt)	<4	<0.4	11	7	15	<0.1	5	20
PIT20	1.0-1.1	21/06/2018	Silty sand	<4	<0.4	10	7	15	<0.1	5	18
PIT21	1.5-1.6	21/06/2018	Sandy Clay	<4	<0.4	9	5	17	<0.1	7	12
Pit22	0.0-0.1	20/06/2018	Filling (sandy silt)	<4	<0.4	9	6	18	0.1	4	33
Pit22	1.0-1.1	20/06/2018	Filling (sandy clay)	<4	<0.4	8	4	11	<0.1	4	13
Pit23	0.5-0.6	20/06/2018	Filling (silty sand)	<4	<0.4	7	3	10	<0.1	3	14
BD1/20	0.5-0.6	20/06/2018	Filling (silty sand)	<4	<0.4	8	5	16	<0.1	4	33
Pit24	0.0-0.1	20/06/2018	Topsoil (silty sand)	<4	<0.4	8	3	8	<0.1	4	20
Pit24	0.5-0.6	20/06/2018	Silty clay	<4	<0.4	8	5	21	<0.1	4	19
Pit25	0.0-0.1	20/06/2018	Filling (gravelly sand)	<4	<0.4	8	4	12	<0.1	4	23
Pit26	0.0-0.1	20/06/2018	Filling (silty sand)	<4	<0.4	4	2	10	<0.1	2	10
Pit26	0.5-0.6	20/06/2018	Silty clay	<4	<0.4	7	4	18	<0.1	3	14
Pit27	0.0-0.1	20/06/2018	Topsoil Filling (silty sand)	<4	<0.4	6	4	14	<0.1	2	15
Pit28	0.0-0.1	20/06/2018	Filling (gravelly sand)	<4	<0.4	7	3	11	<0.1	3	17
Pit28	1.0-1.1	20/06/2018	Sandy clay	<4	<0.4	8	3	21	<0.1	4	8
Pit29	0.0-0.1	20/06/2018	Filling (gravelly sand)	<4	<0.4	10	3	7	<0.1	6	21
Pit30	0.0-0.1	20/06/2018	Filling (silty clay)	<4	<0.4	9	6	13	<0.1	5	21
Pit30	1.0-1.1	20/06/2018	Sandy clay	<4	<0.4	11	6	13	<0.1	5	25
Pit31	0.5-0.6	20/06/2018	Filling (sandy clay)	<4	<0.4	9	4	13	<0.1	3	21
Pit31	1.0-1.1	20/06/2018	Clayey sand	<4	<0.4	8	5	12	<0.1	4	17
Pit32	0.5-0.6	20/06/2018	Filling (sandy clay)	<4	<0.4	9	3	10	<0.1	3	8
Pit33	0.-0.1	20/06/2018	Filling (silty sand)	<4	<0.4	8	3	12	<0.1	4	17
Pit33	1.0-1.1	20/06/2018	Clayey sand	<4	<0.4	7	2	12	<0.1	2	8
PIT34	0.0-0.1	22/06/2018	Topsoil (clayey silt)	<4	<0.4	7	9	29	<0.1	4	48
PIT34	1.0-1.1	22/06/2018	Silty sand	<4	<0.4	10	4	16	<0.1	3	13
PIT35	0.0-0.1	22/06/2018	Topsoil (sandy silt)	<4	<0.4	8	12	22	<0.1	3	21
PIT36	0.0-0.1	22/06/2018	Topsoil (sandy silt)	<4	<0.4	9	9	18	<0.1	4	31
PIT36	0.5-0.6	22/06/2018	Silty sand	<4	<0.4	10	4	15	<0.1	3	15
PIT37	0.0-0.1	22/06/2018	Silty sand	<4	<0.4	10	3	15	<0.1	2	14
PIT38	0.0-0.1	22/06/2018	Silty sand	<4	<0.4	8	5	17	<0.1	3	34
PIT38	0.5-0.6	22/06/2018	Silty sand	<4	<0.4	8	4	14	<0.1	4	14
PIT39	0.0-0.1	22/06/2018	Topsoil (sand silt)	<4	<0.4	9	7	28	<0.1	3	28
PIT40	0.0-0.1	22/06/2018	Silty sand	<4	<0.4	8	6	17	<0.1	4	28
BD1/22	0.0-0.1	22/06/2018	Silty sand	<4	<0.4	10	7	18	<0.1	5	32
PIT40	0.5-0.6	22/06/2018	Silty sand	<4	<0.4	7	4	12	<0.1	2	8
PIT41	1.0-1.1	25/06/2018	Filling (sandy silty clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT41	2.0-2.1	25/06/2018	Silty clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT42	0.5-0.6	25/06/2018	Filling (clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT43	0.5-0.6	25/06/2018	Filling (sandy silt)	NT	NT	NT	NT	NT	NT	NT	NT
PIT43	1.5-1.6	25/06/2018	Silty clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT44	1.0-1.1	25/06/2018	Filling (sandy silt)	NT	NT	NT	NT	NT	NT	NT	NT
PIT45	0.5-0.6	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT45	1.5-1.6	26/06/2018	Sandy clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT46	1.0-1.1	26/06/2018	Sand clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT47	0.5-0.6	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT47	1.5-1.6	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT48	1.0-1.1	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT49	0.0-0.1	22/06/2018	Topsoils (sandy silt)	<4	<0.4	8	3	12	<0.1	2	7
PIT50	0.0-0.1	22/06/2018	Filling (silty sand)	<4	<0.4	9	4	12	<0.1	4	16
Pit51	0.5-0.6	19/06/2018	Filling (clayey silty sand)	<4	<0.4	8	9	24	<0.1	4	63
BD3/19	0.5-0.6	19/06/2018	Filling (clayey silty sand)	<4	<0.4	7	8	23	<0.1	6	38
Pit52	0.5-0.6	19/06/2018	Filling (sandy silt)	<4	<0.4	10	7	24	<0.1	7	86
Pit52	1.5-1.6	19/06/2018	Clayey silt	<4	<0.4	6	5	16	<0.1	4	140
Pit53	0.5-0.6	19/06/2018	Filling (sandy silt)	<4	<0.4	9	12	16	<0.1	5	30
Pit54	0.5-0.6	19/06/2018	Silty Sand	<4	<0.4	8	4	10	<0.1	3	17
Pit55	0.0-0.1	19/06/2018	Sandy Clay	<4	<0.4	10	12	20	<0.1	13	32
Pit56	0.5-0.6	19/06/2018	Filling (gravelly sand)	<4	<0.4	5	7	13	<0.1	4	32
Pit56	1.0-1.1	19/06/2018	Gravelly sand	<4	<0.4	5	5	11	<0.1	3	21
Pit57	0.5-0.6	20/06/2018	Filling (gravelly sand)	<4	<0.4	6	6	210	<0.1	3	140

Sample ID	Depth (m)	Sample Date	Material Type	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Pit57	1.0-1.1	20/06/2018	Filling (gravelly sand)			7	7	25		5	170
Pit57	2.2-2.3	20/06/2018	Clay			6	7	13		3	37
Pit58	0.0-0.1	20/06/2018	Clayey Sand			7	6	16		4	27
Pit59	0.5-0.6	19/06/2018	Silty Clay			8	9	16		6	39
Pit60	0.0-0.1	20/06/2018	Topsoil (sandy silt)			7	8	15		4	34
Pit61	0.0-0.1	19/06/2018	Silty sand			37	6	16		5	12
BD2/19	0.0-0.1	19/06/2018	Silty sand			16	6	14		5	12
Pit62	0.0-0.1	19/06/2018	Topsoil (silty sand)			30	5	16		4	8
Pit63	0.0-0.1	18/06/2018	Filling (silty clay)			8	4	13		3	24
Pit64	0.5-0.6	18/06/2018	Sandy clay			5	3	13		3	23
Pit65	0.5-0.6	18/06/2018	Filling (sandy silt)			8	4	13		3	24
Pit66	0.5-0.6	18/06/2018	Silty Clay			8	8	16		5	58
Pit67	0.0-0.1	19/06/2018	Topsoil (silty clay)			27	6	19		7	9
Pit68	0.0-0.1	18/06/2018	Topsoil (silty clay)			7	6	16		4	34
Pit69	0.5-0.6	19/06/2018	Sandy clay			20	10	12		8	18
Pit70	0.0-0.1	19/06/2018	Filling (silty sand)			9	7	18		5	35
BD1/19	0.0-0.1	19/06/2018	Filling (silty sand)			45	6	19		5	10
Pit70	0.5-0.6	19/06/2018	Silty sand			8	4	14		3	22
Pit71	0.0-0.1	19/06/2018	Silty sand			16	6	13		5	12
Pit72	0.5-0.6	19/06/2018	Sandy silt			8	6	19		5	23
Pit73	0.0-0.1	19/06/2018	Topsoil (sandy silt)			6	3	10		2	12
Pit74	0.0-0.1	19/06/2018	Sandy clay			5	3	10		2	10
Pit75	0.5-0.6	19/06/2018	Clay			12	7	20		5	18
Pit76	0.0-0.1	19/06/2018	Filling (silty sand)			12	5	15		4	17
Pit76	2.0-2.1	19/06/2018	Filling (silty sand)			15	7	13		7	25
Pit77	0.5-0.6	19/06/2018	Filling (gravelly sand)			8	3	12		3	15
PiT78	0.0-0.1	25/06/2018	Filling (sandy clay)			8	8	17		3	26
PiT79	0.0-0.1	25/06/2018	Filling (sandy silt)			12	6	17		7	34
PiT80	0.0-0.1	25/06/2018	Filling (sandy clay)			31	14	28		11	22
PQL				4	0.4	1	1	1	0.1	1	1
HIL-C				300	90	300	17,000	600	80	1,200	30,000
HIL-D				3,000	900	3,600	240,000	1,500	730	6,000	400,000
EIL				100	NC	410	230	1100	NC	280	810

Notes

HIL C - Health Based Soil Investigation Levels for Public Open Space Landuse Values
HIL D - Health Based Soil Investigation Levels for Commercial / Industrial land use values
EIL - Environmental Soil Investigation Levels for lower bound Public Open Space Landuse Values
PQL - Practical Quantitation Limit

NC	- No Criteria
NT	- Not Tested
BD1/19	Replicate of Pit 70 0.0-0.1
BD2/19	Replicate of Pit 61 0.0-0.1
BD3/19	Replicate of Pit 51 0.5-0.6
BD1/20	Replicate of Pit 22 0.0-0.1
BD1/22	Replicate of Pit 40 0.0-0.1

Douglas Partners

TABLE J3
SUMMARY OF LABORATORY TEST RESULTS - ORGANICS (PETROLEUM HYDROCARBONS - mg/kg)

Sample ID	Depth (m)	Sample Date	Material Type	Benzene	Toluene	Ethylbenzene	Xylene	F1	F2	F3	F4
PIT1	0.5-0.6	21/06/2018	Filling (silty sand)								
PIT2	1.0-1.1	21/06/2018	Filling (clayey sand)								
PIT2	2.0-2.1	21/06/2018	Filling (clayey sand)								
PIT3	0.5-0.6	21/06/2018	Filling (silty sand)								
PIT4	0.5-0.6	21/06/2018	Filling (clayey sand)								
PIT5	1.0-1.1	21/06/2018	Filling (silty sand)								
PIT6	0.0-0.1	21/06/2018	Filling (silty sand)								
PIT6	2.0-2.1	21/06/2018	Filling (sandy clay)								
PIT8	1.0-1.1	21/06/2018	Filling (silty clay)								
PIT9	0.5-0.6	22/06/2018	Filling (sandy clay)								
PIT10	0.0-0.1	22/06/2018	Filling (sandy clay)								
PIT10	1.0-1.1	22/06/2018	Filling (silty clay)								
PIT12	0.0-0.6	25/06/2018	Filling (sandy silt)								
PIT12	2.0-2.1	25/06/2018	Filling (sandy silt)								
PIT13	0.5-0.6	25/06/2018	Filling (sandy silt)								
PIT14	0.5-0.6	25/06/2018	Filling (sandy silt)								
PIT14	1.0-1.1	25/06/2018	Sandy silt								
PIT15	0.5-0.6	22/06/2018	Filling (silty sand)								
PIT16	0.0-0.1	21/06/2018	Filling (gravelly sand)								
PIT16	1.0-1.1	21/06/2018	Sandy clay								
PIT17	0.0-0.1	21/06/2018	Filling (silty clay)								
PIT18	0.0-0.1	21/06/2018	Filling (silty clay)								
PIT18	0.5-0.6	21/06/2018	Filling (silty clay)								
Pit19	0.5-0.6	20/06/2018	Clay								
PIT20	0.0-0.1	20/06/2018	Filling (sandy silt)								
PIT20	1.0-1.1	21/06/2018	Silty sand								
PIT21	1.5-1.6	21/06/2018	Sandy Clay								
Pit22	0.0-0.1	20/06/2018	Filling (sandy silt)								
BD1/20	0.0-0.1	20/06/2018	Filling (sandy silt)								
Pit22	1.0-1.1	20/06/2018	Filling (sandy clay)								
Pit23	0.5-0.6	20/06/2018	Filling (silty sand)								
Pit24	0.0-0.1	20/06/2018	Topsoil (silty sand)								
Pit24	0.5-0.6	20/06/2018	Silty clay								
Pit25	0.0-0.1	20/06/2018	Filling (gravelly sand)								130
Pit26	0.0-0.1	20/06/2018	Filling (silty sand)								
Pit26	0.5-0.6	20/06/2018	Silty clay								
Pit27	0.0-0.1	20/06/2018	Topsoil Filling (silty sand)								
Pit28	0.0-0.1	20/06/2018	Filling (gravelly sand)								120
Pit28	1.0-1.1	20/06/2018	Sandy clay								
Pit29	0.0-0.1	20/06/2018	Filling (gravelly sand)								
Pit30	0.0-0.1	20/06/2018	Filling (silty clay)								
Pit30	1.0-1.1	20/06/2018	Sandy clay								
Pit31	0.5-0.6	20/06/2018	Filling (sandy clay)								
Pit31	1.0-1.1	20/06/2018	Clayey sand								
Pit32	0.5-0.6	20/06/2018	Filling (sandy clay)								
Pit33	0.0-0.1	20/06/2018	Filling (silty sand)								
Pit33	1.0-1.1	20/06/2018	Clayey sand								
PIT34	0.0-0.1	22/06/2018	Topsoil (clayey silt)								
PIT34	1.0-1.1	22/06/2018	Silty sand								
PIT35	0.0-0.1	22/06/2018	Topsoil (sandy silt)								
PIT36	0.0-0.1	22/06/2018	Topsoil (sandy silt)								
PIT36	0.5-0.6	22/06/2018	Silty sand								
PIT37	0.0-0.1	22/06/2018	Silty sand								
PIT38	0.0-0.1	22/06/2018	Silty sand								
PIT38	0.5-0.6	22/06/2018	Silty sand								
PIT39	0.0-0.1	22/06/2018	Topsoil (sand silt)								
PIT40	0.0-0.1	22/06/2018	Silty sand								
BD1/22	0.0-0.1	22/06/2018	Silty sand								
PIT40	0.5-0.6	22/06/2018	Silty sand	NT	NT	NT	NT	NT	NT	NT	NT
PIT41	1.0-1.1	25/06/2018	Filling (sandy silty clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT41	2.0-2.1	25/06/2018	Silty clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT42	0.5-0.6	25/06/2018	Filling (clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT43	0.5-0.6	25/06/2018	Filling (sandy silt)	NT	NT	NT	NT	NT	NT	NT	NT
PIT43	1.5-1.6	25/06/2018	Silty clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT44	1.0-1.1	25/06/2018	Filling (sandy silt)	NT	NT	NT	NT	NT	NT	NT	NT
PIT45	0.5-0.6	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT45	1.5-1.6	26/06/2018	Sandy clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT46	1.0-1.1	26/06/2018	Sand clay	NT	NT	NT	NT	NT	NT	NT	NT
PIT47	0.5-0.6	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT47	1.5-1.6	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT48	1.0-1.1	26/06/2018	Filling (sandy clay)	NT	NT	NT	NT	NT	NT	NT	NT
PIT49	0.0-0.1	22/06/2018	Topsoils (sandy silt)								
PIT50	0.0-0.1	22/06/2018	Filling (silty sand)								
Pit51	0.5-0.6	19/06/2018	Filling (clayey silty sand)								
BD3/19	0.5-0.6	19/06/2018	Filling (clayey silty sand)								
Pit52	1.5-1.6	19/06/2018	Clayey silt								
Pit53	0.5-0.6	19/06/2018	Filling (sandy silt)								
Pit54	0.5-0.6	19/06/2018	Silty Sand								
Pit55	0.0-0.1	19/06/2018	Sandy Clay								
Pit56	0.5-0.6	19/06/2018	Filling (gravelly sand)								
Pit56	1.0-1.1	19/06/2018	Gravelly sand								
Pit57	0.5-0.6	20/06/2018	Filling (gravelly sand)								
Pit57	1.0-1.1	20/06/2018	Filling (gravelly sand)								
Pit57	2.2-2.3	20/06/2018	Clay								
Pit58	0.0-0.1	20/06/2018	Clayey Sand								
Pit59	0.5-0.6	19/06/2018	Silty Clay								
Pit60	0.0-0.1	20/06/2018	Topsoil (sandy silt)								
Pit61	0.0-0.1	19/06/2018	Silty sand								
BD2/19	0.0-0.1	19/06/2018	Silty sand								
Pit62	0.0-0.1	19/06/2018	Topsoil (silty sand)								
Pit63	0.0-0.1	18/06/2018	Filling (silty clay)								
Pit64	0.5-0.6	18/06/2018	Sandy clay								
Pit65	0.5-0.6	18/06/2018	Filling (sandy silt)								
Pit66	0.5-0.6	18/06/2018	Silty Clay								
Pit67	0.0-0.1	19/06/2018	Topsoil (silty clay)								

Sample ID	Depth (m)	Sample Date	Material Type	Benzene	Toluene	Ethylbenzene	Xylene	F1	F2	F3	F4
Pit68	0.0-0.1	18/06/2018	Topsoil (silty clay)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit69	0.5-0.6	18/06/2018	Sandy clay	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit70	0.0-0.1	19/06/2018	Filling (silty sand)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
BD1/18	0.0-0.1	19/06/2018	Filling (silty sand)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit70	0.5-0.6	19/06/2018	Silty sand	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit71	0.0-0.1	19/06/2018	Silty sand	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit72	0.5-0.6	19/06/2018	Sandy silt	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit73	0.0-0.1	19/06/2018	Topsoil (sandy silt)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit74	0.0-0.1	19/06/2018	Sandy clay	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit75	0.5-0.6	19/06/2018	Clay	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit76	0.0-0.1	19/06/2018	Filling (silty sand)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit76	2.0-0.1	19/06/2018	Filling (silty sand)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pit77	0.5-0.6	19/06/2018	Filling (gravely sand)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
PIT78	0.0-0.1	25/06/2018	Filling (sandy clay)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
PIT79	0.0-0.1	25/06/2018	Filling (sandy silt)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
PIT80	0.0-0.1	25/06/2018	Filling (sandy clay)	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
PQL				0.2	0.5	1	3	25	50	100	100
HSL-C				NL	NL	NL	NL	NL	NL	NC	NC
HSL-D				3	NL	NL	230	260	NL	NC	NC
ESL				65	105	125	45	180	120	1,300	5,600
ML				NC	NC	NC	NC	700	1,000	2,500	10,000

Notes:

HSL-C - Health Based Soil Screening Levels for Public Open Space Landuse Values
HSL-D - Health Based Soil Screening Levels for Commercial / Industrial land use values
ESL - Environmental Soil Screening Levels for lower bound Public Open Space Landuse Values
ML - Management Limits for petroleum hydrocarbons
PQL - Practical Quantitation Limit

NC/NL	- No Criteria/Not Limiting
BD1/18	Replicate of Pit 70 0.0-0.1
BD2/18	Replicate of Pit 61 0.0-0.1
BD3/18	Replicate of Pit 51 0.5-0.6

Douglas Partners

TABLE J4
SUMMARY OF LABORATORY TEST RESULTS - ORGANICS (PAH, Phenol, OCP, OPP, PCB - mg/kg)

Sample ID	Depth (m)	Sample Date	Material Type	BaP	BaP TEQ	Naphthalene	Total PAHs	Phenol	DDT+ DDE+ DDD	Aldrin+ Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Chlorpyrifos	Total OCPs	Total OPPs	Total PCBs	Asbestos
BH1	0.5-0.95	13/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH2	1.0-1.4	13/06/2018	Filling (clayey sand)	<0.5	<0.5	<1	<10	<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	NAD
BH3	2.0-2.1	13/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH3	0.5-0.6	13/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH5	0.5-0.6	21/06/2018	Filling (clayey sand)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH5	1.0-1.1	21/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH6	0.0-0.1	21/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH6	2.0-2.1	21/06/2018	Filling (sandy clay)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH6	1.0-1.1	21/06/2018	Filling (silty clay)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH8	0.5-0.6	22/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH10	0.0-0.1	13/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH10	1.0-1.1	13/06/2018	Filling (silty clay)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH12	0.0-0.1	25/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH12	2.0-2.1	25/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH13	0.5-0.6	27/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH14	0.5-0.6	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH14	1.0-1.1	28/06/2018	Sandy silt	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH15	0.5-0.6	27/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH15	1.0-1.1	27/06/2018	Filling (gravelly silty clay)	<0.5	<0.5	<1	<10	<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	NAD
BH16	0.0-0.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	<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	NAD
BH16	1.0-1.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH17	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH17	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	<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	NAD
BH18	0.0-0.1	27/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH19	0.0-0.1	28/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH19	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH20	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH20	1.0-1.1	28/06/2018	Sandy clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH21	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH22	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH23	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH24	0.0-0.1	28/06/2018	Topsoil (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH25	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH26	0.0-0.1	28/06/2018	Filling (gravelly sand)	<0.5	<0.5	<1	<10	<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	NAD
BH27	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH27	1.5-1.6	28/06/2018	Sandy Clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH28	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH28	0.5-0.6	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH29	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH30	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH31	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH31	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH32	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH32	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH33	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH33	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH34	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH34	1.0-1.1	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH35	0.0-0.1	27/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH36	0.0-0.1	27/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH37	0.5-0.6	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH38	0.0-0.1	27/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH38	0.5-0.6	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH39	0.0-0.1	27/06/2018	Topsoil (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH39	0.5-0.6	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH40	0.0-0.1	27/06/2018	Topsoil (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH40	0.5-0.6	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH41	0.0-0.1	27/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH41	1.0-1.1	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH42	0.0-0.1	27/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH42	0.5-0.6	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH43	0.0-0.1	27/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH43	0.5-0.6	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH44	0.0-0.1	27/06/2018	Filling (silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH44	1.0-1.1	27/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH45	0.5-0.6	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH45	1.5-1.6	28/06/2018	Sandy clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH46	1.0-1.1	28/06/2018	Sandy clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH47	0.0-0.1	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	<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	NAD
BH47	1.5-1.6	28/06/2018	Filling (clayey silty sand)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH48	1.0-1.1	28/06/2018	Filling (silty clay)	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH49	0.0-0.1	22/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH50	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH50	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH51	0.0-0.1	28/06/2018	Silty sand	<0.5	<0.5	<1	<10	<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	NAD
BH51A	0.0-0.1	28/06/2018	Silty sand	<0.5	<0.5	<1	<10	<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	NAD
BH52	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH53	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH54	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH54	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH55	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH55	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH56	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH56	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH57	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH57	0.5-0.6	28/06/2018	Silty clay	<0.5	<0.5	<1	<10	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH58	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH59	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
BH60	0.0-0.1	28/06/2018	Topsoil (sandy silt)	<0.5	<0.5	<1	<10	<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	NAD
EQL				0.05	0.5	1	10	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
HIL-C/HSL-C				NC	1	NL	NL	30,000	640	10	70	340	10	10	10	640	640	NC	NC	1	NC
HIL-D/HSL-D				NC	40	NL	4,000	240,000	7,200	50	530	4,500	100	50	50	7,200	7,200	NC	NC	7	NC
ESLs				0.7	NL	170	NL	NC	1,800	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Notes:
HIL-C/HSL-C - Health-based Soil Investigation Screening Levels for Public Open Space Land use (Vapour)
HIL-D/HSL-D - Health-based Soil Investigation Screening Levels for Commercial / Industrial land use (Vapour)
ESLs - Ecological Soil Investigation Screening Levels for Urban Areas / Public Open Space Land use (Vapour)
PQL - Practical Quantitation Limit
A - Exceeds HIL and/or ESL criteria
NC - No Criteria
NT - Not Tested
BH3-18 - Duplicate of BH3 (0.5-0.6)

Douglas Partners
Geotechnics / Environment / Groundwater

TABLE J5
SUMMARY OF LABORATORY TEST RESULTS - MICROBIOLOGY

Sample ID	Depth (m)	Sample Date	Material Type	*Eschericia Coli* in soil	Salmonella in soil	Faecal Coliforms
PIT41	1.0-1.1	25/06/2018	Filling (sandy silty clay)	<PQL	ND	<PQL
PIT41	2.0-2.1	25/06/2018	Silty clay	<PQL	ND	<PQL
PIT42	0.5-0.6	25/06/2018	Filling (clay)	<PQL	ND	<PQL
PIT43	0.5-0.6	25/06/2018	Filling (sandy silt)	<PQL	ND	<PQL
PIT43	1.5-1.6	25/06/2018	Silty clay	<PQL	ND	<PQL
PIT44	1.0-1.1	25/06/2018	Filling (sandy silt)	<PQL	ND	<PQL
PIT45	0.5-0.6	26/06/2018	Filling (sandy clay)	<PQL	ND	<PQL
PIT45	1.5-1.6	26/06/2018	Sandy clay	<PQL	ND	<PQL
PIT46	1.0-1.1	26/06/2018	Sand clay	<PQL	ND	<PQL
PIT47	0.5-0.6	26/06/2018	Filling (sandy clay)	<PQL	ND	<PQL
PIT47	1.5-1.6	26/06/2018	Filling (sandy clay)	<PQL	ND	<PQL
PIT48	1.0-1.1	26/06/2018	Filling (sandy clay)	<PQL	ND	<PQL
Units				MPN/100g	50g	MPN/100g
PQL				200	50	200

0

Notes:
HIL C - Health Based Soil Investigation Levels for Public Open Space Landuse Values
HIL D - Health Based Soil Investigation Levels for Commercial / Industrial land use values
EIL - Environmental Soil Investigation Levels for lower bound Public Open Space Landuse Values
PQL - Practical Quantitation Limit
ND - Not detected
NT - Not Tested
R1 - Replicate of Pit 3/0.1m