coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

DETAILED SITE INVESTIGATION
BANKSTOWN GOLF COURSE
CORNER OF BULLECOURT AVENUE AND BULLECOURT LANE
MILPEERA NSW 2214

Prepared for:

Bankstown Golf Club Limited
70 Ashford Avenue
Milperra NSW 2214

Report Date: 15 February 2013
Project Ref: ENAURHOD04454AA

Written by:

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Associate

Reviewed by:

Sam Gunasekera
Principal

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SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

15 February 2013

Bankstown Golf Club Limited
70 Ashford Avenue
Milperra NSW 2214

Attention: Mr Peter Hall

Dear Peter

RE: Detailed Site Investigation - Bankstown Golf Course, Corner of Bullecourt Avenue and Bullecourt Lane, Milperra, NSW 2214

Coffey Environments Australia Pty Ltd (Coffey) is pleased to present this report for the Detailed Site Investigation undertaken at the Bankstown Golf Course, located on 70 Ashford Avenue, Milperra, NSW.

We wish to draw your attention to the attached ***Important Information About Your Coffey Environmental Report***

Should you have any queries regarding this report, please do not hesitate to contact the undersigned on (02) 0406 1000.

For and on behalf of Coffey Environments Australia Pty Ltd

Sam Gunasekera
Principal

cc -

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ABBREVIATIONS

ACM	Asbestos Containing Materials
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ASSMP	Acid Sulfate Soil Management Plan
AST	Aboveground Storage Tank
Bgs	below ground surface
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
C6-C36	Hydrocarbon chainlength fraction
COC	Chain of Custody
DBYD	Dial-Before-You-Dig
DLWC	Department of Land and Water Conservation (NSW)
DO	Dissolved Oxygen
DQI	Data Quality Indicator
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EC	Electrical Conductivity
Eh	Redox Potential
GAC	Groundwater Assessment Criteria
GME	Groundwater Monitoring Event
GPS	Global Positioning System
H_2SO_4	Sulfuric Acid
HBSIL	Health Based Soil Investigation Level

ABBREVIATIONS

HNO_3	Nitric Acid
ID	Identification
IP	Interface Probe
LOR	Limit of Reporting
MDL	Method Detection Limit
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
MW	Monitoring Well
NATA	National Association of Testing Authorities
NEHF	National Environmental Health Forum
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW DECCW	Department of Environment, Climate Change and Water of New South Wales
NSW EPA	Environment Protection Authority of New South Wales
NSW OEH	Office of Environment and Heritage of New South Wales
OCP	Organochlorine Pesticide
OPP	Organophosphorous Pesticide
PAH	Polycyclic Aromatic Hydrocarbon
PID	Photoionisation Detector
PPBIL	Provisional Phytotoxicity Based Investigation Level
ppm	parts per million
ppmv	parts per million by volume

ABBREVIATIONS

PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RB	Rinsate Blank
RPD	Relative Percent Difference
SAC	Soil Assessment Criteria
SOP	Standard Operating Procedures
SWL	Standing Water Level
TB	Trip Blank
TP	Test Pit
TPH	Total Petroleum Hydrocarbon
TS	Trip Spike
UST	Underground Storage Tank
USFT	Underground Storage Fuel Tank
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Coffey Environments Australia Pty Ltd (Coffey) was engaged by Bankstown Golf Club Limited (Golf Club) to prepare a Detailed Site Investigation (DSI) for Lots 161 and 272, Deposited Plan (DP) 752013, located on at the corner of Bullecourt Avenue and Bullecourt Lane (the site). A site location plan is provided in Figure 1.

It is understood that a planning proposal to rezone the site from Part Residential 2(a) and Private Recreational 6(b) was endorsed by Bankstown City Council (Council) in March 2012 to progress through the planning proposal process. The site is proposed to be rezoned as Residential 2(a).

A Preliminary Contamination Assessment (PCA) was undertaken by Goetechnique in 2011 and the report was part of the original spot rezoning proposal presented to Council in May 2011. The report concluded that the site was suitable for the residential development, subject to the implementation of a series of recommendations as a component of a DSI, prior to site preparation and earthworks.

Furthermore, based on the information provided by Bankstown City Council, it was understood that fuel leakage was previously detected from the underground petroleum storage system (UPSS) located in the maintenance shed located to the immediate north-east of the site. The UPSS system was subsequently decommissioned *in situ* byway of filling with sand.

Following the review of the PCA, Council has indicated that a DSI should be designed and undertaken to address the data gaps identified in the PCA. The information can then be used to assess if the site is suitable or can be made suitable for the proposed residential end use.

The objectives of this DSI are to assess if the site is suitable for the proposed land use – residential 2(a) in its current state and to identify if remediation can be undertaken to make the site suitable for the proposed residential 2(a) land use.

Based on the information provided in the PCA conducted by Geotechniques, the site was previously used as residential and/or rural residential until the Golf Club purchased the site in the early 1950s. There were several buildings / structures located in the southern portion of the site which were subsequently demolished after the site was converted as a practice green.

The storage shed, located in the north-eastern corner of the site, was erected in and around the early 1990s. The shed was used for equipment and chemical storage. A nursery green was formerly located to the immediate west of the shed, where grass was grown as a part of the golf course maintenance activities. A practice green is located in the north-western corner of the site, which was understood to have been used as a nursery green as well. The nursery green operation ceased as a result of insect infestation occurred at the golf course in a few years ago.

Based on observations made during the fieldwork, the site is generally underlain by topsoil with the exception of the area in the vicinity of the storage shed which was concrete paved. Fill material, comprising gravelly and silty sand or silty clay, was encountered in the north-western corner of the site and along the eastern site boundary. The fill material was underlain by silty sand and clay or sandy clay over weathered shale to the maximum depth of investigation of 12m bgs.

Groundwater inflow was not encountered during drilling and test pit excavation program. The depth to SWL in the three monitoring wells gauged at the site ranged from 1.5 m bgs to 2.4 m bgs. It was noted that the SWLs measured in all three groundwater monitoring wells were above the screened level. As the shale bedrock and shale derived clay are impermeable and with a very low porosity, instant water inflow could not be encountered during drilling. Water inflow is generally used as an indicator for the

well screening. Based on the topography of the site and the nearby surface water features, the groundwater direction is inferred to the west towards the Georges River.

Chrysotile asbestos was detected in the shallow one soil sample collected from a test pit (TP3) excavated close to the southern site boundary, in the form of fibre cement fragments, at depths ranging between 0.05m and 0.15m bgs. The source of the asbestos cement may be building materials the former structures or buildings located along the southern site boundary. Asbestos was not detected in other soil samples submitted for screening during this investigation.

Varying levels of heavy metals were reported in the soil samples analysed, but at concentrations below their respective soil assessment criterion (SAC). Copper was reported at concentration exceeding the phytotoxicity based investigation level (PPBIL) in one sample collected from fill soil from close to the centre of the site (at test pit location TP14) from surface soil. It is considered that this exceedance is associated with the unknown source of fill material.

PAH was detected in one soil sample collected from the fill material in sampling location MW3 on close to western property boundary. OCPs were detected in the shallow soil sample collected from sampling location MW2 which is likely to be attributable to the residual pesticides which might have been used when this area was used as a nursery green. It should be noted that the detected PAHs and OCPs concentrations were well below their respective SAC.

Concentrations of other potential contaminants of concern, including BTEX, TPH and OPP, were reported at concentrations below their respective laboratory LORs.

Visual and/or olfactory signs of hydrocarbon contamination were not observed during the soil sampling program. Based on the ground conditions encountered during this investigation and those observed by Geotechniques (2011), there is insufficient evidence to suggest that a chicken farm had been operated at the site and had such activity been undertaken, it had not given rise to significant land contamination impacts.

Although no soil sampling could not be undertaken at the storage shed footprint, given that soil and groundwater contamination were not encountered in the boreholes, test pits and monitoring wells located in the vicinity of the shed, it is considered significant soil and groundwater contamination is unlikely to be present at the storage shed.

A total of three groundwater samples were collected from the newly installed monitoring wells. Concentrations of TPH and BTEX were not detected at concentrations above their respective laboratory LORs. Varying concentrations of PAH compounds were detected in the three groundwater samples, but below their respective groundwater assessment criteria (GAC).

Elevated concentrations of arsenic, cadmium, copper, lead, nickel and zinc were detected at concentrations exceeding their respective GAC. Arsenic and mercury were detected in some of the groundwater samples, but at concentrations below their respective GAC. The presence of the heavy metals is likely to be attributable to the regional groundwater quality. The detected concentrations are considered to be minor and that the highest concentration was reported from the groundwater sample collected from MW1, the inferred upgradient well, suggesting that the source of the heavy metals is likely to be coming from an upgradient source and possibly regional, not related to historical and current site activities.

Based on the findings of the investigation, it is concluded that:

EXECUTIVE SUMMARY

- The thickness of the fill materials encountered, and the locations which were encountered from, were similar to those observed during the PCA conducted by Geotechniques in 2011. Imported materials were likely to be used during the construction of the storage shed and practice green.
- The site appears to be not significantly impacted by historical and current site activities, with the exception of the area in the vicinity of test pit TP3 where asbestos impacted soil was detected in near surface.
- The north-eastern corner of the site appears to be not significantly impacted by the leaking UPSS infrastructure which was formerly located to the immediate north-east of the site.
- On the basis that petroleum compounds were not detected at concentrations exceeding their GAC, it appears that the former UPSS infrastructure located to the immediate north-eastern corner of the site, has not significantly impacted the underlying groundwater quality at the site. The heavy metals detected in groundwater are likely to be representative of the regional groundwater quality.

It is considered that the site can be made suitable for the proposed residential uses after the implementation of the following actions:

- Removal of the asbestos impacted soils in the vicinity of test pit TP3 located along the southern site boundary. Validation samples should be undertaken to verify that the removal of the impacted soils is adequate.
- Visual inspection and/or soil sampling should be undertaken after the demolition of the storage shed to verify if soil contamination is present beneath the footprint of the shed.

A Remedial Action Plan (RAP) will need to be prepared for the proposed remedial works and the validation works to be undertaken within the existing storage shed footprint. The RAP should include the remediation goals, remediation actions including management of waste materials generated, environmental controls to be implemented during remediation and validation plans.

An indicative cost estimate of the remediation costing is provided in Section 9.2. It is important to note that reasonably reliable remediation cost estimates can only be prepared following the preparation of a project specific remediation action plan. As such, the indicative cost estimate for remediation presented here-in should only be used to obtain a general idea of the order of remediation costs. It should not be treated as an “engineer’s estimate”.

This report should be read in conjunction with the attached ***Important Information About Your Coffey Environmental Report***.

1 INTRODUCTION

1.1 Background

Coffey Environments Australia Pty Ltd (Coffey) was engaged by Bankstown Golf Club Limited (Golf Club) to prepare a Detailed Site Investigation (DSI) for Lots 161 and 272, Deposited Plan (DP) 752013, located on 70 Ashford Avenue, Milperra, NSW (the site). A site location plan is provided in Figure 1.

A planning proposal to rezone the site from Part Residential 2(a) and Private Recreational 6(b) was endorsed by Bankstown City Council (Council) in March 2012 to progress through the planning proposal process. The site is proposed to be rezoned for Residential 2(a) – low density residential.

A Preliminary Contamination Assessment (PCA) was undertaken by Geotechnique in 2011 and the report was part of the original spot rezoning proposal presented to Council in May 2011. The report concluded that the site was suitable for the residential development, subject to the implementation of a series of recommendations as a component of a DSI, prior to site preparation and earthworks. The recommendations were:

- *Assessment and further sampling of the fill, soil stockpiles and residual soils in the footprints of former buildings in the southern portion of the site.*
- *Assessment of soils in the footprints of the shed and hard stand area after complete demolition and removal. The purpose is to ascertain the presence of "suspect" materials (identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos, ash particles, etc.) and fill, which were not encountered during the fieldwork for this assessment.*
- *Sampling and testing may be required to determine the contamination status of soils in the footprints of site features. The type of testing on samples recovered from the footprints will depend on the materials (topsoil, natural soil, suspected materials or fill) encountered.*
- *Assessment of soils along the eastern and north-eastern boundaries of the site to determine the impact of the site activities in the adjoining eastern properties and the presence of UFST [underground fuel storage tank] in the northern property.*
- *Groundwater assessment, by installation of groundwater monitoring wells, as well as sampling and analysis of groundwater might be required. The purpose of groundwater assessment is to determine whether groundwater in the site is likely to be impacted by and be vulnerable to on-site or off-site activities and the presence of the UFST in the adjoining northern property. In the event that groundwater is assessed to present or potentially present a risk of harm to human health and/or the environment, a more detailed assessment and possibly remediation and validation could be required.*

Furthermore, based on the information provided by Bankstown City Council, it was understood that fuel leakage was previously detected from the underground petroleum storage system (UPSS) located in the maintenance shed located to the immediate north-east of the site. The UPSS system was subsequently decommissioned *in situ* byway of filling with sand.

Following the review of the PCA, Council has indicated that a DSI should be designed and undertaken to address the data gaps identified in the PCA. The information from the DSI can then be used to assess if the site is suitable or can be made suitable for the proposed residential end use.

1.2 Objectives

The objectives of this DSI are to:

- Assess if the site is suitable for the proposed land use – residential 2(a) in its current state;
- If the site is not suitable in its current state, identify if remediation can be undertaken to make the site suitable for the proposed residential 2(a) land use; and
- If remediation is required, provide a range of remedial options including the preferred option. An indicative cost estimation for the preferred option is also required.

1.3 Scope of Works

The scope of works included the following:

- Obtaining a well licence from NSW Office of Water prior to the fieldwork. A copy of the Well Licence is provided in Appendix A;
- Reviewing the previous PCA report prepared by Geotechniques;
- Reviewing the Limited Environmental Site Assessment (ESA) prepared by Enviropacific for the former UPSS infrastructure located to the immediate north-east of the site;
- Undertaking a site walkover prior to fieldwork;
- Obtaining Dial-Before-You-Dig (DBYD) Plans prior to fieldwork;
- Clearing all sampling locations using a qualified cable locator, following by hand augering at the three drilling locations to 1.2m below ground surface (m bgs) for underground service clearance;
- Drilling of three boreholes using a Geoprobe to a maximum depth of 12 m bgs;
- Excavating thirty-four (34) test pits across the site using a backhoe to a maximum depth of 2.5m bgs;
- Collecting soil samples from each borehole and test pit, at the surface and at regular intervals thereafter, or where there is a change in material type or field evidence of potential contamination is observed;
- Logging of materials observed in boreholes and test pits according to the Unified Soil Classification System (USCS) and recording borehole and test pit locations using a handheld Global Positioning System (GPS) device;
- Headspace field screening of collected samples for ionisable volatile organic compounds (VOC) using a calibrated photo-ionisation detector (PID);
- Converting the three boreholes into groundwater monitoring wells. Each well was constructed using 50mm PVC screen and casing, a sand gravel pack, and finished with a bentonite seal and flush mount cast iron road box. The monitoring well locations were selected to target the leaked UPSS and the anticipated groundwater flow direction;
- Developing the newly installed monitoring wells after completion of drilling works;
- Sampling of three groundwater monitoring wells seven days after well development;
- Storage of samples in laboratory supplied jars and bottles, placement of samples in insulated containers with ice and transported to the laboratory under chain of custody control;
- Implementing quality assurance / quality control program for the assessment;

- Dispatching soil and groundwater samples to NATA accredited laboratories under chain of custody (COC) protocol;
- Laboratory analysis of selected soil samples at NATA accredited laboratories for Total Petroleum Hydrocarbon (TPH), Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), Organochlorinate Pesticides (OCP), Organophosphate Pesticides (OPP), Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc and asbestos;
- Laboratory analysis of groundwater samples for TPH, BTEX, PAH (ultra-trace level) and heavy metals; and
- Preparing this Detailed Site Investigation Report.

2 SITE INFORMATION

2.1 Site Identification

The site is located at the corner of Bullecourt Lane and Bullecourt Avenue, Milperra, NSW. The site is located within the southern portion of the Bankstown Golf Course and has been used as a practice green. The legal address of the Golf Course is 70 Ashford Avenue, Milperra, NSW.

The site is bound by Bullecourt Lane to the east, Bullecourt Road to the south, residential properties to the west and the clubhouse building to the north. The Golf Club maintenance shed is located to the immediate north-east of the site where the UPSS was previously located. Two aboveground storage tanks (ASTs) were recently installed within the maintenance shed area.

The site is located within Lots 161 and 272 DP752013 and has been zoned Part Residential 2(a) and Private Recreational 6(b) under the Bankstown Local Environment Plan 2001.

The site layout plan, including the site boundary and the key site features, is provided in Figure 2.

2.2 Proposed Rezoning

Based on the information provided to Coffey, the Council, on behalf of the Golf Club, has submitted a rezoning proposal for the site to be rezoned as residential 2(a) – low density residential

2.3 Site Description

The site is assessed via Bullecourt Lane which is located to the immediate east of the site. The site is bound by the remainder of the golf course to the north, residential properties to the west and Bullecourt Avenue to the south. The site is roughly square in shape and has an approximate area of 2.6 hectares.

The site is grassed covered with the exception of the north-eastern corner of the site where the storage shed is located. The shed is used for chemical and equipment storage. A former nursery green was located to the immediate west of the shed which is now surrounded by mature trees.

A practice green area is located in the north-western corner of the site which at the time of the investigation of consists of three soil stockpiles and scrubs. Several mature trees are scattered across the site. An unlined open stormwater drain is located along the northern portion of the site.

The main site features are shown in Figure 2.

2.4 Topography, Geology and Hydrogeology

A review of the 1:250,000 Sydney Geological Series Sheet S1 56-5 indicates that the site is underlain by Ashfield shale by the Triassic age of the Wianamatta Group, comprising shale with some sandstone beds (NSW Department of Mines, Second Edition, 1963).

A review of the 1:100,000 Penrith Soil Landscape Series Sheet 9030 indicates that the site is located within the Blacktown landscape area. The landscape typically comprises gently undulating rises on Wianamatta Group shales. The local relief is generally up to 30m. The slope is less than 5%, broad rounded crests and ridges with gently inclined slopes. The area has cleared eucalypt woodland and tall open forest (dry sclerophyll forest).

The soils can be described as shallow to moderately deep (<100cm), hard setting mottled texture contrasts soils (red and brown podozolic soils) on crests grading to yellow podzolics soils on lower slopes in drainage lines. The limitations of this landscape include moderately reactive high plastic subsoil, low soil fertility and poor soil drainage.

Based on the information provided in the Geotechniques (2011) Report, there are four registered groundwater bores within a 1km radius of the site. The bores were registered for various purposes, including monitoring, test bore, irrigation and domestic uses.

The site is relatively flat with a gentle slope towards the north-west. Based on the topography of the site, and the nearby surface water feature, the groundwater flow at the site is inferred to the west towards the Georges River.

2.5 Acid Sulfate Soils

A review of the 1:25,000 Liverpool Acid Sulfate Soil Risk Map Sheet 9030-S2 indicates that there are no known occurrences of acid sulfate soil materials within the site (DLWC, 1997).

2.6 Surrounding Environment

The main section of the Bankstown Golf Course, including the greens, clubhouse and other ancillary structures, is located to the immediate north of the site.

An open stormwater drain is located along the northern site boundary. The nearest surface water feature is the Georges River which is approximately 1km north-west of the site. It is also known that there are a number of dams located within the main golf course area to the north of the site.

2.7 Previous Investigation Report Review

The aforementioned PCA report was prepared by Geotechniques in May 2011 to support the rezoning proposal:

Geotechniques Pty Ltd (2011) Preliminary Contamination Assessment, Bankstown Golf Course, 70 Ashford Avenue, Milperra, prepared for SJB Planning Pty Ltd, May 2011.

Additionally, a Limited Environmental Site Assessment (ESA) was also prepared for the UPSS infrastructure located to the immediate north-east of the site. The assessment was conducted by Enviropacific Pty Ltd (Enviropacific) in December 2012 following the decommissioning of the UPSS infrastructure:

Enviropacific Pty Ltd (2013) Limited Environmental Site Assessment, Bankstown Golf Course, 70 Ashford Avenue, Milperra, prepared for Perotec Pty Ltd, January 2013.

The reports were reviewed and summarised in the sections below:

2.7.1 Geotechniques (2011)

Geotechniques was engaged by SJB Planning Pty Ltd to undertake a PCA at the site. The objective of the PCA was to ascertain if the site ‘is likely to present a risk of harm to human health and/or the environment under the conditions of the proposed residential development’.

The site history review revealed that the site was purchased by the Golf Club in the early 1950s. A review of the historical aerial photograph revealed that some buildings were located in the southern

portion of the site that were demolished in and around 1970. The site layout has essentially been uncharged since 1978, with the exception of the construction of the existing shed located in the north-eastern corner of the site in the 1990s.

The dangerous goods search results indicated that there was no fuel storage at the site. However, the record showed that two underground storage tanks (USTs) were located in the maintenance shed located to the immediate north of the site, which were owned and maintained by the Golf Club.

The PCA also included an intrusive investigation where a total of 40 test pits were excavated across the site. The test pit was excavated to a maximum depth of 3m bgs.

Based on the site observations, the majority of the site was covered by topsoil to depths ranging between 0.1m and 0.3m bgs. Fill material was encountered in the eastern and northern portion of the site, comprising gravelly silty sand and clay to depths between 0.1m and 1.5m. The fill material was underlain by natural clayey soils. Groundwater was not encountered during fieldwork. A stockpile of soil was observed in the north-eastern corner of the site, with a height of about 1.0m. Geotechniques stated that no asbestos-cement pieces were noted in the test pits and recovered soil samples.

A total of 11 composite soil samples were prepared using three equal-mass constituent samples from three test pit locations. All discrete soil samples were collected from the top 0.15m for analysis. All composite samples were analysed for metals, of which six of them were also analysed for OCPs.

The soil analytical results indicated that concentrations of metals and OCPs were below adopted soil criteria for low density residential land use. Zinc was detected at concentration exceeding the provisional phytotoxicity based investigation level (PPBIL) in one composite sample. The individual discrete samples were analysed and the reported concentrations were below the PPBIL.

It was concluded that the site was considered suitable for the proposed residential development, subject to the implementation of a Stage 2 Contamination Assessment. The investigation should include the assessment of the following:

- Sampling and testing of the fill, soil stockpiles and residual soils in the footprints of the former buildings in the southern portion of the site;
- Assessment of the soils in footprints of the shed and hardstand after complete demolition and removal to ascertain the presence of ‘suspect’ materials. In the event of contamination, detailed assessment, remediation and validation will be required;
- Assessment of soils along the eastern and north-eastern boundaries of the site to determine the impact of the site activities in the adjoining eastern properties and the presence of UFST in the northern property; and
- Groundwater assessment to determine whether groundwater in the site is likely to be impacted by and be vulnerable to on-site or off-site activities and the presence of the UST in the adjoining northern property.

2.7.2 Enviropacific (2013)

Enviropacific Services Pty Ltd (EPS) was engaged by Perotec Pty Ltd to conduct a Limited contamination assessment in the vicinity of the former UPSS located in the maintenance shed located to the immediate north of the site. The objective of this assessment was to assess if the soils in the vicinity of the UPSS were impacted by past UPSS uses.

The former UPSS consisted of two USTs which were located to the north of the workshop. The capacities of the tanks were 2,000L and 5,000L which were used to store unleaded petrol and diesel, respectively. Two bowsers were previously located adjacent to the tanks. The USTs were abandoned *in situ* which involved partial excavation and exposure followed by subsequent filling with stabilised sand. EPS indicated that there was anecdotal evidence to suggest that the 2,000L tank was decommissioned in 2011.

A total of three boreholes were drilled to a maximum depth of 2.4m bgs in the vicinity of the tankfarm area. Fill material was encountered to approximately 0.3m bgs which was underlain by sands and silty sandy clay to 2.4m bgs which was the limit of investigation. One soil sample was analysed from each boreholes for TPH, BTEX, PAH and lead. Based on the analytical results, EPS assessed that the soils in the vicinity of the tanks were not impacted by the past use. EPS concluded that '*there has been no detection of historical leakage from the USTs and/or associated infrastructure within the tank farm and that there were no identified secondary sources of fuel product within the backfill sands surrounding the abandoned USTs*'.

2.8 Site Visit

A site visit was undertaken by a Coffey Associate Environmental Engineer on 17 January 2013 and accompanied by Mr Peter Hall of Bankstown Golf Club Limited. Selected site photographs taken during the site walkover are provided in Appendix B.

At the time of the site visit, the site was grassed covered with the exception of the area in the vicinity of the storage shed which was concrete paved. The key site features observed during the site visit are summarised below:

- A storage shed was located at the north-eastern corner of the site which was used for the storage of chemicals, tools and machinery. The shed was concrete paved which was noted in good conditions, with no major cracks and staining observed. The chemicals are stored behind a metal fence and in plastic drums and/or bottles. Scraped metals and tyres were stored around the shed.
- It is known that a nursery green was used to be located to the immediate west of the site. The green was not present at the time of site visit.
- The practice green located in the north-western corner of the site consisted of three sandy stockpiles and scrubs. The stockpiles were approximately 2m high. The practice green was formerly also used as a nursery green based on information provided by the Golf Club.
- The vegetation did not appear to have significant signs of phytotoxic impact (e.g. stress or dieback) during the site visit.
- An unlined open stormwater drain was observed along the northern site boundary. Water was present in the drain at the time of site visit. No visual and/or olfactory signs of contamination were observed.
- No evidence of spills in the form of staining was observed on-site surfaces during site walkover.
- No aboveground storage tanks (ASTs) or the evidence of the presence of underground were observed during the site visit.

- There was no apparent visual evidence observed to indicate the widespread presence of fill material on the site. However, based on the geological data obtained from the previous investigation, it is understood that fill materials are present in the northern and eastern portion of the site.
- Waste was not noted to be generated from the site.
- There were no apparent visual evidence of potential asbestos containing materials (ACM) observed on the surface of the site during the site visit.

In addition to the site, the workshop and maintenance shed, located to the immediate north-east of the site, were also visited. The workshop was also used as a wash bay where equipment is being cleaned. Two ASTs were observed at the site and have an approximate capacity of 5,000L each. Two bowsers were also observed adjacent to the ASTs. To the immediate east of the workshop, two soil stockpiles were noted which are used for the maintenance of the bulkers and fairways at the main golf course.

2.9 Anecdotal Evidence

Information provided by Mr Peter Hall and Mr Nathan Bentley of the Bankstown Golf Club Limited during the site visit included the following:

- The site has been used as a practice green since the Golf Club purchased the site in the 1950s.
- The central portion of the site was known to be used as a chicken farm in the past, before the site was purchased by the Golf Club.
- The two former nursery greens were set up to help generating the grass in the main fairways. The operation ceased a few years ago due to insect infestation.
- The former UPSS located in the main workshop located to the immediate north of the site was decommissioned *in situ*. Two ASTs were recently installed to replace the UPSS.

3 FIELD AND LABORATORY PROGRAM

3.1 Overview

The objective of this field and laboratory program is to assess if soil and/or groundwater contamination is present at the site as a result of the current and historical site operations. The data is used to support the rezoning proposal and to assess if the site is suitable or can be made suitable for the proposed residential redevelopment.

It should be noted that no sampling could not be undertaken inside the storage shed as there was insufficient headroom for the drilling rig to operate. Test pit excavation through concrete was not feasible without inflicting significant damage of the concrete slab.

The fieldwork was designed to meet NSW EPA *Sampling Design Guideline (1995)* minimum sampling points required for site characterisation in Table A of the document. Systematic sampling pattern was adopted to provide sufficient site coverage. In summary, the field and laboratory program consisted of:

- Drilling of three boreholes (MW1 to MW3) using a Geoprobe equipped with soil push tube and solid flight augers. Boreholes were carried out to depths ranging from 8.0m to 12.0m bgs to facilitate groundwater well installation;
- Excavating 34 test pit (TP1 to TP33) using a backhoe until target depths were reached. Test pitting were carried out to depths ranging between 1.0m to 2.5m bgs, extending 0.5m into the underlying natural soils at each location;
- It should be noted that test pits TP28 to TP30 were excavated from the top of the existing stockpiles on-site and extended into 0.5m of the natural soils;
- Converting the three boreholes into groundwater monitoring wells;
- Collection of soil samples at regular intervals or at depths where visual and/or olfactory signs of contamination was observed;
- Logging of soil lithology and screening of soils in the field for evidence of potential contamination;
- Development of the wells, followed by groundwater gauging and sampling;
- Survey of each borehole and test pit using a handheld GPS;
- A Quality Assurance/Quality Control (QA/QC) program, comprising the application of standard procedures for environmental assessment, use of NATA accredited laboratories and collection and analysis of Quality Assurance samples; and
- Laboratory analysis of selected soil and groundwater samples at NATA accredited laboratories.

Details of the field and laboratory methods applied are provided as follows:

3.2 Field Methods and Procedures

Fieldwork was undertaken by Coffey environmental scientists on 23-25 and 31 January 2013.

Sample collection was conducted in general accordance with relevant Coffey Standard Operating Procedures which are based on general industry standards, the *National Environment Protection (Assessment of Contamination) Measure (1999)*, and Australian Standards AS4482.1 and AS4482.2,

Guide to Investigation and Sampling of Sites with Potentially Contaminated Soil (Part 1 Non-volatile and semi-volatile compounds; and Part 2 Volatile Substances).

3.2.1 Underground Services Locating

Copies of the Dial-Before-You-Dig (DBYD) plans of the site were obtained and reviewed by Coffey prior to the commencement of fieldwork. The locations of the on-site irrigation pipes were located with the Mr Nathan Bentley, the Green Keeper, prior to the fieldwork.

Cable location was undertaken on 23 January 2013, to inform the set-out of borehole locations. A cable locator was used to identify the locations of subsurface cables and services in the vicinity of the proposed borehole and test pit locations.

3.2.2 Hand Augering

In accordance with Coffey procedures to further reduce the risk of underground services being impacted, all three borehole locations were also initially extended by hand auger to a depth of 1.2m bgs prior to mechanical drilling.

The sampling location plan is provided in Figure 3. Soil lithology and observations were recorded on borehole and test pit logs, which are included in Appendix C.

3.2.3 Mechanical Drilling

Mechanical drilling was undertaken on 23 January 2013. Three boreholes, labelled MW1 to MW3, were drilled at the site to depths ranging between 8m and 12m bgs, at locations presented in Figure 3. Soil lithology and observations were recorded on borehole logs, which are included in Appendix C.

The boreholes were drilled using a Geoprobe. The boreholes were 50mm in diameter and were first drilled using push tubes, and then were extended using solid flight auger drilling methods to depths ranging between 8m bgs and 12m bgs.

The push tube was lined with disposable plastic PVC liners. A new 1m length liner was used for every 1m of push tube core advancement.

The approximate locations of boreholes were measured using a handheld GPS.

3.2.4 Test Pit Excavation

Test pit excavation was undertaken on 24 and 25 January 2013. A total of 34 test pits, labelled TP1 to TP33, were excavated across the site to depths ranging between 1m and 2.5m bgs, at locations presented in Figure 3. Soil lithology and observations were recorded on test pit logs, which are included in Appendix C.

The test pits were excavated using a backhoe attached with a bucket. Soil samples were collected from the central of the bucket at regular depths. All test pits were backfilled and reinstated using the excavated soil cutting.

The approximate locations of test pits were measured using a handheld GPS.

3.2.5 Monitoring Well Installation and Development

Three groundwater monitoring wells (MW1 to MW3) were installed as shown in Figure 3. Boreholes were first drilled using push tubes, and then were extended using solid flight auger drilling methods to depths ranging between 8m bgs and 12m bgs, prior to installation of groundwater monitoring wells at these locations.

Each of the newly installed monitoring wells was constructed using 50mm, flush jointed, threaded PVC and installed in boreholes with a minimum diameter of 100mm. The well screen was installed between approximately 3m bgs and 12m bgs. Well construction details are shown along with the borehole logs in Appendix C.

A sand filter pack was installed from the base of the screened interval to approximately 0.5m above the screen. A bentonite seal, consisting of pelleted bentonite, was placed above the filter pack to a thickness of approximately 0.5m. The bore annulus was filled with drill cuttings and the upper 100mm of the bore was sealed with cement.

The drill cuttings were used as backfilled material to reinstate the test pit during the test pitting program.

Monitoring well development was undertaken on 25 January 2013. Well development consisted of surging the well with a steel bailer to allow water to flow freely in and out of the screen and the removal of at least three bore volumes or the well was purged dry.

3.3 Soil Sampling and Analysis

Soil samples were collected directly from the hand auger, push tube liner or bucket using disposable nitrile gloves. Samples were collected at selected intervals, at ground surface and subsequent intervals of 1.0m, or where changes in lithology or potential contamination were observed. Soil samples were field screened in the field for Volatile Organic Compounds (VOC) using a calibrated photo-ionisation Detector (PID).

Following sample collection, all soil samples were immediately placed in ice chilled eskies. The eskies contained ice to maintain the internal temperature near 4ºC. The sample eskies were forwarded to mgt-LabMark Environmental Laboratories (mgt-LabMark) at Lane Cove West NSW under Coffey Chain-of-Custody (COC) protocols for chemical analysis for the Potential Contaminants of Concern. A verified copy of the COC was returned to Coffey along with the sample receipt acknowledgment. Copies of the COCs are presented in Appendix C.

The number of analytical tests scheduled for soil samples collected from the site is summarised in Table 3.1.

Table 3.1: Schedule of Analysis for Soil Samples

Analyte	Number of Soil Samples Analysed
TPH/BTEX	45
Heavy metals - As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	45
PAH/OCP/OPP	12

Analyte	Number of Soil Samples Analysed
Asbestos	45

Inter-laboratory (triplicate) samples were also collected and were analysed by a secondary laboratory. The secondary laboratory was Envirolab Service Pty Ltd, Chatswood, NSW.

3.4 Groundwater Monitoring and Sampling

A Groundwater Monitoring Event (GME) was undertaken on 31 January 2013. The standing water level of the three newly installed groundwater monitoring wells was measured to an accuracy of 0.001m, using an interface probe (IP), prior to purging the wells for sampling. The IP was washed with Decon 90 and rinsed with water after use at each well to avoid the possibility of cross-contamination.

All three monitoring wells were purged using disposable bailers. A new disposable bailer was used to sample each well. The bailer was inserted slowly into the well and water removed from the top of the water column. Purging was carried out until the field parameters (temperature, pH and electrical conductivity) had sufficiently stabilised, a total of three well volumes were removed or the well was purged dry.

All three monitoring wells were sampled on the same day following sufficient groundwater recharge using appropriate containers with appropriate preservatives supplied by mgt-LabMark.

Temperature, pH, electrical conductivity (EC), dissolved oxygen (DO) and redox potential (Eh) of purged groundwater and groundwater samples were measured and recorded on field data sheets during purging and sampling.

Following sample collection, all groundwater samples (including field QC samples) were immediately placed in ice chilled eskies. The eskies contained ice to maintain the internal temperature near 4ºC. The sample eskies were forwarded to mgt-LabMark under Coffey COC protocol for chemical analysis. A verified copy of the COC was returned to Coffey along with the sample receipt acknowledgment. Copies of the COCs are presented in Appendix D.

The number of analytical tests scheduled for groundwater samples collected from the site is summarised in Table 3.2.

Table 3.2: Schedule of Analysis for Groundwater Samples

Analyte	Number of Soil Samples Analysed
TPH/BTEX	3
Heavy metals - As, Cd, Cr, Cu, Pb, Ni, Zn, Hg	3
PAH (ultra-trace level)	3

3.5 Quality Assurance / Quality Control Plan

A QA/QC Plan was designed to achieve predetermined data quality indicators (DQIs) that demonstrate accuracy, precision, comparability, representativeness and completeness of the data generated. All

fieldworks and laboratory analysis was undertaken in accordance with the QA/QC Plan and is summarised below.

3.5.1 Quality Assurance

The fieldwork was undertaken by an experienced and appropriately qualified Coffey Environmental Scientist. Field procedures employed in the current fieldworks were consistent with relevant Coffey SOPs which are based on general industry standards, relevant schedules of the National Environment Protection (Assessment of Site Contamination) Measure (1999), and the Australian Standards AS4482.1 and AS4482.2, *Guide to Investigation and Sampling of Sites with Potentially Contaminated Soil (Part 1 Non-volatile and semi-volatile compounds; and Part 2 Volatile Substances).*

3.5.2 Field Quality Control Samples

The following QC samples were collected during the fieldwork program:

- A total of five soil intra-laboratory duplicates and two soil inter-laboratory duplicates were collected and submitted for chemical analysis;
- One groundwater intra-laboratory duplicate was collected and submitted for chemical analysis. Given that there are only three groundwater samples be analysed, an inter-laboratory triplicate was not collected as part of the QA/QC program;
- One equipment rinsate sample was collected each day from re-usable sampling equipment for chemical analysis. A total of three equipment rinsate samples (RB1 to RB3) of the hand auger were collected during soil sampling;
- One equipment rinsate sample was collected each day from re-usable sampling equipment for chemical analysis. One equipment rinsate samples (RB1) of the metal filter was collected; and
- Trip blanks (TB) and trip spikes (TS) were collected at a rate of one per sample batch and were analysed for BTEX and TPH C_6-C_9. A total of two sets of soil TB and TS and one set of water TB and TS were analysed.

3.5.3 Laboratory Quality Control Samples

Laboratory QC included the following:

- The laboratory analysis of primary and duplicate samples was undertaken by mgt-LabMark at Lane Cove West, which is NATA accredited for the chemical analyses undertaken. Analysis of soil samples for asbestos was undertaken by Australian Safer Environment & Technology Pty Ltd (ASET), which is NATA accredited for the asbestos analysis undertaken;
- The laboratory analysis of the secondary samples was undertaken by Envirolab Services at Chatswood, which is NATA accredited for the chemical analyses undertaken.
- Both laboratories implemented a QC plan conforming to the NEPC (1999) National Environment Protection Measure (NEPM) Guideline on Laboratory Analysis of Potentially Contaminated Soils; and
- Both laboratories performed reagent blanks, spike samples, duplicate spikes, matrix spikes, surrogate spikes and duplicates to assess laboratory QC.

4 DATA VALIDATION AND QUALITY ASSESSMENT

4.1 Fieldwork Data

4.1.1 Sampling

Sampling was undertaken in general accordance with the relevant sections of Coffey standard operating procedures (SOPs), which are based on accepted industry practices and by a suitably qualified Coffey environmental scientist.

Soil sampling was undertaken at regular intervals, at change of geological conditions and visual and/or olfactory signs of contamination. Groundwater sampling was undertaken following well purging and until field water quality parameters were stabilised.

4.1.2 Sample Storage and Transport

Soil samples were placed in laboratory prepared containers and stored in insulated containers with ice, for transportation to the NATA accredited analytical laboratory under Coffey COC protocol. Copies of the COC are presented in Appendix D.

4.1.3 Field Duplicates and Triplicates

Intra- and inter-laboratory soil duplicates were collected and analysed at a rate of one per 10 samples and one per 22 samples, respectively, during the soil sampling program.

Intra-laboratory groundwater duplicates were collected and analysed at a rate of one per three samples during the groundwater sampling program.

The results of duplicates and triplicates analysis, and RPD calculations, are presented in Table 3. The relative percent difference (RPD) between the primary samples, duplicates and triplicates analysed for soils were within the acceptance limits of 50%, with the exceptions presented in Table 4.1 below.

Table 4.1: Field Duplicates and Triplicate RPD Exceedences

Parent Sample ID	Duplicate/Triplicate ID	Analyte	RPD (%)
MW1_0.4-0.5	QC1	Zinc	86
MW1_0.4-0.5	QC1A	Cadmium	67
MW1_0.4-0.5	QC1A	Zinc	95
MW3_1.4-1.7	QC2	Arsenic	109
MW3_1.4-1.7	QC2	Copper	67
MW3_1.4-1.7	QC2	Nickel	78
MW3_1.4-1.7	QC2A	Chromium	59

Parent Sample ID	Duplicate/Triplicate ID	Analyte	RPD (%)
MW3_1.4-1.7	QC2A	Copper	105
MW3_1.4-1.7	QC2A	Lead	113
TP6_0.4-0.5	QC5	Lead	143
TP6_0.4-0.5	QC5	Zinc	143
TP33_0.4-0.5	QC11	Arsenic	142
TP33_0.4-0.5	QC11	Cadmium	100
TP33_0.4-0.5	QC11	Chromium	184
TP33_0.4-0.5	QC11	Copper	190
TP33_0.4-0.5	QC11	Lead	163
TP33_0.4-0.5	QC11	Zinc	189
MW1	QC1	Mercury	120

The RPD exceedances between the primary, duplicate and triplicate soil and groundwater samples are considered mainly to be attributed to the reported concentration being close to the laboratory limit of reporting (LOR). Furthermore the heterogeneous nature of fill soil also contributes towards significant differences in duplicate and triplicate samples.

4.1.4 Rinsate Blanks

Three rinsate samples (RB1 to RB3) were collected from the hand auger at the end of each soil sampling day. One rinsate sample (RB1) was collected from the metal filter at the end of the groundwater sampling day.

Concentrations of the anlaytes were reported below their respective laboratory limits of report (LORs) in all three samples, with the exception of the following:

- Concentrations of zinc (0.01mg/L) and TPH C_{10}-C_{16} (0.1 mg/L) were reported above their respective laboratory LORs in the rinsate blank sample collected on 25 January 2013. Given that TPH was not detected in the soil results, and that the detected zinc concentration was close to the laboratory LOR and significantly less than the detected concentrations, it is considered that the reported presence of these constituents are likely to be attributable to the rinsate water rather than a result of cross-contamination from site soil being sampled.

Details of rinsate sample analysis are presented in Table 4.

4.1.5 Trip Blank and Trip Spike

Trip blank was prepared by the laboratory and travelled to the field and was returned for analysis during the soil and groundwater sampling events. The analyte concentrations in the trip blanks analysed were below laboratory LOR, indicating that samples were unlikely to have been cross contaminated by any volatile contaminants during storage and transport.

Trip spike was also prepared by the laboratory for the soil sampling event. The spike recoveries in the trip spike analysed were within acceptance limits, indicating that sample storage and preservation procedures were adequate.

Results of trip blank and trip spike sample analysis are presented in Table 5.

4.1.6 Sample Preservation and Storage

The sample storage and preservation methods used for the soil and groundwater monitoring events are presented in Tables 4.2 and 4.3, respectively.

Table 4.2: Soil Sample Preservation and Storage

Analyte	Sample Volume and Container	Preservative	Storage
All analytes, except asbestos	1 x 250mL jar	Nil	Insulated container with ice
Asbestos	Plastic bag	Nil	Nil

Table 4.3: Groundwater Sample Preservation and Storage

Analyte	Sample Volume and Container	Preservative	Storage
TPH C_6-C_9	2 x 40mL vial	HCl	Insulated container with ice
BTEX	2 x 40mL vial	HCl	Insulated container with ice
TPH C_{10}-C_{36}	1 x 1,000mL glass	Nil	Insulated container with ice
PAH	1 x 1,000mL glass	Nil	Insulated container with ice
Metals	1 x 200mL plastic	HNO_3	Insulated container with ice

4.1.7 Sample Transport

The sample containers were transported to the NATA accredited analytical laboratory with the COC form, recording the following information:

- Project reference;
- Date of sampling;

- Sample identification;
- Matrix and container details
- Preservation method;
- Name of sampler;
- Required analysis;
- Turnaround times required; and
- Signatures of sender and receiving laboratory.

Samples were transported to the laboratory with sufficient time to perform analysis within the applicable holding period.

4.2 Laboratory Data

An assessment of laboratory data quality was undertaken. The results of this assessment indicated the following:

- Laboratory analysis of samples was undertaken by NATA accredited environmental testing laboratories;
- The laboratory methods and laboratory LOR for the sample matrix and analytes selected were appropriate;
- The laboratory methods used were consistent between laboratories and sampling events;
- Samples were extracted and analysed within holding times;
- Laboratory method blank analytical results were below the laboratory LORs;
- Laboratory control sample errors were reported as being within acceptance limits;
- Spike percentage recoveries were reported as being with laboratory acceptance limits;
- RPDs between samples and laboratory duplicates, were reported as being within acceptance limits, with the exception of some metal results due to sample heterogeneity of the soil samples. Given that all metal results were reported below their respective soil acceptance criteria, it is considered that the reported exceedances are not materially affected the conclusions of the investigation; and
- The LORs for all analytes were below the adopted assessment criteria.

4.3 Data Quality Assessment

The RPD exceedances reported between the primary, duplicate and triplicate soil and groundwater samples are likely to be attributable to the reported concentrations being close to the laboratory limit of reporting. Furthermore the heterogeneous nature of fill soil also contributes towards significant differences in duplicate and triplicate samples.

On the basis of the above and the fact that reported concentrations were well below the adopted assessment criteria, it is considered that the elevated RPDs reported in Table 4.1 above do not indicate issues with field and laboratory methods employed to reproduce data.

The excedances reported in one of the rinsate samples are likely to be attributable to the quality of the rinsate water, rather than the decontamination procedures, given the TPH concentration was not

reported at concentration above the laboratory LOR in the samples analysed. Furthermore, the reported zinc concentration in the rinsate sample was significantly less than the reported concentrations in the soil samples analysed.

Given that the aforementioned reasons for the RPD exceedances, therefore, based on an assessment of the quality of historical data, field data and laboratory data, Coffey considers that the laboratory results are representative of the conditions at the respective sampling locations at the time of sampling and the data is suitable for assessing site contamination conditions.

5 SITE ASSESSMENT CRITERIA

5.1 Soil Assessment Criteria

Coffey assessed the data generated in this investigation with regard to Soil Assessment Criteria (SAC) contained in the following guidelines:

- NEPC (1999) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM);
- NSW DEC (2006) Guidelines for the NSW Auditor Scheme (Second Edition); and
- NSW EPA (1994) Guidelines for Assessing Service Station Sites.

Considering the proposed end use of the site is for low density purposes, soil investigation results for were assessed against and Health-based Investigation Level (HIL) from Column A, Table 5A of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 1999) as follows:

- Residential with gardens and accessible soils (home-grown produce contributing <10% fruit and vegetation intake; no poultry: including children's day-care centres, pre-schools, primary schools, townhouses, villas (HIL-A); and

Given that the site is proposed to be rezoned for low density residential uses, the phytotoxcity of potential contaminants of concern should also be assessed:

- Provisional phytotoxicity-based investigation levels (PPBIL) for plant uptake.

Currently, there are no nationally endorsed HILs for volatile petroleum hydrocarbons. Human health based threshold criteria for sensitive land use for petroleum based organic contaminants published in NSW EPA (1994) have been applied (without multiplication) to supplement the published HIL-A.

NSW DEC (2006) states that there are currently no national or NSW guidelines relating to human health or environmental investigation of material containing asbestos. Therefore, the NSW EPA advice that there should be no asbestos in surface soils will be adopted as the site assessment criteria for asbestos. The WA Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia – May 2009 will also be considered where appropriate.

A summary of the adopted SAC is presented in Table 5.1.

Table 5.1: Summary of Adopted Soil Assessment Criteria

Analyte	Health-based Investigation Levels (mg/kg)[1] NEHF-A	Provisional Phytotoxicity-based Investigation Level (mg/kg)[1] PPBIL	Sensitive Land Use – NSW EPA (1994) (mg/kg)[2]
Arsenic (total)	100	20	-
Cadmium	20	3	-
Chromium (III)	120,000	400	-

Analyte	Health-based Investigation Levels (mg/kg)[1] NEHF-A	Provisional Phytotoxicity-based Investigation Level (mg/kg)[1] PPBIL	Sensitive Land Use – NSW EPA (1994) (mg/kg)[2]
Chromium (VI)	100	1	-
Copper	1,000	100	-
Lead	300	600	-
Mercury (inorganic)	15	1	-
Nickel	600	60	-
Zinc	7,000	200	-
Total PAHs	20	-	-
Benzo(a)pyrene	1	-	-
TPH C_6-C_9	-	-	65
TPH C_{10}-C_{36}	-	-	1,000
Benzene	-	-	1
Toluene	-	-	130
Ethylbenzene	-	-	50
Xylene	-	-	25
Asbestos	ND[3]	-	ND

1. NSW DEC (2006) *Guidelines for the NSW Site Auditor Scheme* (2nd Edition).
2. NSW EPA (1994) *Guidelines for Assessing Service Station Sites*.
3. ND = Not Detected

5.2 Groundwater Assessment Criteria

Based on the topographical information, the groundwater flow is likely to be inferred to the west / north-west towards the George River. Milperra is located approximately 15km upstream from Botany Bay and may only be partially influenced by tidal fluctuation and the water of Georges River west to the site, which would be the receiving waters of the shallow groundwater at the site would be by and large fresh water. Therefore, the ANZECC (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* for 95% protection of fresh water aquatic ecosystems are considered appropriate Groundwater Assessment Criteria (GAC) for the site, which is considered to be a conservative approach.

ANZECC (2000) states that there is currently insufficient data to derive a high reliability trigger value for TPH but propose a low reliability trigger value for TPH of 7 µg/L. This guideline is generally considered by industry to be overly conservative and is also well below the TPH detection limit, which most

laboratories can achieve. Therefore, NATA accredited laboratory LORs for TPH are used as interim trigger values for this site.

A summary of the adopted GAC is presented in Table 5.2.

Table 5.2: Summary of Adopted Groundwater Assessment Criteria

Analyte	Fresh water ecosystems – 95% protection level (µg/L)
TPH C_6-C_9	20 (LOR)
TPH C_{10}-C_{14}	50 (LOR)
TPH C_{15}-C_{28}	100 (LOR)
TPH C_{29}-C_{36}	100 (LOR)
Benzene	950
Toluene	180[1]
Ethylbenzene	80[1]
Xylene	550[2]
Arsenic	13
Cadmium	0.2
Chromium (VI)	1.0
Copper	1.4
Lead	3.4
Mercury	0.6
Nickel	11
Zinc	8.0
Naphthalene	16
Anthracene	0.4[3]
Benzo(a)pyrene	0.2[3]
Fluoranthene	1.4[3]
Phenanthrene	2[3]

Notes:

1. Low reliability fresh water trigger values.
2. Sum of o-xylene and p-xylene
3. Low reliability with 95% protection trigger values.

6 RESULTS

6.1 Subsurface Conditions

In summary, the results of the investigation indicate that the general subsurface profile across the site comprises the following:

- Topsoil, generally comprising sandy silty and silty sand, with some clay and traces of gravels, and/or
- Fill materials, generally comprising gravelly and silty sand or silty clay, with traces or some cobbles in the eastern and northern portions of the site, at depths ranging between 0.2m and 1.5m bgs;
- Silty sand, generally comprising pale grey and white fine grained sand, at depths ranging between 0.4m and 0.8m bgs;
- Clay or sandy clay, generally comprising medium plasticity, grey, orange, brown and red in a number of boreholes across the site, at depths ranging between 0.2m and 8.4m bgs; and
- Shale, highly to extremely weathered shale, grey, black and brow, at depths ranging between 2.0m and 12.0m bgs.

The subsurface conditions encountered during the Coffey investigation were generally consistent with the conditions reported in Geotechnique (2011).

No evidence of visible suspected asbestos containing material (ACM) was observed during soil sampling program.

No visible or olfactory evidence of contamination was noted in any of the boreholes or test pits. No groundwater was encountered in the boreholes and test pits drilled and excavated during this investigation.

Borehole logs and test pit logs are presented in Appendix C.

6.2 Field Screening for VOC

Field headspace screening of soil samples was conducted with a PID to screen for the presence of VOCs.

PID readings ranged from <0.1 to 0.1 ppm. These low PID readings indicate a low likelihood of significant contamination of soils with VOCs at the site. PID results are recorded against corresponding sample intervals in the borehole logs (Appendix C).

6.3 Groundwater Field Results

6.3.1 Standing Water Level

Groundwater gauging results measured on 31 January 2013 for the nine monitoring wells installed at the site (MW1 to MW3) are shown in Table 6.1. The depths to standing water level (SWL) in the three monitoring wells gauged at the site ranged from 1.581 m below top of casing (btoc) (MW1) to 2.339 m btoc (MW3).

No visual and/or olfactory signs of contamination were observed in the groundwater samples collected during this round of monitoring.

Table 6.1: Standing Water Level Summary

Monitoring Well	Standing Water Level (m btoc)	Well Depth (m btoc)
MW1	1.581	7.882
MW2	2.339	12.028
MW3	1.716	11.696

Note: m btoc – metres below top of casing

It was noted that the SWLs measured in all three groundwater monitoring wells were above the screened level. As the shale bedrock and shale derived clay have very low permeabilities and with very low effective porosities, water inflow into excavations or bore holes extending below water table takes time. As such, no water inflow into boreholes was noted during drilling. Water inflow is generally used as an indicator for deciding on the screening depth of monitoring wells.

6.3.2 Basic Parameters

Groundwater monitoring wells MW1 to MW3 were purged and sampled as part of this assessment. Field observations and field screening results for groundwater were recorded and those sheets are included in Appendix E. Field measurements of measured groundwater quality parameters for the three monitoring wells are shown in Table 6.2.

Table 6.2: Groundwater Quality Parameters (Post purge)

Monitoring Well	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	pH (pH units)	Corrected Redox[1] (mV)	Temperature (^{o}C)
MW1	4.31	33.1	5.43	301	19.2
MW2	3.14	23.24	6.71	296	19.2
MW3	5.24	21.82	5.87	298	19.6

Notes:

1. Redox readings were adjusted as per manufacturer's recommendation. For a TPS 90FLMV, 199mV was added to convert the readings into standard hydrogen electrode (SHE) reference electrode.

6.4 Soil Analytical Results

Analytical results for soil samples are presented in Table 1 at the end of this report and are summarised below.

6.4.1 TPH

- Concentrations of TPH C_6-C_9 were reported below laboratory LOR (<10 mg/kg) in all soil samples analysed; and
- Concentrations of TPH C_{10}-C_{36} were below laboratory LOR (<250 mg/kg) in all soil samples submitted for analysis.

6.4.2 BTEX

Concentrations of BTEX were reported below laboratory LOR in the soils samples analysed.

6.4.3 PAH

Concentrations of PAH were reported below laboratory LOR in the soils samples analysed, with the exception of the following soil sample:

- Concentration of fluoranthene was reported above the laboratory LOR, at concentration of 1.3 mg/kg, in soil sample MW3_0.4-0.5. There is currently no guideline value for fluoranthene;
- Concentration of phenanthrene was reported above the laboratory LOR, at concentration of 0.6 mg/kg, in soil sample MW3_0.4-0.5. There is currently no guideline value for phenanthrene;
- Concentration of pyrene was reported above the laboratory LOR, at concentration of 1.0 mg/kg, in soil sample MW3_0.4-0.5. There is currently no guideline value for pyrene; and
- Total PAH concentration was reported above the laboratory LOR, at concentration of 2.9 mg/kg, but below the SAC, in soil sample MW3_0.4-0.5.

6.4.4 OCP and OPP

Concentrations of OCP and OPP were reported below their respective laboratory LORs in the soil samples analysed for these parameters, with the exception of the following soil sample:

- Concentrations of DDD/DDE/DDT were reported above the laboratory LORs, at concentration of 0.245 mg/kg, in soil sample MW2_0.4-0.5, but well below the SAC of 200 mg/kg; and
- Concentration of total chlordane was reported above the laboratory LORs, at concentration of 0.31 mg/kg, in soil sample MW2_0.4-0.5, but below the SAC of 50 mg/kg.

6.4.5 Metals

Concentrations of metals were reported below their respective SAC in the soil samples submitted for analysis.

Concentrations of metals were reported below their respective PPBIL in the soil samples submitted for analysis with the exception of TP14_0.05-0.15 where copper concentration was reported at 560mg/kg, exceeding the PPBIL of 100 mg/kg.

6.4.6 Asbestos

Chrysotile asbestos was detected in soil sample TP3_0.05-0.15, in the form of fibre cement fragments. Asbestos was not detected in other soil samples submitted for asbestos screening.

6.5 Groundwater Analytical Results

Analytical results for groundwater samples are presented in the attached Table 2 at the end of this report and are summarised below. Groundwater results exceeding the adopted GAC are also shown on Figure 5.

6.5.1 TPH

- Concentrations of TPH C_6-C_9 were reported below laboratory LOR (<20 µg/L) in the three groundwater samples analysed; and
- Concentrations of TPH C_{10}-C_{36} were reported below laboratory LORs in the three groundwater samples analysed.

6.5.2 BTEX

Concentrations of BTEX were reported below laboratory LOR in the three groundwater samples analysed.

6.5.3 PAH

- Concentrations of acenaphthene were reported in the three groundwater samples above the laboratory LOR, at concentrations ranging between 0.02 µg/L and 0.07 µg/L. There is currently no threshold value for acenaphthene in groundwater;
- Concentrations of anthracene were reported in the three groundwater samples above the laboratory LOR, at concentrations ranging between 0.01 µg/L and 0.07 µg/L, but below the GAC of 0.4 µg/L;
- Concentrations of fluorene were reported in the groundwater samples collected from MW2 and MW3, at concentrations of 0.06 µg/L and 0.1 µg/L. respectively. There is currently no threshold value for fluorene in groundwater;
- Concentration of naphthalene was reported in the groundwater sample collected from MW3, at concentration of 0.1 µg/L, but below the GAC of 16 µg/L;
- Concentrations of phenanthrene were reported in the three groundwater samples, at concentrations ranging between 0.06 µg/L and 0.23 µg/L, but below the GAC of 2 µg/L; and
- Concentrations of other PAHs were reported below their respective laboratory LORs in the three groundwater samples.

6.5.4 Metals

- Concentrations of chromium were reported below laboratory LOR in the three groundwater samples analysed;
- Concentrations of arsenic were reported in the two groundwater samples collected from MW1 and MW2, at concentration of 1 µg/L which is the laboratory reporting limit, but below the GAC of 13 µg/L. Arsenic concentration was reported below the laboratory LOR in the groundwater sample collected from MW3;
- Concentrations of cadmium were reported above the GAC of 0.2 µg/L in all three groundwater samples, at concentrations ranging between 0.4 µg/L (at MW2) and 2.2 µg/L (at MW3);

- Concentrations of copper were reported above the GAC of 1.4 µg/L in the two groundwater samples collected from MW1 and MW3, at concentrations of 12 µg/L and 2 µg/L, respectively. Copper concentration was reported below the laboratory LOR in the groundwater sample collected from MW2;
- Concentration of lead was reported above the GAC of 3.4 µg/L in the groundwater sample collected from MW1, at concentration of 5 µg/L. Lead concentrations were reported below the laboratory LOR in the groundwater samples collected from MW2 and MW3;
- Concentration of mercury was reported above the laboratory LOR, in the groundwater sample collected from MW1, at concentration of 0.2 µg/L, but below GAC. Mercury concentrations were reported below the laboratory LOR in the groundwater samples collected from MW2 and MW3;
- Concentrations of nickel were reported above the GAC of 11 µg/L in the three groundwater samples, at concentrations ranging between 14 µg/L and 110 µg/L; and
- Concentrations of zinc were reported above the GAC of 8 µg/L in the three groundwater samples, at concentrations ranging between 120 µg/L and 480 µg/L.

7 DISCUSSIONS OF RESULTS

Based on the information provided in the PCA conducted by Geotechniques, the site was previously used as residential and/or rural residential until the Golf Club purchased the site in the early 1950s. There were several buildings / structures located in the southern portion of the site which were subsequently demolished after the site was converted as a practice green.

The storage shed, located in the north-eastern corner of the site, was erected in and around the early 1990s. The shed was used for equipment and chemical storage. A nursery green was formerly located to the immediate west of the shed, where grass was grown as a part of the golf course maintenance activities. A practice green is located in the north-western corner of the site, which was understood to have been used as a nursery green as well. The nursery green operation ceased as a result of insect infestation occurred at the golf course in a few years ago.

Based on observations made during the fieldwork, the site is generally underlain by topsoil with the exception of the area in the vicinity of the storage shed which was concrete paved. Fill material, comprising gravelly and silty sand or silty clay, was encountered in the north-western corner of the site and along the eastern site boundary. The fill material was underlain by silty sand and clay or sandy clay over weathered shale to the maximum depth of investigation of 12m bgs.

Groundwater inflow was not encountered during drilling and test pit excavation program. The depth to SWL in the three monitoring wells gauged at the site ranged from 1.5 m bgs to 2.4 m bgs. It was noted that the SWLs measured in all three groundwater monitoring wells were above the screened level. As the shale bedrock and shale derived clay are impermeable and with a very low porosity, instant water inflow could not be encountered during drilling. Water inflow is generally used as an indicator for the well screening. Based on the topography of the site and the nearby surface water features, the groundwater direction is inferred to the west towards the Georges River.

Chrysotile asbestos was detected in the shallow one soil sample collected from a test pit (TP3) excavated close to the southern site boundary, in the form of fibre cement fragments, at depths ranging between 0.05m and 0.15m bgs. The source of the asbestos cement may be building materials the former structures or buildings located along the southern site boundary. Asbestos was not detected in other soil samples submitted for screening during this investigation.

Varying levels of heavy metals were reported in the soil samples analysed, but at concentrations below their respective soil assessment criterion (SAC). Copper was reported at concentration exceeding the phytotoxicity based investigation level (PPBIL) in one sample collected from fill soil from close to the centre of the site (at test pit location TP14) from surface soil. It is considered that this exceedance is associated with the unknown source of fill material.

PAH was detected in one soil sample collected from the fill material in sampling location MW3 on close to western property boundary. OCPs were detected in the shallow soil sample collected from sampling location MW2 which is likely to be attributable to the residual pesticides which might have been used when this area was used as a nursery green. It should be noted that the detected PAHs and OCPs concentrations were well below their respective SAC.

Concentrations of other potential contaminants of concern, including BTEX, TPH and OPP, were reported at concentrations below their respective laboratory LORs.

Visual and/or olfactory signs of hydrocarbon contamination were not observed during the soil sampling program. Based on the ground conditions encountered during this investigation and those observed by

Geotechniques (2011), there is insufficient evidence to suggest that a chicken farm had been operated at the site and had such activity been undertaken, it had not given rise to significant land contamination impacts.

Although no soil sampling could not be undertaken at the storage shed footprint, given that soil and groundwater contamination were not encountered in the boreholes, test pits and monitoring wells located in the vicinity of the shed, it is considered significant soil and groundwater contamination is unlikely to be present at the storage shed.

A total of three groundwater samples were collected from the newly installed monitoring wells. Concentrations of TPH and BTEX were not detected at concentrations above their respective laboratory LORs. Varying concentrations of PAH compounds were detected in the three groundwater samples, but below their respective groundwater assessment criteria (GAC).

Elevated concentrations of arsenic, cadmium, copper, lead, nickel and zinc were detected at concentrations exceeding their respective GAC. Arsenic and mercury were detected in some of the groundwater samples, but at concentrations below their respective GAC. The presence of the heavy metals is likely to be attributable to the regional groundwater quality. The detected concentrations are considered to be minor and that the highest concentration was reported from the groundwater sample collected from MW1, the inferred upgradient well, suggesting that the source of the heavy metals is likely to be coming from an upgradient source and possibly regional, not related to historical and current site activities.

8 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the investigation, it is concluded that:

- The thickness of the fill materials encountered, and the locations which were encountered from, were similar to those observed during the PCA conducted by Geotechniques in 2011. Imported materials were likely to be used during the construction of the storage shed and practice green.
- The site appears to be not significantly impacted by historical and current site activities, with the exception of the area in the vicinity of test pit TP3 where asbestos impacted soil was detected in near surface.
- The north-eastern corner of the site appears to be not significantly impacted by the leaking UPSS infrastructure which was formerly located to the immediate north-east of the site.
- On the basis that petroleum compounds were not detected at concentrations exceeding their GAC, it appears that the former UPSS infrastructure located to the immediate north-eastern corner of the site, has not significantly impacted the underlying groundwater quality at the site. The heavy metals detected in groundwater are likely to be representative of the regional groundwater quality.

It is considered that the site can be made suitable for the proposed residential uses after the implementation of the following actions:

- Removal of the asbestos impacted soils in the vicinity of test pit TP3 located along the southern site boundary. Validation samples should be undertaken to verify that the removal of the impacted soils is adequate.
- Visual inspection and/or soil sampling should be undertaken after the demolition of the storage shed to verify if soil contamination is present beneath the footprint of the shed.

A Remedial Action Plan (RAP) will need to be prepared for the proposed remedial works and the validation works to be undertaken within the existing storage shed footprint. The RAP should include the remediation goals, remediation actions including management of waste materials generated, environmental controls to be implemented during remediation and validation plans.

9 REMEDIAL OPTIONS AND INDICATIVE COST ESTIMATES

9.1 Remedial Options

Given that no significant soil and/or groundwater contamination be present at the site, and that the impacted area, in this case, the asbestos impacted soils, was identified in a localised area, the preferred remedial option is to remove the impacted soils from the site. Validation sampling should be undertaken to confirm the removal of the asbestos materials from the impacted area. The impacted soils should be temporarily stored for off-site disposal.

A Remedial Action Plan (RAP) will be required to provide the remediation strategy and the recommended clean-up criteria. The RAP should include the following:

- Remediation goal;
- Proposed development works and the extent of the remediation required;
- Rationale for the selection of preferred remedial option/s;
- Validation plan, including the sampling density, analytical plan and QA/QC plan;
- Validation reporting requirement;
- Contingency plan; and
- Unexpected finds protocol.

The RAP should include a sampling plan for the validation works to be undertaken at the existing storage shed.

9.2 Indicative Remedial Costs

Indicative remedial costs are estimated and provided in Table 9.1 below.

It is important to note that reasonably reliable remediation cost estimates can only be prepared following the preparation of a project specific remediation action plan. As such, the indicative cost estimate for remediation presented here-in should only be used to obtain a general idea of the order of remediation costs. It should not be treated as an “engineer’s estimate”.

A more accurate estimate of remediation costs may be obtained following the completion of the RAP.

Table 9.1: Indicative Remedial Costs

Item	Indicative Direct Cost (Excluding GST)
Overall	
Preparation of RAP	$4,000-$6,000
Asbestos Impacted Area	
Excavation of asbestos impacted soils using a bobcat and soil sampling	$2,000-$3,000
Laboratory Analysis	$400-$500

Item	Indicative Direct Cost (Excluding GST)
Soil Disposal (present an upper limit of quantity, say up to 20 m^3	$4,500-$6,000
Preparation of validation reporting	$2,000-$3,000
Validation of Storage Shed	
Bobcat hire and soil sampling	$2,000-$3,000
Laboratory Analysis	$1,000-$1,500
Preparation of validation reporting	$2,000-$3,000

It should be noted that Table 9.1 was prepared based on the assumptions below:

- The cost does not include any disposal of excavated soils, other than the remedial works associated with the asbestos impacted soil, as significant soil contamination was not identified during this DSI.
- Based on the groundwater analytical results, it is not anticipated that groundwater remediation will be required at the site.
- Soil sampling is estimated to be completed in two days.
- Based on the size of the storage shed (40m long by 15m wide), it was estimated that approximately six validation sampling points be required.
- No allowance has been made for indirect costs such as project management, securing approvals (if required).
- No allowance has been made for restoration of the site, following minor remediation works.
- No allowance has been made for a review by a site auditor and addressing any third party comments including site auditor and Council comments.

This report should be read in conjunction with the attached ***Important Information About Your Coffey Environmental Report***.

10 REFERENCES

ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

Australian Standards AS4482.1 and AS4482.2, *Guide to Investigation and Sampling of Sites with Potentially Contaminated Soil (Part 1 Non-volatile and semi-volatile compounds; and Part 2 Volatile Substances)*.

Bankstown City Council Local Environmental Plan 2001

Enviropacific Pty Ltd (2013) Limited Environmental Site Assessment, Bankstown Golf Course, 70 Ashford Avenue, Milperra, prepared for Perotec Pty Ltd, January 2013.

Geotechniques Pty Ltd (2011) Preliminary Contamination Assessment, Bankstown Golf Course, 70 Ashford Avenue, Milperra, prepared for SJB Planning Pty Ltd, May 2011.

NSW Department of Land and Water Conservation (1997) 1:25,000 Liverpool Acid Sulfate Soil Risk Map, 9130-S2, Edition 2.

NSW Department of Mines (1963) 1:250,000 Sydney Geological Series Sheet, S1 56-5, Second Edition.

NEPC (1999) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM).

NEPC (1999) National Environment Protection Measure (NEPM) Guideline on Laboratory Analysis of Potentially Contaminated Soils.

NSW DEC (2006) Guidelines for the NSW Site Auditor Scheme, Second Edition.

NSW DECC (2009) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997.

NSW EPA (1994) Guidelines for Assessing Service Station Sites.

NSW EPA (1995) Sampling Design Guidelines.

NSW OEH (2001) Guidelines for Consultants Reporting on Contaminated Sites.

Soil Conservation Service of New South Wales (1997) 1:100,000 Penrith Soil Landscape Sheet 9030.

Tables

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214

Bankstown Golf Course
Detailed Site Investigation
Table 1 - Soil Analytical Results

Field_ID	MW1_0.4-0.5	MW1_2.5-2.7	MW2_0.4-0.5	MW2_3.6-3.8	MW3_0.4-0.5	MW3_1.4-1.7	TP1_0.4-0.5	TP1_0.9-1.0	TP2_0.4-0.5	TP3_0.05-0.15	TP4_0.9-1.0	TP5_0.05-0.15	TP6_0.4-0.5	TP7_0.9-1.0	TP8_0.4-0.5	TP9_0.4-0.5	TP10_0.9-1.0	TP11_0.05-0.15	TP12_0.05-0.15	TP13_0.05-0.15	TP13_0.4-0.5	TP14_0.05-0.15	TP14_0.9-1.0
Sample_Depth_Range	0.4-0.5	2.5-2.7	0.4-0.5	3.6-3.8	0.4-0.5	1.4-1.7	0.4-0.5	0.9-1.0	0.4-0.5	0.05-0.15	0.9-1.0	0.05-0.15	0.4-0.5	0.9-1.0	0.4-0.5	0.4-0.5	0.9-1.0	0.05-0.15	0.05-0.15	0.05-0.15	0.4-0.5	0.05-0.15	0.9-1.0
Sampled_Date	23/01/2013	23/01/2013	23/01/2013	23/01/2013	23/01/2013	23/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013
Matrix_Description	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL

ChemName	Units	EQL	NSW DEC (2006) HIL-A	NSW DEC (2006) PPBIL	NSW EPA (1994) Service Station																					
Benzene	mg/kg	0.5			1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5			50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	0.5			130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	mg/kg	1				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene Total	mg/kg	1.5			25	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
C6 - C9	mg/kg	10			65	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C14	mg/kg	50				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	130	<100
C10 - C36 (Sum of total)	mg/kg				1000	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	205[#3]	<250[#4]
C6 - C10	mg/kg	20				<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C6-C10 less BTEX (F1)	mg/kg	20				<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10 - C16	mg/kg	50				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C16 - C34	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C34 - C40	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	<100
F2-NAPHTHALENE	mg/kg	50				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Acenaphthene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Acenaphthylene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Anthracene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Benzo(a)anthracene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Benzo(a)pyrene	mg/kg	0.5	1		1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Benzo(b)&(k)fluoranthene	mg/kg	1				<1	-	<1	-	<1	<1	<1	-	<1	-	-	-	<1	-	-	-	-	-	-	<1	-	-	-
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Chrysene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Fluoranthene	mg/kg	0.5				<0.5	-	<0.5	-	1.3	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Fluorene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Naphthalene	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Phenanthrene	mg/kg	0.5				<0.5	-	<0.5	-	0.6	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Pyrene	mg/kg	0.5				<0.5	-	<0.5	-	1	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Total PAHs	mg/kg	1	20		20	<1	-	<1	-	2.9	<1	<1	-	<1	-	-	-	<1	-	-	-	-	-	-	<1	-	-	-
Aldrin + Dieldrin	mg/kg	-	10			<0.1[#4]	-	<0.1[#4]	-	<0.1[#4]	<0.1[#4]	<0.1[#4]	-	<0.1[#4]	-	-	-	<0.1[#4]	-	-	-	-	-	-	<0.1[#4]	-	-	-
DDT+DDE+DDD	mg/kg	-	200			<0.3[#2]	-	0.245[#1]	-	<0.3[#2]	<0.3[#2]	<0.3[#2]	-	<0.3[#2]	-	-	-	<0.3[#2]	-	-	-	-	-	-	<0.3[#2]	-	-	-
4,4-DDE	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
a-BHC	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Aldrin	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
b-BHC	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
cis-Chlordane	mg/kg	0.05				<0.05	-	0.18	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
d-BHC	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
DDD	mg/kg	0.05				<0.05	-	0.12	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
DDT	mg/kg	0.2				<0.2	-	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	-	-	<0.2	-	-	-	-	-	-	<0.2	-	-	-
Dieldrin	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Endosulfan I	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Endosulfan II	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Endosulfan sulphate	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Endrin	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Endrin aldehyde	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Endrin ketone	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
g-BHC (Lindane)	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Heptachlor	mg/kg	0.05	10			<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Heptachlor epoxide	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Hexachlorobenzene	mg/kg	0.05				<0.05	-	<0.05	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Methoxychlor	mg/kg	0.2				<0.2	-	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	-	-	<0.2	-	-	-	-	-	-	<0.2	-	-	-
trans-chlordane	mg/kg	0.05				<0.05	-	0.13	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	<0.05	-	-	-	-	-	-	<0.05	-	-	-
Azinophos methyl	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Chlorpyrifos	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Coumaphos	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Diazinon	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Dichlorvos	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Dimethoate	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Disulfoton	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Ethoprop	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Fenitrothion	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Fensulfothion	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Fenthion	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Malathion	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Methyl parathion	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Mevinphos (Phosdrin)	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Monocrotophos	mg/kg	10				<10	-	<10	-	<10	<10	<10	-	<10	-	-	-	<10	-	-	-	-	-	-	<10	-	-	-
Parathion	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Phorate	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Prothiofos	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Ronnel	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Stirophos	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Trichloronate	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Demeton (total)	mg/kg	1				<1	-	<1	-	<1	<1	<1	-	<1	-	-	-	<1	-	-	-	-	-	-	<1	-	-	-
Profenofos	mg/kg	0.5				<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	<0.5	-	-	-
Arsenic	mg/kg	2	100	20		5.6	<2	6	3.4	8.3	<2	3.3	<2	<2	<2	<2	<2	<2	<2	<2	<2	3.3	3.2	5.1	<2	3.2	<2
Cadmium	mg/kg	0.4	20	3		0.5	<0.4	<0.4	<0.4	0.7	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1.4	0.4	<0.4	<0.4
Chromium	mg/kg	5	120,000	400		22	<5	7.7	6.7	14	11	18	<5	<5	<5	6	<5	<5	5.6	<5	<5	8.2	6.2	<5	8	<5	7.5	8.6
Copper	mg/kg	5	1000	100		13	8.6	12	7.2	42	<5	19	6.2	<5	13	<5	<5	<5	<5	<5	<5	<5	12	11	34	<5	**560**	5.1
Lead	mg/kg	5	300	600	300	7.1	5.2	16	<5	67	<5	20	<5	<5	230	<5	7.3	<5	<5	5.6	5.4	<5	15	6	21	7.7	60	9.7
Mercury	mg/kg	0.05	15	1		<0.05	<0.05	0.05	<0.05	0.08	<0.05	0.11	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05
Nickel	mg/kg	5	600	60		<5	<5	<5	<5	8.8	<5	19	5.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	8.6	<5	11	<5	<5	5.4
Zinc	mg/kg	5	7000	200		<5	<5	24	<5	150	<5	34	14	12	130	<5	12	<5	<5	27	45	<5	31	26	96	8.7	37	5.4
Asbestos	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**Chrysotile asbestos detected**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
1. NSW DEC (2006) Guidelines for the NSW Site Auditor Scheme
2. NSW EPA (1994) Guidelines for Assessing Service Station Sites
Exceedances are highlighted and bolded.
ND - Not detected

Bankstown Golf Course
Detailed Site Investigation
Table 1 - Soil Analytical Results

Field_ID	TP15_0.4-0.5	TP16_0.9-1.0	TP17_0.4-0.5	TP18_0.4-0.5	TP19_0.05-0.15	TP20_0.4-0.5	TP21_0.05-0.15	TP22_0.4-0.5	TP23_0.05-0.15	TP24A_0.05-0.15	TP25_0.9-1.0	TP26_0.4-0.5	TP27_0.05-0.15	TP28_0.4-0.5	TP28_1.9-2.0	TP29_0.4-0.5	TP29_0.9-1.0	TP30_0.4-0.5	TP30_0.9-1.0	TP31_0.05-0.15	TP32_0.9-1.0	TP33_0.4-0.5
Sample_Depth_Range	0.4-0.5	0.9-1.0	0.4-0.5	0.4-0.5	0.05-0.15	0.4-0.5	0.05-0.15	0.4-0.5	0.05-0.15	0.05-0.15	0.9-1.0	0.4-0.5	0.05-0.15	0.4-0.5	1.9-2.0	0.4-0.5	0.9-1.0	0.4-0.5	0.9-1.0	0.05-0.15	0.9-1.0	0.4-0.5
Sampled_Date	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	24/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013	25/01/2013
Matrix_Description	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL

ChemName	Units	EQL	NSW DEC (2006) HIL-A	NSW DEC (2006) PPBIL	NSW EPA (1994) Service Station																				
Benzene	mg/kg	0.5			1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5			50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	0.5			130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	mg/kg	1				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene Total	mg/kg	1.5			25	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
C6 - C9	mg/kg	10			65	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C14	mg/kg	50				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	120	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C10 - C36 (Sum of total)	mg/kg				1000	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	195[#3]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]	<250[#4]
C6 - C10	mg/kg	20				<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C6-C10 less BTEX (F1)	mg/kg	20				<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10 - C16	mg/kg	50				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C16 - C34	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C34 - C40	mg/kg	100				<100	<100	<100	<100	<100	<100	<100	180	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F2-NAPHTHALENE	mg/kg	50				<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Acenaphthene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Acenaphthylene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Anthracene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Benzo(a)anthracene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Benzo(a)pyrene	mg/kg	0.5	1		1	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Benzo(b)&(k)fluoranthene	mg/kg	1				-	-	-	<1	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	-	<1	-	-
Benzo(g,h,i)perylene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Chrysene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Dibenz(a,h)anthracene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Fluoranthene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Fluorene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Naphthalene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Phenanthrene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Pyrene	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Total PAHs	mg/kg	1	20		20	-	-	-	<1	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	-	<1	-	-
Aldrin + Dieldrin	mg/kg	-	10			-	-	-	<0.1[#4]	-	-	-	-	-	-	-	-	-	<0.1[#4]	-	<0.1[#4]	-	-	-	<0.1[#4]	-	-
DDT+DDE+DDD	mg/kg	-	200			-	-	-	<0.3[#2]	-	-	-	-	-	-	-	-	-	<0.3[#2]	-	<0.3[#2]	-	-	-	<0.3[#2]	-	-
4,4-DDE	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
a-BHC	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Aldrin	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
b-BHC	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
cis-Chlordane	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
d-BHC	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
DDD	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
DDT	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	-	-	<0.2	-	-
Dieldrin	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Endosulfan I	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Endosulfan II	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Endosulfan sulphate	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Endrin	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Endrin aldehyde	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Endrin ketone	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
g-BHC (Lindane)	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Heptachlor	mg/kg	0.05	10			-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Heptachlor epoxide	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Hexachlorobenzene	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Methoxychlor	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	-	-	<0.2	-	-
trans-chlordane	mg/kg	0.05				-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Azinophos methyl	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Chlorpyrifos	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Coumaphos	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Diazinon	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Dichlorvos	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Dimethoate	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Disulfoton	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Ethoprop	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Fenitrothion	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Fensulfothion	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Fenthion	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Malathion	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Methyl parathion	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Mevinphos (Phosdrin)	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Monocrotophos	mg/kg	10				-	-	-	<10	-	-	-	-	-	-	-	-	-	<10	-	<10	-	-	-	<10	-	-
Parathion	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Phorate	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Prothiofos	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Ronnel	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Stirophos	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Trichloronate	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Demeton (total)	mg/kg	1				-	-	-	<1	-	-	-	-	-	-	-	-	-	<1	-	<1	-	-	-	<1	-	-
Profenofos	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Arsenic	mg/kg	2	100	20		<2	2.2	<2	<2	3.2	<2	3.7	<2	<2	3	<2	<2	<2	2.2	<2	4.4	<2	4.4	4.4	2.3	5	12
Cadmium	mg/kg	0.4	20	3		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	2.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	120,000	400		<5	<5	<5	<5	7	<5	7.3	5.8	14	9.9	<5	6.4	<5	6.4	8.2	<5	10	21	6.2	<5	7.8	13
Copper	mg/kg	5	1000	100		8	<5	<5	<5	6.1	<5	7.5	6.5	19	<5	<5	<5	<5	33	<5	31	<5	26	7.2	<5	12	20
Lead	mg/kg	5	300	600	300	54	<5	<5	<5	18	<5	12	13	28	8.8	7	6.2	<5	29	8.7	27	11	26	17	11	14	30
Mercury	mg/kg	0.05	15	1		<0.05	0.26	<0.05	<0.05	0.17	<0.05	0.39	<0.05	0.4	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	0.22	0.1	0.18	<0.05	<0.05
Nickel	mg/kg	5	600	60		<5	<5	<5	<5	<5	<5	<5	<5	12	<5	<5	<5	<5	15	<5	7.9	<5	11	<5	<5	<5	<5
Zinc	mg/kg	5	7000	200		49	<5	11	<5	40	6	21	26	48	7.1	<5	<5	8.4	79	<5	53	21	66	25	14	7.1	17
Asbestos	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
1. NSW DEC (2006) Guidelines for the NSW Site Auditor Scheme
2. NSW EPA (1994) Guidelines for Assessing Service Station Sites
Exceedances are highlighted and bolded.
ND - Not detected

Bankstown Golf Course
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Table 2 - Groundwater Analytical Results

Field_ID	MW1	MW2	MW3
Sampled_Date-Time	31/01/2013	31/01/2013	31/01/2013
MATRIX	WATER	WATER	WATER

ChemName	Units	EQL	ANZECC 2000 Freshwater 95%			
Benzene	µg/L	1	950	<1	<1	<1
Ethylbenzene	µg/L	1	80	<1	<1	<1
Toluene	µg/L	1	180	<1	<1	<1
Xylene (m & p)	µg/L	2	200	<2	<2	<2
Xylene (o)	µg/L	1	350	<1	<1	<1
Xylene Total	µg/L	3	550	<3	<3	<3
C6 - C9	µg/L	20	-	<20	<20	<20
C10 - C14	µg/L	50	-	<50	<50	<50
C15 - C28	µg/L	100	-	<100	<100	<100
C29 - C36	µg/L	100	-	<100	<100	<100
C10 - C36 (Sum of total)	µg/L	100	-	<100	<100	<100
C6-C10 less BTEX (F1)	mg/L	0.02	-	<0.02	<0.02	<0.02
F2-NAPHTHALENE	mg/L	0.05	-	<0.05	<0.05	<0.05
C6 - C10	mg/L	0.02	-	<0.02	<0.02	<0.02
C10 - C16	mg/L	0.05	-	<0.05	<0.05	<0.05
C16 - C34	mg/L	0.1	-	<0.1	<0.1	<0.1
C34 - C40	mg/L	0.1	-	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.01	-	0.03	0.03	0.07
Acenaphthylene	µg/L	0.01	-	<0.01	<0.01	<0.01
Anthracene	µg/L	0.01	0.4	0.01	0.02	0.07
Benzo(a)anthracene	µg/L	0.01	-	<0.01	<0.01	0.01
Benzo(a)pyrene	µg/L	0.01	0.2	<0.01	<0.01	<0.01
Benzo(b)&(k)fluoranthene	µg/L	0.02	-	<0.02	<0.02	<0.02
Benzo(g,h,i)perylene	µg/L	0.01	-	<0.01	<0.01	<0.01
Chrysene	µg/L	0.05	-	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/L	0.05	-	<0.05	<0.05	<0.05
Fluoranthene	µg/L	0.05	1.4	<0.05	<0.05	<0.05
Fluorene	µg/L	0.05	-	<0.05	0.06	0.1
Indeno(1,2,3-c,d)pyrene	µg/L	0.05	-	<0.05	<0.05	<0.05
Naphthalene	µg/L	0.05	16	<0.05	<0.05	0.1
Phenanthrene	µg/L	0.05	2	0.06	0.08	0.23
Pyrene	µg/L	0.05	-	<0.05	<0.05	<0.05
Total PAHs	µg/L	0.05	-	0.1	0.19	0.58
Arsenic (Filtered)	µg/L	1	13	1	1	<1
Cadmium (Filtered)	µg/L	0.1	0.2	**2.2**	**0.4**	**0.9**
Chromium (Filtered)	µg/L	1	1	<1	<1	<1
Copper (Filtered)	mg/L	1	1.4	**12**	<1	**2**
Lead (Filtered)	µg/L	1	3.4	**5**	<1	<1
Mercury (Filtered)	µg/L	0.1	0.6	0.2	<0.1	<0.1
Nickel (Filtered)	µg/L	0.1	11	**110**	**14**	**46**
Zinc (Filtered)	µg/L	5	8	**480**	**120**	**200**

Bankstown Golf Course
Detailed Site Investigation
Table 3 - Field Duplicate Results - Soil

SDG			103466-70	103466-70		103466-70	Interlab_D		103466-70	103466-70		103466-70	Interlab_D		103466-70	103466-70		103466-70	103466-70		103466-70	103466-70	
Field_ID			MW1_0.4-0.5	QC1	RPD	MW1_0.4-0.5	QC1A	RPD	MW3_1.4-1.7	QC2	RPD	MW3_1.4-1.7	QC2A	RPD	TP2_0.4-0.5	QC3	RPD	TP6_0.4-0.5	QC5	RPD	TP33_0.4-0.5	QC11	RPD
Sampled_Date-Time			23/01/2013	23/01/2013		23/01/2013	23/01/2013		23/01/2013	23/01/2013		23/01/2013	23/01/2013		24/01/2013	24/01/2013		24/01/2013	24/01/2013		25/01/2013	25/01/2013	
ChemName	**Units**	**EQL**																					
Arsenic	mg/kg	2 (Primary): 4 (Interlab)	5.6	7.0	22	5.6	7.0	22	<2.0	3.4	**109%**	<2.0	<4.0	0	<2.0	<2.0	0	<2.0	<2.0	0	12	5.9	**68%**
Cadmium	mg/kg	0.4 (Primary): 0.5 (Interlab)	0.5	0.6	18	0.5	<0.5	**67%**	<0.4	0.5	22	<0.4	<0.5	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	0.6	**100%**
Chromium	mg/kg	5 (Primary): 1 (Interlab)	22.0	25.0	13	22.0	25.0	13	11.0	14.0	24	**11.0**	**6.0**	**59**	<5.0	<5.0	0	<5.0	<5.0	0	13	24	**59%**
Copper	mg/kg	5 (Primary): 1 (Interlab)	13.0	15.0	14	13.0	12.0	8	<5.0	10.0	**67**	**<5.0**	**8.0**	**105%**	<5.0	<5.0	0	<5.0	<5.0	0	20	<5.0	**156%**
Lead	mg/kg	5 (Primary): 1 (Interlab)	7.1	7.6	7	**7.1**	**11.0**	43	<5.0	8.0	46	**<5.0**	**9.0**	**113%**	<5.0	<5.0	0	<5.0	15.0	**143%**	30	9.7	**102%**
Mercury	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0%
Nickel	mg/kg	5 (Primary): 1 (Interlab)	<5.0	<5.0	0	<5.0	3.0	18%	<5.0	5.7	**78%**	<5.0	2.0	0	<5.0	<5.0	0	<5.0	<5.0	0	<5	<5.0	0%
Zinc	mg/kg	5 (Primary): 1 (Interlab)	<5.0	6.3	**86%**	<5.0	7.0	**95%**	<5.0	<5.0	0	<5.0	1.0	0	12.0	18.0	40	<5.0	15.0	**143%**	17	<5	**149%**
4,4-DDE	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
a-BHC	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Aldrin	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
b-BHC	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
cis-Chlordane	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
d-BHC	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
DDD	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
DDT	mg/kg	0.2 (Primary): 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
Dieldrin	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan I	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan II	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endosulfan sulphate	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endrin	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endrin aldehyde	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Endrin ketone	mg/kg	0.05	<0.05	<0.05	0	<0.05			<0.05	<0.05	0	<0.05			<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
g-BHC (Lindane)	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Heptachlor	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Heptachlor epoxide	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Hexachlorobenzene	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Methoxychlor	mg/kg	0.2 (Primary): 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
trans-chlordane	mg/kg	0.05 (Primary): 0.1 (Interlab)	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.1	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Azinophos methyl	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Chlorpyrifos	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Coumaphos	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Demeton (total)	mg/kg	1	<1.0	<1.0	0	<1.0	<0.1	0	<1.0	<1.0	0	<1.0	<0.1	0	<1.0	<1.0	0	<1.0	<1.0	0	-	-	-
Diazinon	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Dichlorvos	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Dimethoate	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Disulfoton	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Ethoprop	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Fenitrothion	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Fensulfothion	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Fenthion	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Malathion	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Methyl parathion	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Mevinphos (Phosdrin)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Monocrotophos	mg/kg	10	<10.0	<10.0	0	<10.0	<0.1	0	<10.0	<10.0	0	<10.0	<0.1	0	<10.0	<10.0	0	<10.0	<10.0	0	-	-	-
Parathion	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Phorate	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Profenofos	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Prothiofos	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Ronnel	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Stirophos	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Trichloronate	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
C6-C10 less BTEX (F1)	mg/kg	20 (Primary): 25 (Interlab)	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<20.0	0
F2-NAPHTHALENE	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0
C6 - C10	mg/kg	20 (Primary): 25 (Interlab)	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<20.0	0	<20.0	<25.0	0	<20.0	<20.0	0	<20.0	<20.0	0	<20.0	<20.0	0
C10 - C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0
C16 - C34	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0
C34 - C40	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0
Acenaphthene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Acenaphthylene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Benzo(a)anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Benzo(a)pyrene	mg/kg	0.5 (Primary): 0.05 (Interlab)	<0.5	<0.5	0	<0.5	<0.05	0	<0.5	<0.5	0	<0.5	<0.05	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Benzo(b)&(k)fluoranthene	mg/kg	1 (Primary): 0.2 (Interlab)	<1.0	<1.0	0	<1.0	<0.2	0	<1.0	<1.0	0	<1.0	<0.2	0	<1.0	<1.0	0	<1.0	<1.0	0	-	-	-
Benzo(g,h,i)perylene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Chrysene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Fluoranthene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Fluorene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Phenanthrene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Pyrene	mg/kg	0.5 (Primary): 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-
Total PAHs	mg/kg	1	<1.0	<1.0	0	<1.0			<1.0	<1.0	0	<1.0			<1.0	<1.0	0	<1.0	<1.0	0	-	-	-
C6 - C9	mg/kg	10 (Primary): 25 (Interlab)	<10.0	<10.0	0	<10.0	<25.0	0	<10.0	<10.0	0	<10.0	<25.0	0	<10.0	<10.0	0	<10.0	<10.0	0	<10.0	<10.0	0
C10 - C14	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0
C15 - C28	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0
C29 - C36	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0
C10 - C36 (Sum of total)	mg/kg	100	<100.0	<100.0	0	<100.0			<100.0	<100.0	0	<100.0			<100.0	<100.0	0	<100.0	<100.0	0	<100.0	<100.0	0
Benzene	mg/kg	0.5 (Primary): 0.2 (Interlab)	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Ethylbenzene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<1.0	0	<0.5	<0.5	0	<0.5	<1.0	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Toluene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Total BTEX	mg/kg	1.5	<1.5	<1.5	0	<1.5	-	-	<1.5	<1.5	0	<1.5	-	-	<1.5	<1.5	0	<1.5	<1.5	0	<1.5	<1.5	0
Xylene (m & p)	mg/kg	1 (Primary): 2 (Interlab)	<1.0	<1.0	0	<1.0	<2.0	0	<1.0	<1.0	0	<1.0	<2.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0
Xylene (o)	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<1.0	0	<0.5	<0.5	0	<0.5	<1.0	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Xylene Total	mg/kg	1.5	<1.5	<1.5	0	<1.5	-	-	<1.5	<1.5	0	<1.5	-	-	<1.5	<1.5	0	<1.5	<1.5	0	<1.5	<1.5	0

Bankstown Golf Course
Detailed Site Investigation
Table 3 - Field Duplicate Results - Water

SDG	103475	103475	
Field_ID	MW1	QC1	**RPD**
Sampled_Date-Time	31/01/2013	31/01/2013	

ChemName	**Units**	**EQL**			
Arsenic (Filtered)	mg/l	0.001	0.001	0.001	0
Cadmium (Filtered)	mg/l	0.0001	0.0022	0.0023	4
Chromium (Filtered)	mg/l	0.001	<0.001	<0.001	0
Copper (Filtered)	mg/l	0.001	0.012	0.011	9
Lead (Filtered)	mg/l	0.001	0.005	0.005	0
Mercury (Filtered)	mg/l	0.0001	0.0002	<0.0001	**120%**
Nickel (Filtered)	mg/l	0.001	0.11	0.11	0
Zinc (Filtered)	mg/l	0.005	0.48	0.35	31
Naphthalene	µg/l	5	<5.0	<5.0	0
C6-C10 less BTEX (F1)	mg/l	0.02	<0.02	<0.02	0
F2-NAPHTHALENE	mg/l	0.05	<0.05	<0.05	0
C6 - C10	mg/l	0.02	<0.02	<0.02	0
C10 - C16	mg/l	0.05	<0.05	<0.05	0
C16 - C34	mg/l	0.1	<0.1	<0.1	0
C34 - C40	mg/l	0.1	<0.1	<0.1	0
C6 - C9	µg/l	20	<20.0	<20.0	0
C10 - C14	µg/l	50	<50.0	<50.0	0
C15 - C28	µg/l	100	<100.0	<100.0	0
C29 - C36	µg/l	100	<100.0	<100.0	0
C10 - C36 (Sum of total)	µg/l	100	<100.0	<100.0	0
Benzene	µg/l	1	<1.0	<1.0	0
Ethylbenzene	µg/l	1	<1.0	<1.0	0
Toluene	µg/l	1	<1.0	<1.0	0
Total BTEX	mg/l	0.01	<0.01	<0.01	0
Xylene (m & p)	µg/l	2	<2.0	<2.0	0
Xylene (o)	µg/l	1	<1.0	<1.0	0
Xylene Total	µg/l	3	<3.0	<3.0	0

*RPDs have only been considered where a concentration is greater than 5 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 40 (5-20 x EQL); 20 (20-30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Bankstown Golf Course
Detailed Site Investigation
Table 4 - QA/QC Results - Rinsate

SDG	103466-70	103466-70	103473-103474	103475
Field_ID	RB_23113	RB_24113	RB_250113	RB_31113
Sampled_Date	23/01/2013	24/01/2013	25/01/2013	31/01/2013
Sample_Type	Rinsate	Rinsate	Rinsate	Rinsate

ChemName	Units	EQL				
Arsenic (Filtered)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (Filtered)	mg/l	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium (Filtered)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001
Copper (Filtered)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001
Lead (Filtered)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001
Mercury (Filtered)	mg/l	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel (Filtered)	mg/l	0.001	<0.001	<0.001	<0.001	<0.001
Zinc (Filtered)	mg/l	0.005	<0.005	<0.005	**0.01**	<0.005
4,4-DDE	µg/l	0.5	<0.5	<0.5	<0.5	-
a-BHC	µg/l	0.5	<0.5	<0.5	<0.5	-
Aldrin	µg/l	0.5	<0.5	<0.5	<0.5	-
b-BHC	µg/l	0.5	<0.5	<0.5	<0.5	-
cis-Chlordane	µg/l	0.5	<0.5	<0.5	<0.5	-
d-BHC	µg/l	0.5	<0.5	<0.5	<0.5	-
DDD	µg/l	0.5	<0.5	<0.5	<0.5	-
DDT	µg/l	2	<2	<2	<2	-
Dieldrin	µg/l	0.5	<0.5	<0.5	<0.5	-
Endosulfan I	µg/l	0.5	<0.5	<0.5	<0.5	-
Endosulfan II	µg/l	0.5	<0.5	<0.5	<0.5	-
Endosulfan sulphate	µg/l	0.5	<0.5	<0.5	<0.5	-
Endrin	µg/l	0.5	<0.5	<0.5	<0.5	-
Endrin aldehyde	µg/l	0.5	<0.5	<0.5	<0.5	-
Endrin ketone	µg/l	0.5	<0.5	<0.5	<0.5	-
g-BHC (Lindane)	µg/l	0.5	<0.5	<0.5	<0.5	-
Heptachlor	µg/l	0.5	<0.5	<0.5	<0.5	-
Heptachlor epoxide	µg/l	0.5	<0.5	<0.5	<0.5	-
Hexachlorobenzene	µg/l	0.5	<0.5	<0.5	<0.5	-
Methoxychlor	µg/l	2	<2	<2	<2	-
trans-chlordane	µg/l	0.5	<0.5	<0.5	<0.5	-
Azinophos methyl	µg/l	2	<2	<2	<2	-
Chlorpyrifos	µg/l	2	<2	<2	<2	-
Coumaphos	µg/l	2	<2	<2	<2	-
Demeton (total)	µg/l	4	<4	<4	<4	-
Diazinon	µg/l	2	<2	<2	<2	-
Dichlorvos	µg/l	2	<2	<2	<2	-
Dimethoate	µg/l	2	<2	<2	<2	-
Disulfoton	µg/l	2	<2	<2	<2	-
Ethoprop	µg/l	2	<2	<2	<2	-
Fenitrothion	µg/l	2	<2	<2	<2	-
Fensulfothion	µg/l	2	<2	<2	<2	-
Fenthion	µg/l	2	<2	<2	<2	-
Malathion	µg/l	2	<2	<2	<2	-
Methyl parathion	µg/l	2	<2	<2	<2	-
Mevinphos (Phosdrin)	µg/l	2	<2	<2	<2	-
Monocrotophos	µg/l	20	<20	<20	<20	-
Parathion	µg/l	2	<2	<2	<2	-
Phorate	µg/l	2	<2	<2	<2	-
Profenofos	µg/l	2	<2	<2	<2	-
Prothiofos	µg/l	2	<2	<2	<2	-
Ronnel	µg/l	2	<2	<2	<2	-
Stirophos	µg/l	2	<2	<2	<2	-
Trichloronate	µg/l	2	<2	<2	<2	-
Naphthalene	µg/l	5	<5	<5	<5	<5
F2-NAPHTHALENE	mg/l	0.05	<0.05	<0.05	<0.05	<0.05
C6-C10 less BTEX (F1)	mg/l	0.02	<0.02	<0.02	<0.02	<0.02
C6 - C10	mg/l	0.02	<0.02	<0.02	<0.02	<0.02
C10 - C16	mg/l	0.05	<0.05	<0.05	<0.05	<0.05
C16 - C34	mg/l	0.1	<0.1	<0.1	**0.1**	<0.1
C34 - C40	mg/l	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/l	1	<1	<1	<1	<0.01
Acenaphthylene	µg/l	1	<1	<1	<1	<0.01
Anthracene	µg/l	1	<1	<1	<1	<0.01
Benzo(a)anthracene	µg/l	1	<1	<1	<1	<0.01
Benzo(a)pyrene	µg/l	1	<1	<1	<1	<0.01
Benzo(b)&(k)fluoranthene	µg/l	2	<2	<2	<2	<0.02
Benzo(g,h,i)perylene	µg/l	1	<1	<1	<1	<0.01
Chrysene	µg/l	1	<1	<1	<1	<0.05
Dibenz(a,h)anthracene	µg/l	1	<1	<1	<1	<0.05
Fluoranthene	µg/l	1	<1	<1	<1	<0.05
Fluorene	µg/l	1	<1	<1	<1	<0.05
Indeno(1,2,3-c,d)pyrene	µg/l	1	<1	<1	<1	<0.05
Naphthalene	µg/l	1	<1	<1	<1	<0.05
Phenanthrene	µg/l	1	<1	<1	<1	<0.05
Pyrene	µg/l	1	<1	<1	<1	<0.05
Total PAHs	µg/l	2	<2	<2	<2	<0.05
C6 - C9	µg/l	20	<20	<20	<20	<20
C10 - C14	µg/l	50	<50	<50	<50	<50
C15 - C28	µg/l	100	<100	<100	<100	<100
C29 - C36	µg/l	100	<100	<100	<100	<100
C10 - C36 (Sum of total)	µg/l	100	<100	<100	<100	<100
Benzene	µg/l	1	<1	<1	<1	<1
Ethylbenzene	µg/l	1	<1	<1	<1	<1
Toluene	µg/l	1	<1	<1	<1	<1
Xylene (m & p)	µg/l	2	<2	<2	<2	<2
Xylene (o)	µg/l	1	<1	<1	<1	<1
Xylene Total	µg/l	3	<3	<3	<3	<3

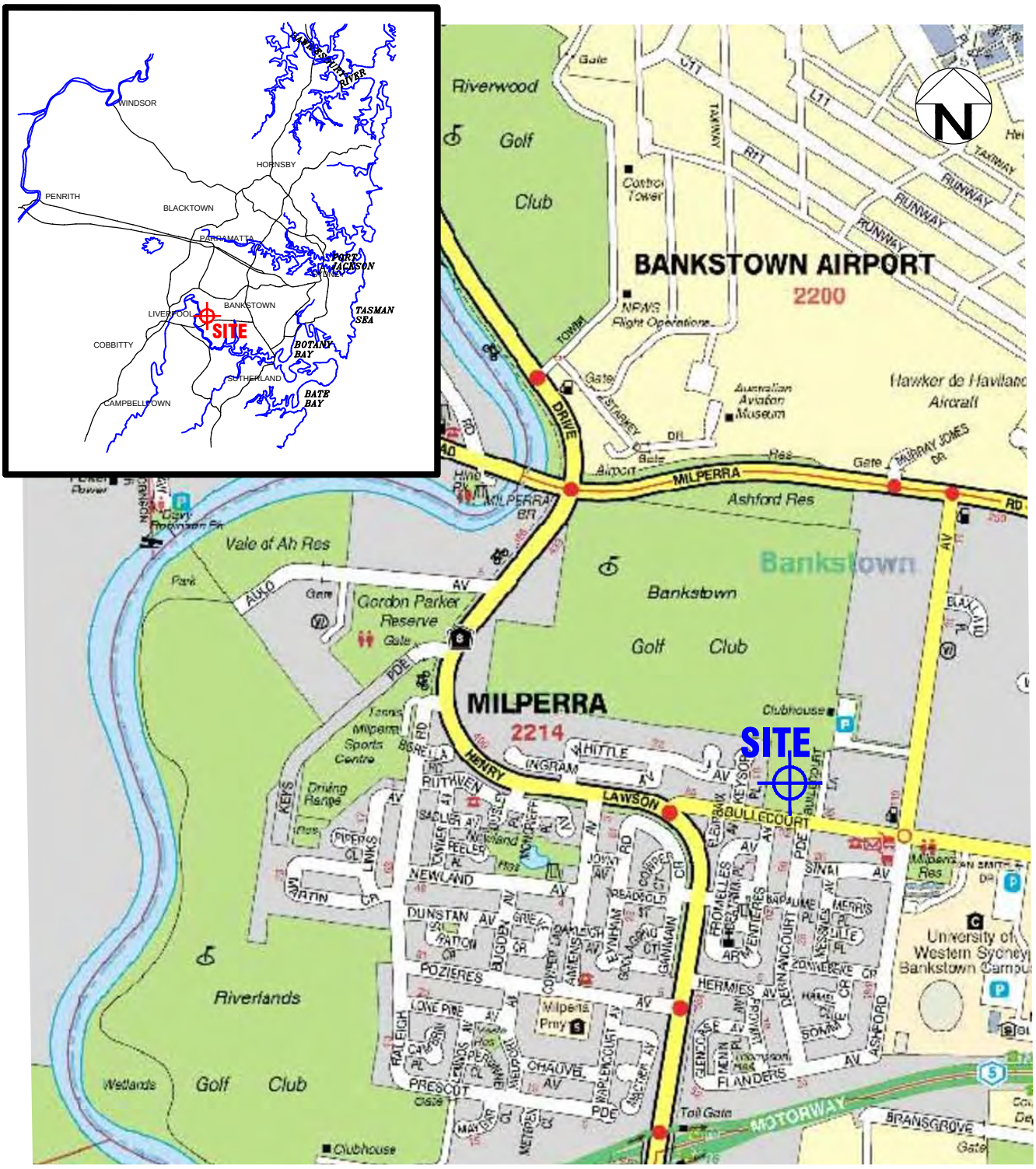
Bankstown Golf Course
Detailed Site Investigation
Table 5 - QA/QC Results - Trip Blank / Trip Spike

Field_ID	TB2	TS2	TB	TS		TB	TS
Matrix	SOIL	SOIL	SOIL	SOIL		WATER	WATER
Sampled_Date	23/01/2013	23/01/2013	25/01/2013	25/01/2013		31/01/2013	31/01/2013
Sample_Type	Trip Blank	Trip Spike	Trip Blank	Trip Spike		Trip Blank	Trip Spike

ChemName	**Units**					**Units**		
C6 - C9	mg/kg	< 10	81%	< 10	77%	mg/L	< 0.02	81%
Benzene	mg/kg	< 0.5	76%	< 0.5	71%	mg/L	< 0.001	103%
Ethylbenzene	mg/kg	< 0.5	88%	< 0.5	80%	mg/L	< 0.001	103%
Toluene	mg/kg	< 1	89%	< 1	80%	mg/L	< 0.002	105%
Total BTEX	mg/kg	< 0.5	89%	< 0.5	80%	mg/L	< 0.001	107%
Xylene (m & p)	mg/kg	< 0.5	83%	< 0.5	76%	mg/L	< 0.001	103%
Xylene (o)	mg/kg	< 1.5	86%	< 1.5	78%	mg/L	< 0.01	104%
Xylene Total	mg/kg	< 1.5	89%	< 1.5	80%	mg/L	< 0.003	106%

Figures

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214



GENERAL AREA MAP

SOURCE: 1:25 000 TOPOGRAPHIC MAP
PARRAMATTA, NEW SOUTH WALES
SHEET: 9130-3-N
2ND EDITION, 1986

200 0 200 600 1000

Scale (metres) 1:20,000

DRAFT

drawn	LZ
approved	FW
date	05.02.13
scale	AS SHOWN
original size	A4

coffey environments

SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

client: BANKSTOWN GOLF CLUB LIMITED

project: BANKSTOWN GOLF COURSE
DETAILED SITE INVESTIGATION

title: SITE LOCATION MAP

project no: ENAURHOD04454AA-D01

figure no: 1

PLOT DATE: 15/02/2013 9:49:10 AM DWG FILE: F:\ENV\PROJECTS\ENAURHOD\ENAURHOD04 GOVIND\ENAURHOD04400-04499\ENAURHOD04454 BANKSTOWN GOLF COURSE ESA\ENAURHOD04454AA DETAILED SITE INVESTIGATION\FIGURES\ENAURHOD04454AA-D01.DWG

A3

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 6.6.2.6613
AERIAL IMAGE © 2013 SINCLAIR KNIGHT MERZ
2013 WHEREIS SENSIS PTY LTD

N

LEGEND

SITE BOUNDARY

0 10 20 30 40 50
SCALE 1:1000 (A3) METRES

NOTE:
ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES.
THIS IS ONE INTERPRETATION ONLY
OTHER INTERPRETATIONS ARE POSSIBLE.

Rev	Date	Revision Details	Drn
A	05.02.13	ISSUE	LZ

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Client:
BANKSTOWN GOLF CLUB LIMITED

Project:
BANKSTOWN GOLF COURSE
DETAILED SITE INVESTIGATION

Location:
CORNER OF BULLECOURT LANE AND BULLECOURT AVENUE, MILPERRA, NSW

Drawing Title:
SITE LAYOUT PLAN

Drawn	Date	
LZ	05.02.13	
Project - Drawing No.	Figure No.	Rev.
ENAURHOD04454AA-D01	2	A

A3

N

LEGEND

- SITE BOUNDARY
- TEST PIT (GEOTECHNIQUE, 2011)
- TEST PIT (COFFEY, 2013)
- MONITORING WELL (COFFEY, 2013)

0 10 20 30 40 50
SCALE 1:1000 (A3) METRES

NOTE:
ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES.
THIS IS ONE INTERPRETATION ONLY
OTHER INTERPRETATIONS ARE POSSIBLE.

Rev	Date	Revision Details	Drn
A	05.02.13	ISSUE	LZ

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Client:
BANKSTOWN GOLF CLUB LIMITED

Project:
BANKSTOWN GOLF COURSE
DETAILED SITE INVESTIGATION

Location:
CORNER OF BULLECOURT LANE AND BULLECOURT AVENUE, MILPERRA, NSW

Drawing Title:
SAMPLE LOCATION PLAN

Drawn	Date	
LZ	05.02.13	
Project - Drawing No.	Figure No.	Rev.
ENAURHOD04454AA-D01	3	A

A3

N

LEGEND

- SITE BOUNDARY
- TEST PIT (GEOTECHNIQUE, 2011)
- TEST PIT (COFFEY, 2013)
- MONITORING WELL (COFFEY, 2013)

0 10 20 30 40 50
SCALE 1:1000 (A3) METRES

NOTE:
ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES.
THIS IS ONE INTERPRETATION ONLY
OTHER INTERPRETATIONS ARE POSSIBLE.

Rev	Date	Revision Details	Drn
A	05.02.13	ISSUE	LZ

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Client:
BANKSTOWN GOLF CLUB LIMITED

Project:
BANKSTOWN GOLF COURSE
DETAILED SITE INVESTIGATION

Location:
CORNER OF BULLECOURT LANE AND BULLECOURT AVENUE, MILPERRA, NSW

Drawing Title:
SAMPLES WITH RESULTS EXCEEDING SOIL CRITERIA

Drawn	Date	
LZ	05.02.13	
Project - Drawing No.	Figure No.	Rev.
ENAURHOD04454AA-D01	4	A

A3

N

LEGEND

- SITE BOUNDARY
- TEST PIT (GEOTECHNIQUE, 2011)
- TEST PIT (COFFEY, 2013)
- MONITORING WELL (COFFEY, 2013)

0 10 20 30 40 50
SCALE 1:1000 (A3) METRES

NOTE:
ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES.
THIS IS ONE INTERPRETATION ONLY
OTHER INTERPRETATIONS ARE POSSIBLE.

Rev	Date	Revision Details	Drn
A	05.02.13	ISSUE	LZ

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Client:
BANKSTOWN GOLF CLUB LIMITED

Project:
BANKSTOWN GOLF COURSE
DETAILED SITE INVESTIGATION

Location:
CORNER OF BULLECOURT LANE AND BULLECOURT AVENUE, MILPERRA, NSW

Drawing Title:
SAMPLES WITH RESULTS EXCEEDING GROUNDWATER CRITERIA

Drawn	Date	
LZ	05.02.13	
Project - Drawing No.	Figure No.	Rev.
ENAURHOD04454AA-D01	5	A

Appendix A
NSW Office of Water Bore Licence

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214

NSW Office of Water

Sydney South Coast Region
Po Box 3720
10 Valentine Avenue
Parramatta NSW 2124
Phone: (02) 82817777

BORE LICENSE CERTIFICATE
UNDER SECTION 115 OF THE WATER ACT, 1912

10BL605297

Department of Primary Industries Office of Water

Bankstown Golf Club Limited
C/- Coffey Environments Aust Pty Ltd
Level 19, 799 Pacific Highway
Chatswood NSW 2067

LICENSE NUMBER
10BL605297
DATE LICENSE VALID FROM
08-Jan-2013
DATE LICENSE VALID TO
PERPETUITY
FEE
$0.00

ABN 47661556763 GST NIL

LOCATION OF WORKS

Portion(s) or Lot/Section/DP	PARISH	COUNTY
161//752013	Bankstown	Cumberland
272//752013	Bankstown	Cumberland

TYPE OF WORKS	PURPOSE(S) FOR WHICH WATER MAY BE USED
Bore	Monitoring Bore

CONDITIONS APPLYING TO THIS LICENSE ARE

As shown on the attached Condition Statement

- 8 JAN 2013

ORIGINAL

NSW Office of Water

CONDITIONS STATEMENT REFERRED TO ON 10BL605297 ISSUED UNDER PART V OF THE WATER ACT, 1912 ON 08-Jan-2013

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO NSW OFFICE OF WATER:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW NSW OFFICE OF WATER OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY NSW OFFICE OF WATER.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY NSW OFFICE OF WATER THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY NSW OFFICE OF WATER.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;
- ANY OTHER PERSONS LAND;
- ANY CROWN LAND;
- ANY RIVER, CREEK OR WATERCOURSE;
- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;
- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-
(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH NSW OFFICE OF WATER, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR
(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

End Of Conditions

Appendix B
Selected Site Photographs

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Site Photographs

Photo 1: Open stormwater drain, looking west

Photo 2: Equipment storage located eastern site boundary, looking south

Photo 3:Chemical store inside storage shed

Photo 4: Tool store inside storage shed

Photo 5: Soil stockpiles located in the north-western corner of the site, looking north-west

Photo 6: Soil stockpiles and vegetation located in the north-western corner of the site, looking east

Photo 7: Practice green overlooking commercial / light industrial properties to the east of the site

Photo 8: Former nursery green adjacent to storage shed, looking north

Appendix C
Borehole and Test Pit Logs

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214

coffey environments

Environmental Log - Piezometer

Borehole No.	**MW1**
Sheet	1 of 1
Office Job No.:	**ENAURHOD04454AA**
Client:	**Bankstown Golf Club Limited**
Date started:	**23.1.2013**
Principal:	
Date completed:	**23.1.2013**
Project:	**Detailed Site Investigation**
Logged by:	**KS**
Borehole Location:	**Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214**
Checked by:	**FW**

drill model & mounting: Geoprobe 7822DT Mobile | Easting: 313858 | slope: -90° | R.L. Surface:

hole diameter: | Northing: 6242942 | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
HA				E+0.0						**FILL**: Gravelly Silt, fine grained, dark grey and brown.		D	No odour/stain.
				E+0.0					ML	SILT: fine grained, pale brown.		MD	
									CL	CLAY: medium plasticity, brown and red.		St	
				E+0.0			1			Becoming red.			
PT										Becoming red and grey mottled.			
			31/01/2013				2			Becoming grey with trace of gravel.			
				E+0.0						Becoming red and grey with trace of gravel.			Gravel of Ironstone.
SS				E+0.0			3						
							4						
									OL	SHALE: pale brown and grey.		H	
							5						
							6						
							7			Becoming grey and black.			
							8						
										Borehole terminated at 8m			
							9						
							10						

method

AS	auger screwing*
AD	auger drilling*
RR	roller/tricone
W	washbore
CT	cable tool
DT	diatube
B	blank bit
V	V bit
T	TC bit
TBX	Tubex
MEX	Mechanical Excavator

*bit shown by suffix e.g. ADT

support: C casing; N nil

penetration: 1 2 3 4 — no resistance ranging to refusal

water: 10/1/98 water level on date shown; water inflow; water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
P	pressure meter
Bs	bulk sample
R	refusal
E	environmental sample
PID	PID measurement
WS	water sample
PZ	piezometer
ALT	air lift test

classification symbols and soil description: based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

PIEZOMETER ENAURHOD04454AA.GPJ COFFEY.GDT 15.2.13

Form GEO 5.10 Issue 3 Rev.0

coffey environments

Environmental Log - Piezometer

Borehole No. **MW2**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***23.1.2013***

Principal:

Date completed: ***23.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Borehole Location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

drill model & mounting: Geoprobe 7822DT Mobile | Easting: 313858 | slope: -90° | R.L. Surface:

hole diameter: | Northing: 6242941 | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
HA				E+0.1					SM	**TOPSOIL**: Silty sand, fine grained, pale brown with trace of sand.		MD	No odour/stain
				E+0.0						**FILL**: Silt, fine grained, pale brown.		D	Abundant rootlets. Occasional tile fragments.
				E+0.0						**FILL**: Silty Sand, fine grained, white and pale brown.			
PT										Becoming pale brown and grey with trace of gravel.		H	Gravel of Ironstone.
				E+0.0			2		CL	CLAY: medium plasticity, red and orange.		St	
			31/01/2013							Becoming grey.		VSt	
				E+0.0						Becoming low plasticity.			
				E+0.0			4			With trace of gravel.			
SS													
							6			Becoming grey and pink.			
							8			Becoming pale brown and grey.			
									OL	SHALE: grey.		H	
							10			Becoming dark grey and black.			
							12			Borehole terminated at 12m			
							14						

PIEZOMETER ENAURHOD04454AA.GPJ COFFEY.GDT 15.2.13

Form GEO 5.10 Issue 3 Rev.0

method

AS	auger screwing*
AD	auger drilling*
RR	roller/tricone
W	washbore
CT	cable tool
DT	diatube
B	blank bit
V	V bit
T	TC bit
TBX	Tubex
MEX	Mechanical Excavator

*bit shown by suffix e.g. ADT

support

C casing N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
P	pressure meter
Bs	bulk sample
R	refusal
E	environmental sample
PID	PID measurement
WS	water sample
PZ	piezometer
ALT	air lift test

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Piezometer

Borehole No. **MW3**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: **Bankstown Golf Club Limited**

Date started: **23.1.2013**

Principal:

Date completed: **23.1.2013**

Project: **Detailed Site Investigation**

Logged by: **KS**

Borehole Location: **Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214**

Checked by: **FW**

drill model & mounting: Geoprobe 7822DT Mobile | Easting: 313857 | slope: -90° | R.L. Surface:

hole diameter: | Northing: 624294 | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
HA				E+0.0						**TOPSOIL**: Sandy Silt, pale brown	M	D	No odour / stain
				E+0.0						**FILL**: Silty with some sand, pale brown	M	MD	No odour / stain, fragments of plastic
										FILL: Extremely weathered sandstone, whie and pale brown, recovered as silty sand	M	D	No odour / stain
PT				E+0.0					CL	**CLAY**: Medium plasticity, grey and orange (extremely weathered shale)	M	St	No odour / stain, gravel of limestone
			31/01/13				2			As above, grey, with trace of gravel	M	St	No odour / stain
				E+0.0						As above, grey	M	F	No odour / stain, gravel of limestone
				E+0.0						As above, red, some limestone gravel	M	St	No odour / stain
							4			As above, grey and red mottled	M	St	
				E+0.0						As above, becoming grey, no gravels	M	St	
ADT				E+0.0						As above, mottled grey and red	M	St	
							6			As above, blue and grey	M	St	
										As above, red	M	St	
							8						
							10		OL	SHALE: Highly weathered, brown, faint fabric	M	VSt	
										As above	M	St	
							12			Borehole terminated at 12m			
							14						

PIEZOMETER ENAURHOD04454AA.GPJ COFFEY.GDT 15.2.13

Form GEO 5.10 Issue 3 Rev.0

method

AS	auger screwing*
AD	auger drilling*
RR	roller/tricone
W	washbore
CT	cable tool
DT	diatube
B	blank bit
V	V bit
T	TC bit
TBX	Tubex
MEX	Mechanical Excavator

*bit shown by suffix e.g. ADT

support

C casing N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
P	pressure meter
Bs	bulk sample
R	refusal
E	environmental sample
PID	PID measurement
WS	water sample
PZ	piezometer
ALT	air lift test

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP1**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 3131667 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242835 m | datum:

excavation information						material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0				**TOPSOIL**: Silt, fine grained, pale brown with trace of gravel.	M	MD		No odour/stain.
				E+0.0	0.5			**FILL**: Silty Sand, fine grained, pale brown.				Plastic bag pieces.
							SM	**SAND**: Silty, fine grained, white and pale grey.				
				E+0.0	1.0		CL	**CLAY**: medium plasticity, grey and brown.		St		
								Test pit TP1 terminated at 1.2m				Test pit terminated at 1.2m (target depth).
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							
					4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP2**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313801 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242788 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, pale brown with some clay.	M	D		No odour/stain.
								SM	**SAND**: Silty, fine grained, white and pale grey.				
				E+0.0		0.5							
								CL	**CLAY**: medium plasticity, orange, grey and red.		St		
				E+0.0		1.0							
									Test pit TP2 terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP3**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313774 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242795 m | datum:

excavation information					material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetrometer kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silt, fine grained, pale brown with some clay.	M	MD		No odour/stain.
						0.5		SM	**SAND**: Silty, fine grained, white and pale grey.				
				E+0.0				CL	**CLAY**: medium plasticity, grey, brown and red.		St		
				E+0.0		1.0							
									Test pit TP3 terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP4**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313744 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242798 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silt, sandy, fine grained, pale brown with some clay.		MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey, brown and white.				
				E+0.1		0.5							
								CL	**CLAY**: medium plasticity, grey, red and brown with some gravel.		VSt		
				E+0.0		1.0							
									Test pit TP4 terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP5**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313717 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242802 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silt, sandy, fine grained, pale brown with some clay.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale brown and white.				
				E+0.0		0.5							
								SC	**SAND**: Clayey, fine and medium grained. red, grey and brown.				
				E+0.0		1.0							
									Test pit TP5 terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP6**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313685 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242807 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silt, sandy, fine grained, pale brown with some clay and sand.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale brown.				
				E+0.0		0.5							
				E+0.0		1.0		SW	**SAND**: fine and medium grained, orange and grey with trace of gravel.		D		
									Test pit TP6 terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP7**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313685 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242824 m | datum:

excavation information						material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0	0.0			**TOPSOIL**: Silt, sandy, fine grained, pale brown with some clay and sand.	M	MD		No odour/stain.
							SM	**SAND**: Silty, fine grained, pale brown and white.				
				E+0.0	0.5							
							SC	**CLAY**: Sandy, medium plasticity, grey, orange and red with trace of gravel.		VSt		
				E+0.0	1.0							
								Test pit TP7 terminated at 1.1m				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							
					4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP8**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313715 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 624817 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetrometer kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silt, sandy, fine grained, pale brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale brown and white.				
				E+0.0		0.5							
								CL	**CLAY**: medium plasticity, grey, red and orange.		VSt		
				E+0.0		1.0							
									Test pit TP8 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP9**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313747 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242815 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, pale brown.	M	MD		No odour/stain.
				E+0.0		0.5		SM	**SAND**: Silty, fine grained, pale brown and white.				
				E+0.0		1.0		CL	**CLAY**: low plasticity, grey and orange.		VSt		
						1.5			Test pit TP9 terminated at 1m				
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP10**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.2.2759***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313772 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242811 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, pale brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, white.				
				E+0.0		0.5							
								CL	**CLAY**: low plasticity, grey, red and orange with some sand.		VSt		
				E+0.0		1.0							
									Test pit TP10 terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP11**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313800 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242808 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown.	M	MD		No odour/stain.
				E+0.1		0.5		SM	**SAND**: Silty, fine grained, white, grey and pale brown.				
				E+0.0		1.0		SC	**CLAY**: Sandy, low plasticity, grey, red and orange.		F		
									Test pit TP11 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP12**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313837 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242804 m | datum:

excavation information					material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetrometer kPa 100 200 300 400	structure and additional observations
BH				E+0.0	0.0			**TOPSOIL**: Silty sand, fine grained, dark brown with some clay.	M	MD		No odour/stain.
							SM	**SAND**: Silty, fine grained, pale brown and white.				
				E+0.0	0.5							
							SC	**CLAY**:Sandy, low plasticity, grey, red and orange.		St		
				E+0.0	1.0							
								Test pit TP12 terminated at 1.2m				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							
					4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP13**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313837 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242828 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, dark brown.	M	MD		No odour/stain.
								SM	**FILL**: Silty clay, low plasticity, grey and orange with trace of gravel and cobbles.				
				E+0.0		0.5			**SAND**: Silty, fine grained, white and pale brown.				
											St		
				E+0.0		1.0		CL	**CLAY**: Sandy, low plasticity, grey, red and orange.				
									Test pit TP13 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP14**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313803 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242836 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown with some clay.	M	MD		No odour/stain.
									FILL: Silty clay, low plasticity, orange and brown with some gravel.		F		
				E+0.0		0.5							
								SM	**SAND**: Silty, fine grain, pale grey, trace of gravel.		MD		
				E+0.0		1.0		CL	**CLAY**: low plasticity, grey, red and orange.		St		
									Test pit TP14 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP15**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313783 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242840 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey and white with trace of gravel.				
				E+0.0		0.5							
								CL	**CLAY**: low plasticity, grey, orange and brown.		St		
				E+0.0		1.0			Test pit TP15 terminated at 0.9m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP16**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313753 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242843 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, pale brown.	M	MD		No odour/stain.
								SM	**SAND**: Silt, fine grained, white and grey.				
				E+0.0		0.5							
								CL	**CLAY**: low plasticity, grey, orange and red.		St		
				E+0.0		1.0							
									Test pit TP16 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP17**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313726 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242845 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, white and pale brown.				
				E+0.0		0.5							
				E+0.0		1.0		SC	**SAND**: Clayey, fine and medium grained, grey, orange and red.				
									Test pit TP17 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP18**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313694 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242850 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, white and pale brown.				
				E+0.0		0.5							
								CL	**CLAY**: low plasticity, orange and grey with some gravel.		St		
				E+0.0		1.0							
									Test pit TP18 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP19**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313729 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242870 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown.	M	MD		No odour/stain
								CL	**CLAY**: medium plasticity, orange and brown.		F		
				E+0.0		0.5							
									Becoming grey, red and orange.		St		
				E+0.0		1.0							
									Test pit TP19 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP20**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313756 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242865 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, dark brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey and white.				
				E+0.0		0.5							
								CL	**CLAY**: medium plasticity, grey and orange.		St		
				E+0.0		1.0							
									Test pit TP20 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP21**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313782 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242860 m | datum:

excavation information						material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0	0.0			**TOPSOIL**: Sandy silt, fine grained, dark brown.	M	MD		No odour/stain.
							SM	**SAND**: Silt, fine grained, white and pale grey.				
							CL	**CLAY**: medium plasticity, brown.		St		
				E+0.0	0.5							
				E+0.0				Test pit TP21 terminated at 0.65m				
					1.0							
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							
					4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
S shoring N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP22**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313813 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242856 m | datum:

excavation information						material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0				**TOPSOIL**: Silty sand, fine grained, dark brown.				
				E+0.0	0.5		SM	**SAND**: Silty, fine grained, pale grey.				
				E+0.0			CL	**CLAY**: medium plasticity, orange and brown.				
					1.0			Test pit TP22 terminated at 0.8m				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							
					4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP23**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***24.1.2013***

Principal:

Date completed: ***24.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Bobcat 430 | Pit Orientation: | Easting: 313847 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242853 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained. dark brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey.				
				E+0.0		0.5							
								CL	**CLAY**: medium plasticity, orange and brown.		St		
				E+0.0		1.0							
									Test pit TP23 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP24**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313819 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242899 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, pale brown.	M	MD		No odour/stain
								SM	**SAND**: Silty, fine grained, pale brown.				
				E+0.0		0.5		CL	**CLAY**: medium plasticity, orange and brown with some sand.		F		
									Becoming red and grey.		St		
				E+0.0		1.0							
									Test pit TP24 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP24A**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313794 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242901 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, dark brown.	M	MD		No odour/stain
								SM	**SAND**: Silt, fine grained, white and pale grey.				
				E+0.1		0.5		CL	**CLAY**: medium plasticity, orange, brown and pale grey.		St		
											F		
				E+0.0		1.0			Becoming orange and grey with some sand.				
									Test pit TP24A terminated at 1.1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP25**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313764 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242905 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, pale brown with trace of gravel.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey and white.				
				E+0.0		0.5		CL	**CLAY**: medium plasticity, brown, orange and pale grey.		F		
				E+0.0		1.0			With some sand.				
									Test pit TP25 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP26**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313736 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242907 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.1					**TOPSOIL**: Sandy silt, ine grained, pale brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey and white.				
				E+0.2		0.5							
								CL	**CLAY**: medium plasticity orange, brown and grey.		F		
									With some sand.				
				E+0.0		1.0			Test pit TP26 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP27**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313706 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242910 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, pale brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale grey and white.				
				E+0.0		0.5		CL	**CLAY**: medium plasticity, orange and brown.		F		
				E+0.0		1.0			Becoming orange, brown and pale grey with some sand.				
									Test pit TP27 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP28**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313715 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242940 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silty sand, fine grained, dark brown.	M	MD		No odour/stain,
				E+0.0					**FILL**: Sand, fine grained, orange with some gravel.		L		
									FILL: Gravelly sand, fine grained, brown with some silt and trace of cobbles.		MD		Cobbles of brick.
				E+0.0		1			**FILL**: Clay, medium plastivity, green and grey.		S		
								CL	**CLAY**: medium plasticity, orange, brown and grey.		F		
				E+0.0		2							
				E+0.0					Test pit TP28 terminated at 2.5m				
						3							
						4							
						5							
						6							

Sketch

method

N	natural exposure
X	existing excavation
BH	backhoe bucket
B	bulldozer blade
R	ripper
E	excavator

support

S shoring N nil

penetration

1 2 3 4 — no resistance ranging to refusal

water

water level on date shown

water inflow

water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
V	vane shear (kPa)
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
W_L	liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP29**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313734 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242936 m | datum:

excavation information					material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.2	0			**TOPSOIL**: Sandy silt, fine grained, dark brown.	M	MD		No odour/stain.
				E+0.1				**FILL**: Gravel, fine grained, angular and subangular, pale grey.		L		
								FILL: Gravelly clay, low plasticity, brown.		F		
				E+0.0	1		CL	**FILL**: Clay, medium plasticity, dark brown and black.				
								CLAY: medium plasticity, orange, brown and grey with some gravel.				
				E+0.0	2							
				E+0.0								
					3			Test pit TP29 terminated at 2.5m				
					4							
					5							
					6							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP30**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313755 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242940 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Silt, fine grained, pale brown.	M	MD		No odour/stain.
				E+0.0					**FILL**: Gravel, fine grained, angular and subangular, grey.		L		
									FILL: Silty clay, low plasticity, pale brown with trace of gravel.		F		Occaisional fragment of brick.
				E+0.0		1							
									FILL: Clay, medium plasticity, green and grey.		S		
								CL	**CLAY**: medium plasticity, orange, brown and red.		F		
				E+0.0		2			Becoming red and grey mottled.				
									Test pit TP30 terminated at 2.1m				
						3							
						4							
						5							
						6							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP31**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313780 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242934 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0					**TOPSOIL**: Sandy silt, fine grained, pale brown.	M	MD		No odour/stain.
				E+0.1				SM	**SAND**: Silty, fine grained, pale brown and grey.		D		
								CL	**CLAY**: low plasticity, orange and red with some sand.		St		
				E+0.0		1							
									Test pit TP31 terminated at 1m				
						2							
						3							
						4							
						5							
						6							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration 1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP32**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313804 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242934 m | datum:

excavation information						material substance						
method	penetration 1 2 3	support	water	notes samples, tests, etc	RL / depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.0				**TOPSOIL**: Sandy silt, fine grained, pale brown.	M	MD		No odour/stain.
							SM	**SAND**: Silty, fine grained, pale brown.		D		
				E+0.0	0.5							
							CL	**CLAY**: medium plasticity, orange and brown.		VSt		
				E+0.0	1.0			Becoming red and grey mottled.				
								Test pit TP32 terminated at 1m				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							
					4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
S shoring N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

coffey environments

Environmental Log - Test Pit

Excavation No. **TP33**

Sheet 1 of 1

Office Job No.: **ENAURHOD04454AA**

Client: ***Bankstown Golf Club Limited***

Date started: ***25.1.2013***

Principal:

Date completed: ***25.1.2013***

Project: ***Detailed Site Investigation***

Logged by: ***KS***

Test pit location: ***Cnr of Bullecourt Ave and Bullecourt Ln, Milperra, NSW 2214***

Checked by: ***FW***

equipment type and model: Kubuta USS4 | Pit Orientation: | Easting: 313700 m | R.L. Surface:

excavation dimensions: m long m wide | Northing: 6242911 m | datum:

excavation information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
BH				E+0.1					**TOPSOIL**: Sandy silt, fine grained, pale brown.	M	MD		No odour/stain.
								SM	**SAND**: Silty, fine grained, pale brown.		D		
				E+0.1		0.5		CL	**CLAY**: medium plasticity, orange and brown.		VSt		
									Becoming red and grey mottled.				
				E+0.0		1.0			Test pit TP33 terminated at 1m				
						1.5							
						2.0							
						2.5							
						3.0							
						3.5							
						4.0							

Sketch

method
- N natural exposure
- X existing excavation
- BH backhoe bucket
- B bulldozer blade
- R ripper
- E excavator

support
- S shoring
- N nil

penetration
1 2 3 4 — no resistance ranging to refusal

water
- water level on date shown
- water inflow
- water outflow

notes, samples, tests
- U_{50} undisturbed sample 50mm diameter
- U_{63} undisturbed sample 63mm diameter
- D disturbed sample
- V vane shear (kPa)
- Bs bulk sample
- E environmental sample
- R refusal

classification symbols and soil description
based on unified classification system

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- W_L liquid limit

consistency/density index

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

Appendix D
Certified Laboratory Reports and Chain of Custody Documentation

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214

mgt LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**366732-S**
Client Reference	BANKSTOWN GOLF CLUB ENAURHOD04454AA
Received Date	Jan 29, 2013

Client Sample ID			**MW1_0.4-0.5**	**MW1_2.5-2.7**	**MW2_0.4-0.5**	**MW2_3.6-3.8**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
mgt-LabMark Sample No.			**S13-Ja14211**	**S13-Ja14214**	**S13-Ja14216**	**S13-Ja14220**
Date Sampled			**Jan 23, 2013**	**Jan 23, 2013**	**Jan 23, 2013**	**Jan 23, 2013**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	80	90	95	94
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	-	0.12	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.2	mg/kg	< 0.2	-	< 0.2	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
a-Chlordane	0.05	mg/kg	< 0.05	-	0.18	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-

Client Sample ID			MW1_0.4-0.5	MW1_2.5-2.7	MW2_0.4-0.5	MW2_3.6-3.8
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14211	S13-Ja14214	S13-Ja14216	S13-Ja14220
Date Sampled			Jan 23, 2013	Jan 23, 2013	Jan 23, 2013	Jan 23, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides (OC)						
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
g-Chlordane	0.05	mg/kg	< 0.05	-	0.13	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Dibutylchlorendate (surr.)	1	%	88	-	84	-
Tetrachloro-m-xylene (surr.)	1	%	117	-	77	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	< 0.5	-
Coumaphos	0.5	mg/kg	< 0.5	-	< 0.5	-
Demeton (total)	1	mg/kg	< 1	-	< 1	-
Diazinon	0.5	mg/kg	< 0.5	-	< 0.5	-
Dichlorvos	0.5	mg/kg	< 0.5	-	< 0.5	-
Dimethoate	0.5	mg/kg	< 0.5	-	< 0.5	-
Disulfoton	0.5	mg/kg	< 0.5	-	< 0.5	-
Ethoprop	0.5	mg/kg	< 0.5	-	< 0.5	-
Fenitrothion	0.5	mg/kg	< 0.5	-	< 0.5	-
Fensulfothion	0.5	mg/kg	< 0.5	-	< 0.5	-
Fenthion	0.5	mg/kg	< 0.5	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	< 0.5	-
Malathion	0.5	mg/kg	< 0.5	-	< 0.5	-
Methyl parathion	0.5	mg/kg	< 0.5	-	< 0.5	-
Mevinphos	0.5	mg/kg	< 0.5	-	< 0.5	-
Monocrotophos	10	mg/kg	< 10	-	< 10	-
Parathion	0.5	mg/kg	< 0.5	-	< 0.5	-
Phorate	0.5	mg/kg	< 0.5	-	< 0.5	-
Profenofos	0.5	mg/kg	< 0.5	-	< 0.5	-
Prothiofos	0.5	mg/kg	< 0.5	-	< 0.5	-
Ronnel	0.5	mg/kg	< 0.5	-	< 0.5	-
Stirophos	0.5	mg/kg	< 0.5	-	< 0.5	-
Trichloronate	0.5	mg/kg	< 0.5	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	112	-	114	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	-	< 1	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID			MW1_0.4-0.5	MW1_2.5-2.7	MW2_0.4-0.5	MW2_3.6-3.8
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14211	S13-Ja14214	S13-Ja14216	S13-Ja14220
Date Sampled			Jan 23, 2013	Jan 23, 2013	Jan 23, 2013	Jan 23, 2013
Test/Reference	LOR	Unit				
Polyaromatic Hydrocarbons (PAH)						
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	1	mg/kg	< 1	-	< 1	-
2-Fluorobiphenyl (surr.)	1	%	126	-	122	-
p-Terphenyl-d14 (surr.)	1	%	121	-	127	-
Heavy Metals						
Arsenic	2	mg/kg	5.6	< 2	6.0	3.4
Cadmium	0.4	mg/kg	0.5	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	< 5	7.7	6.7
Copper	5	mg/kg	13	8.6	12	7.2
Lead	5	mg/kg	7.1	5.2	16	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	24	< 5
% Moisture	0.1	%	27	20	17	17
Asbestos			see attached	-	see attached	-

Client Sample ID			QC1	TB (SET1)	TS (SET1)	QC2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14221	S13-Ja14222	S13-Ja14223	S13-Ja14225
Date Sampled			Jan 23, 2013	Jan 18, 2013	Jan 18, 2013	Jan 23, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	79%	< 10
TRH C10-C14	50	mg/kg	< 50	-	-	< 50
TRH C15-C28	100	mg/kg	< 100	-	-	< 100
TRH C29-C36	100	mg/kg	< 100	-	-	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	-	-	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	69%	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	81%	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	86%	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	87%	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	88%	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	87%	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	83%	< 1.5
4-Bromofluorobenzene (surr.)	1	%	114	98	96	91
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100

Client Sample ID			QC1	TB (SET1)	TS (SET1)	QC2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14221	S13-Ja14222	S13-Ja14223	S13-Ja14225
Date Sampled			Jan 23, 2013	Jan 18, 2013	Jan 18, 2013	Jan 23, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.2	mg/kg	< 0.2	-	-	< 0.2
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
a-Chlordane	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
g-Chlordane	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	-	< 0.2
Dibutylchlorendate (surr.)	1	%	79	-	-	82
Tetrachloro-m-xylene (surr.)	1	%	67	-	-	69
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	-	-	< 0.5
Demeton (total)	1	mg/kg	< 1	-	-	< 1
Diazinon	0.5	mg/kg	< 0.5	-	-	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	-	-	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	-	-	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	-	-	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	-	-	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	-	-	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	-	-	< 0.5
Fenthion	0.5	mg/kg	< 0.5	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	< 0.5
Malathion	0.5	mg/kg	< 0.5	-	-	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	-	-	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	-	-	< 0.5
Monocrotophos	10	mg/kg	< 10	-	-	< 10
Parathion	0.5	mg/kg	< 0.5	-	-	< 0.5
Phorate	0.5	mg/kg	< 0.5	-	-	< 0.5
Profenofos	0.5	mg/kg	< 0.5	-	-	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	-	-	< 0.5
Ronnel	0.5	mg/kg	< 0.5	-	-	< 0.5
Stirophos	0.5	mg/kg	< 0.5	-	-	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	107	-	-	105

Client Sample ID			QC1	TB (SET1)	TS (SET1)	QC2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14221	S13-Ja14222	S13-Ja14223	S13-Ja14225
Date Sampled			Jan 23, 2013	Jan 18, 2013	Jan 18, 2013	Jan 23, 2013
Test/Reference	LOR	Unit				
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	-	-	< 1
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	1	mg/kg	< 1	-	-	< 1
2-Fluorobiphenyl (surr.)	1	%	120	-	-	114
p-Terphenyl-d14 (surr.)	1	%	126	-	-	122
Heavy Metals						
Arsenic	2	mg/kg	7.0	-	-	3.4
Cadmium	0.4	mg/kg	0.6	-	-	0.5
Chromium	5	mg/kg	25	-	-	14
Copper	5	mg/kg	15	-	-	10
Lead	5	mg/kg	7.6	-	-	8.0
Mercury	0.05	mg/kg	< 0.05	-	-	< 0.05
Nickel	5	mg/kg	< 5	-	-	5.7
Zinc	5	mg/kg	6.3	-	-	< 5
% Moisture	0.1	%	21	-	-	26

Client Sample ID			MW3_0.4-0.5	MW3_1.4-1.7	TP1_0.4-0.5	TP1_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14227	S13-Ja14228	S13-Ja14234	S13-Ja14235
Date Sampled			Jan 23, 2013	Jan 23, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			MW3_0.4-0.5	MW3_1.4-1.7	TP1_0.4-0.5	TP1_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14227	S13-Ja14228	S13-Ja14234	S13-Ja14235
Date Sampled			Jan 23, 2013	Jan 23, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
BTEX						
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	89	89	97	95
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-Chlordane	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-Chlordane	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dibutylchlorendate (surr.)	1	%	97	88	71	-
Tetrachloro-m-xylene (surr.)	1	%	78	72	78	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Demeton (total)	1	mg/kg	< 1	< 1	< 1	-
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			MW3_0.4-0.5	MW3_1.4-1.7	TP1_0.4-0.5	TP1_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14227	S13-Ja14228	S13-Ja14234	S13-Ja14235
Date Sampled			Jan 23, 2013	Jan 23, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Monocrotophos	10	mg/kg	< 10	< 10	< 10	-
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Triphenylphosphate (surr.)	1	%	115	114	114	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	< 1	< 1	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	1.3	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	0.6	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	1.0	< 0.5	< 0.5	-
Total PAH	1	mg/kg	2.9	< 1	< 1	-
2-Fluorobiphenyl (surr.)	1	%	116	118	117	-
p-Terphenyl-d14 (surr.)	1	%	118	124	122	-
Heavy Metals						
Arsenic	2	mg/kg	8.3	< 2	3.3	< 2
Cadmium	0.4	mg/kg	0.7	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	11	18	< 5
Copper	5	mg/kg	42	< 5	19	6.2
Lead	5	mg/kg	67	< 5	20	< 5
Mercury	0.05	mg/kg	0.08	< 0.05	0.11	0.06
Nickel	5	mg/kg	8.8	< 5	19	5.3
Zinc	5	mg/kg	150	< 5	34	14
% Moisture	0.1	%	29	23	12	20
Asbestos			see attached	-	see attached	-

Client Sample ID			TP2_0.4-0.5	TP3_0.05-0.15	TP4_0.9-1.0	TP5_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14237	S13-Ja14239	S13-Ja14244	S13-Ja14245
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	96	94	94	101
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.2	mg/kg	< 0.2	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
a-Chlordane	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
g-Chlordane	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-	-
Dibutylchlorendate (surr.)	1	%	77	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	77	-	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			TP2_0.4-0.5	TP3_0.05-0.15	TP4_0.9-1.0	TP5_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14237	S13-Ja14239	S13-Ja14244	S13-Ja14245
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Coumaphos	0.5	mg/kg	< 0.5	-	-	-
Demeton (total)	1	mg/kg	< 1	-	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	-
Malathion	0.5	mg/kg	< 0.5	-	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-	-
Monocrotophos	10	mg/kg	< 10	-	-	-
Parathion	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.5	mg/kg	< 0.5	-	-	-
Profenofos	0.5	mg/kg	< 0.5	-	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	111	-	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Fluorene	0.5	mg/kg	< 0.5	-	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-	-
Total PAH	1	mg/kg	< 1	-	-	-
2-Fluorobiphenyl (surr.)	1	%	120	-	-	-
p-Terphenyl-d14 (surr.)	1	%	127	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	6.0	< 5
Copper	5	mg/kg	< 5	13	< 5	< 5
Lead	5	mg/kg	< 5	230	< 5	7.3
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP2_0.4-0.5	TP3_0.05-0.15	TP4_0.9-1.0	TP5_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14237	S13-Ja14239	S13-Ja14244	S13-Ja14245
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	12	130	< 5	12
% Moisture	0.1	%	20	14	18	1.3
Asbestos			see attached	see attached	see attached	see attached

Client Sample ID			TP6_0.4-0.5	TP7_0.9-1.0	TP8_0.4-0.5	TP9_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14249	S13-Ja14253	S13-Ja14255	S13-Ja14258
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	99	97	100	102
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.2	mg/kg	< 0.2	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
a-Chlordane	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-

Client Sample ID			TP6_0.4-0.5	TP7_0.9-1.0	TP8_0.4-0.5	TP9_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14249	S13-Ja14253	S13-Ja14255	S13-Ja14258
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides (OC)						
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
g-Chlordane	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-	-
Dibutylchlorendate (surr.)	1	%	87	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	101	-	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	-
Coumaphos	0.5	mg/kg	< 0.5	-	-	-
Demeton (total)	1	mg/kg	< 1	-	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	-
Malathion	0.5	mg/kg	< 0.5	-	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-	-
Monocrotophos	10	mg/kg	< 10	-	-	-
Parathion	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.5	mg/kg	< 0.5	-	-	-
Profenofos	0.5	mg/kg	< 0.5	-	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	121	-	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			TP6_0.4-0.5	TP7_0.9-1.0	TP8_0.4-0.5	TP9_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14249	S13-Ja14253	S13-Ja14255	S13-Ja14258
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Polyaromatic Hydrocarbons (PAH)						
Fluorene	0.5	mg/kg	< 0.5	-	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-	-
Total PAH	1	mg/kg	< 1	-	-	-
2-Fluorobiphenyl (surr.)	1	%	111	-	-	-
p-Terphenyl-d14 (surr.)	1	%	111	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	5.6	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	5.6	5.4
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.26
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	27	45
% Moisture	0.1	%	0.8	6.6	1.4	1.9
Asbestos			see attached	see attached	see attached	see attached

Client Sample ID			TP10_0.9-1.0	TP11_0.05-0.15	TP12_0.05-0.15	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14262	S13-Ja14263	S13-Ja14266	S13-Ja14269
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	94	92	95	102
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20

Client Sample ID			TP10_0.9-1.0	TP11_0.05-0.15	TP12_0.05-0.15	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14262	S13-Ja14263	S13-Ja14266	S13-Ja14269
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.2	mg/kg	-	-	-	< 0.2
a-BHC	0.05	mg/kg	-	-	-	< 0.05
a-Chlordane	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
g-Chlordane	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.2	mg/kg	-	-	-	< 0.2
Dibutylchlorendate (surr.)	1	%	-	-	-	98
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	70
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	-	< 0.5
Coumaphos	0.5	mg/kg	-	-	-	< 0.5
Demeton (total)	1	mg/kg	-	-	-	< 1
Diazinon	0.5	mg/kg	-	-	-	< 0.5
Dichlorvos	0.5	mg/kg	-	-	-	< 0.5
Dimethoate	0.5	mg/kg	-	-	-	< 0.5
Disulfoton	0.5	mg/kg	-	-	-	< 0.5
Ethoprop	0.5	mg/kg	-	-	-	< 0.5
Fenitrothion	0.5	mg/kg	-	-	-	< 0.5
Fensulfothion	0.5	mg/kg	-	-	-	< 0.5
Fenthion	0.5	mg/kg	-	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	-	< 0.5
Malathion	0.5	mg/kg	-	-	-	< 0.5
Methyl parathion	0.5	mg/kg	-	-	-	< 0.5
Mevinphos	0.5	mg/kg	-	-	-	< 0.5
Monocrotophos	10	mg/kg	-	-	-	< 10
Parathion	0.5	mg/kg	-	-	-	< 0.5
Phorate	0.5	mg/kg	-	-	-	< 0.5
Profenofos	0.5	mg/kg	-	-	-	< 0.5
Prothiofos	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			TP10_0.9-1.0	TP11_0.05-0.15	TP12_0.05-0.15	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14262	S13-Ja14263	S13-Ja14266	S13-Ja14269
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Ronnel	0.5	mg/kg	-	-	-	< 0.5
Stirophos	0.5	mg/kg	-	-	-	< 0.5
Trichloronate	0.5	mg/kg	-	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	-	118
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	-	-	-	< 1
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH	1	mg/kg	-	-	-	< 1
2-Fluorobiphenyl (surr.)	1	%	-	-	-	112
p-Terphenyl-d14 (surr.)	1	%	-	-	-	127
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.3	3.2	5.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	1.4
Chromium	5	mg/kg	8.2	6.2	< 5	8.0
Copper	5	mg/kg	< 5	12	11	34
Lead	5	mg/kg	< 5	15	6.0	21
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	8.6	< 5	11
Zinc	5	mg/kg	< 5	31	26	96
% Moisture	0.1	%	23	28	18	24
Asbestos			see attached	see attached	see attached	see attached

Client Sample ID			TP13_0.4-0.5	TP14_0.05-0.15	TP14_0.9-1.0	TP15_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14270	S13-Ja14272	S13-Ja14274	S13-Ja14276
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP13_0.4-0.5	TP14_0.05-0.15	TP14_0.9-1.0	TP15_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14270	S13-Ja14272	S13-Ja14274	S13-Ja14276
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C29-C36	100	mg/kg	< 100	130	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	130	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	96	91	90	91
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	110	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.2	< 2	< 2
Cadmium	0.4	mg/kg	0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	7.5	8.6	< 5
Copper	5	mg/kg	< 5	560	5.1	8.0
Lead	5	mg/kg	7.7	60	9.7	54
Mercury	0.05	mg/kg	< 0.05	0.07	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	5.4	< 5
Zinc	5	mg/kg	8.7	37	5.4	49
% Moisture	0.1	%	18	27	29	26
Asbestos			-	see attached	-	see attached

Client Sample ID			TP16_0.9-1.0	TP17_0.4-0.5	TP18_0.4-0.5	TP19_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14280	S13-Ja14282	S13-Ja14285	S13-Ja14287
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP16_0.9-1.0	TP17_0.4-0.5	TP18_0.4-0.5	TP19_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14280	S13-Ja14282	S13-Ja14285	S13-Ja14287
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
BTEX						
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	95	95	97	96
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.2	mg/kg	-	-	< 0.2	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
a-Chlordane	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
g-Chlordane	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Dibutylchlorendate (surr.)	1	%	-	-	73	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	59	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			TP16_0.9-1.0	TP17_0.4-0.5	TP18_0.4-0.5	TP19_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14280	S13-Ja14282	S13-Ja14285	S13-Ja14287
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	108	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	-	-	< 1	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH	1	mg/kg	-	-	< 1	-
2-Fluorobiphenyl (surr.)	1	%	-	-	110	-
p-Terphenyl-d14 (surr.)	1	%	-	-	111	-
Heavy Metals						
Arsenic	2	mg/kg	2.2	< 2	< 2	3.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	7.0
Copper	5	mg/kg	< 5	< 5	< 5	6.1
Lead	5	mg/kg	< 5	< 5	< 5	18
Mercury	0.05	mg/kg	0.26	< 0.05	< 0.05	0.17
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	11	< 5	40
% Moisture	0.1	%	16	4.9	5.6	10
Asbestos			-	see attached	see attached	see attached

Client Sample ID			TP20_0.4-0.5	TP21_0.05-0.15	TP22_0.4-0.5	TP23_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14291	S13-Ja14293	S13-Ja14297	S13-Ja14299
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 24, 2013	Jan 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	120	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	120	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	96	90	91	98
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	180	< 100
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.7	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	< 5	7.3	5.8	14
Copper	5	mg/kg	< 5	7.5	6.5	19
Lead	5	mg/kg	< 5	12	13	28
Mercury	0.05	mg/kg	< 0.05	0.39	< 0.05	0.40
Nickel	5	mg/kg	< 5	< 5	< 5	12
Zinc	5	mg/kg	6.0	21	26	48
% Moisture	0.1	%	5.2	20	22	7.7
Asbestos			see attached	see attached	see attached	see attached

Client Sample ID			QC3	QC5	TB2	TS2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14302	S13-Ja14304	S13-Ja14307	S13-Ja14308
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 18, 2013	Jan 18, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	81%
TRH C10-C14	50	mg/kg	< 50	< 50	-	-
TRH C15-C28	100	mg/kg	< 100	< 100	-	-
TRH C29-C36	100	mg/kg	< 100	< 100	-	-

Client Sample ID			QC3	QC5	TB2	TS2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14302	S13-Ja14304	S13-Ja14307	S13-Ja14308
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 18, 2013	Jan 18, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	-	-
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	76%
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	83%
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	88%
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	89%
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	89%
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	89%
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	86%
4-Bromofluorobenzene (surr.)	1	%	94	95	95	98
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.2	mg/kg	< 0.2	< 0.2	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
a-Chlordane	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
g-Chlordane	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Dibutylchlorendate (surr.)	1	%	88	89	-	-
Tetrachloro-m-xylene (surr.)	1	%	78	77	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	-	-
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Demeton (total)	1	mg/kg	< 1	< 1	-	-
Diazinon	0.5	mg/kg	< 0.5	< 0.5	-	-
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	-	-
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID			QC3	QC5	TB2	TS2
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja14302	S13-Ja14304	S13-Ja14307	S13-Ja14308
Date Sampled			Jan 24, 2013	Jan 24, 2013	Jan 18, 2013	Jan 18, 2013
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	-	-
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenthion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Malathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Monocrotophos	10	mg/kg	< 10	< 10	-	-
Parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Phorate	0.5	mg/kg	< 0.5	< 0.5	-	-
Profenofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Ronnel	0.5	mg/kg	< 0.5	< 0.5	-	-
Stirophos	0.5	mg/kg	< 0.5	< 0.5	-	-
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	117	104	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	< 1	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	1	mg/kg	< 1	< 1	-	-
2-Fluorobiphenyl (surr.)	1	%	128	104	-	-
p-Terphenyl-d14 (surr.)	1	%	127	102	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	< 5	< 5	-	-
Copper	5	mg/kg	< 5	< 5	-	-
Lead	5	mg/kg	< 5	15	-	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	-
Nickel	5	mg/kg	< 5	< 5	-	-
Zinc	5	mg/kg	18	15	-	-
% Moisture	0.1	%	16	7.5	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
mgt-LabMark Suite 1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 31, 2013	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jan 30, 2013	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions	Sydney	Jan 31, 2013	14 Day
- Method: LM-LTM-ORG2010			
Organochlorine Pesticides (OC)	Sydney	Jan 31, 2013	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jan 31, 2013	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Polyaromatic Hydrocarbons (PAH)	Sydney	Jan 31, 2013	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jan 30, 2013	28 Day
- Method: E022 Acid Extractable metals in Soils & E026 Mercury			
% Moisture	Sydney	Jan 30, 2013	28 Day
- Method: E005 Moisture Content			

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
MW1_0.15-0.25	Jan 23, 2013		Soil	S13-Ja14210			X								
MW1_0.4-0.5	Jan 23, 2013		Soil	S13-Ja14211	X	X			X			X	X	X	X
MW1_0.9-1.0	Jan 23, 2013		Soil	S13-Ja14212			X								
MW1_1.9-2.0	Jan 23, 2013		Soil	S13-Ja14213			X								
MW1_2.5-2.7	Jan 23, 2013		Soil	S13-Ja14214	X				X						X
MW2_0.05-0.15	Jan 23, 2013		Soil	S13-Ja14215			X								
MW2_0.4-0.5	Jan 23, 2013		Soil	S13-Ja14216	X	X			X			X	X	X	X
MW2_0.9-1.0	Jan 23, 2013		Soil	S13-Ja14217			X								

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**	
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
MW2_1.8-2.0	Jan 23, 2013		Soil	S13-Ja14218			X								
MW2_3.0-3.2	Jan 23, 2013		Soil	S13-Ja14219			X								
MW2_3.6-3.8	Jan 23, 2013		Soil	S13-Ja14220	X				X						X
QC1	Jan 23, 2013		Soil	S13-Ja14221	X				X			X	X	X	X
TB (SET1)	Jan 18, 2013		Soil	S13-Ja14222				X			X				
TS (SET1)	Jan 18, 2013		Soil	S13-Ja14223				X			X				
TSLAB (SET1)	Jan 18, 2013		Soil	S13-Ja14224				X			X				
QC2	Jan 23, 2013		Soil	S13-Ja14225	X				X			X	X	X	X
MW3_0.05-0.15	Jan 23, 2013		Soil	S13-Ja14226			X								
MW3_0.4-0.5	Jan 23, 2013		Soil	S13-Ja14227	X	X			X			X	X	X	X
MW3_1.4-1.7	Jan 23, 2013		Soil	S13-Ja14228	X				X			X	X	X	X

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NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**	
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
MW3_2.1-2.3	Jan 23, 2013		Soil	S13-Ja14229			X								
MW3_2.9-3.1	Jan 23, 2013		Soil	S13-Ja14230			X								
MW3_3.9-4.1	Jan 23, 2013		Soil	S13-Ja14231			X								
MW3_4.6-4.8	Jan 23, 2013		Soil	S13-Ja14232			X								
TP1_0.1-0.2	Jan 24, 2013		Soil	S13-Ja14233			X								
TP1_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14234	X	X			X			X	X	X	X
TP1_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14235	X				X						X
TP2_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14236			X								
TP2_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14237	X	X			X			X	X	X	X
TP2_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14238			X								
TP3_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14239	X	X			X						X

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NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**	
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP3_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14240			X								
TP3_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14241			X								
TP4_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14242			X								
TP4_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14243			X								
TP4_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14244	X	X			X						X
TP5_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14245	X	X			X						X
TP5_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14246			X								
TP5_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14247			X								
TP6_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14248			X								
TP6_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14249	X	X			X			X	X	X	X
TP6_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14250			X								

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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP7_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14251			X								
TP7_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14252			X								
TP7_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14253	X	X			X						X
TP8_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14254			X								
TP8_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14255	X	X			X						X
TP8_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14256			X								
TP9_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14257			X								
TP9_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14258	X	X			X						X
TP9_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14259			X								
TP10_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14260			X								
TP10_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14261			X								

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP10_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14262	X	X			X						X
TP11_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14263	X	X			X						X
TP11_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14264			X								
TP11_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14265			X								
TP12_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14266	X	X			X						X
TP12_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14267			X								
TP12_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14268			X								
TP13_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14269	X	X			X			X	X	X	X
TP13_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14270	X				X						X

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Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP13_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14271			X								
TP14_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14272	X	X			X						X
TP14_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14273			X								
TP14_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14274	X				X						X
TP15_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14275			X								
TP15_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14276	X	X			X						X
TP15_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14277			X								
TP16_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14278			X								
TP16_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14279			X								

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP16_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14280	X				X						X
TP17_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14281			X								
TP17_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14282	X	X			X						X
TP17_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14283			X								
TP18_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14284			X								
TP18_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14285	X	X			X			X	X	X	X
TP18_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14286			X								
TP19_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14287	X	X			X						X
TP19_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14288			X								

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Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
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Client Job No.: BANKSTOWN GOLF CLUB ENAURHOD04454AA

Order No.:
Report #: 366732
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: Jan 29, 2013 4:54 PM
Due: Feb 6, 2013
Priority: 5 Day
Contact Name: Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP19_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14289			X								
TP20_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14290			X								
TP20_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14291	X	X			X						X
TP20_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14292			X								
TP21_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14293	X	X			X						X
TP21_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14294			X								
TP21_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14295			X								
TP22_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14296			X								
TP22_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14297	X	X			X						X

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP22_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14298			X								
TP23_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14299	X	X			X						X
TP23_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14300			X								
TP23_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14301			X								
QC3	Jan 24, 2013		Soil	S13-Ja14302	X				X			X	X	X	X
QC4	Jan 24, 2013		Soil	S13-Ja14303			X								
QC5	Jan 24, 2013		Soil	S13-Ja14304	X				X			X	X	X	X
QC6	Jan 24, 2013		Soil	S13-Ja14305			X								
QC7	Jan 24, 2013		Soil	S13-Ja14306			X								
TB2	Jan 18, 2013		Soil	S13-Ja14307				X			X				
TS2	Jan 18, 2013		Soil	S13-Ja14308				X			X				

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Received:	Jan 29, 2013 4:54 PM
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Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TSLAB2	Jan 18, 2013		Soil	S13-Ja14309				X			X				
RB_23113	Jan 23, 2013		Water	S13-Ja14310						X		X	X	X	X
RB_24113	Jan 24, 2013		Water	S13-Ja14311						X		X	X	X	X

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/kg	< 10			10	Pass	
TRH C10-C14	mg/kg	< 50			50	Pass	
TRH C15-C28	mg/kg	< 100			100	Pass	
TRH C29-C36	mg/kg	< 100			100	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 1			1	Pass	
o-Xylene	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 1.5			1.5	Pass	
Total BTEX	mg/kg	< 1.5			1.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.2			0.2	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
a-Chlordane	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
g-Chlordane	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/kg	< 1			1	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	101			70-130	Pass	
TRH C10-C14	%	93			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	100			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
o-Xylene	%	101			70-130	Pass	
Xylenes - Total	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	%	103			70-130	Pass	
TRH C6-C10	%	98			70-130	Pass	
TRH >C10-C16	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	%	83			70-130	Pass	
4.4'-DDE	%	85			70-130	Pass	
4.4'-DDT	%	83			70-130	Pass	
a-BHC	%	86			70-130	Pass	
a-Chlordane	%	85			70-130	Pass	
Aldrin	%	88			70-130	Pass	
b-BHC	%	80			70-130	Pass	
d-BHC	%	83			70-130	Pass	
Dieldrin	%	86			70-130	Pass	
Endosulfan I	%	87			70-130	Pass	
Endosulfan II	%	85			70-130	Pass	
Endosulfan sulphate	%	77			70-130	Pass	
Endrin	%	85			70-130	Pass	
Endrin aldehyde	%	82			70-130	Pass	
Endrin ketone	%	82			70-130	Pass	
g-BHC (Lindane)	%	83			70-130	Pass	
g-Chlordane	%	85			70-130	Pass	
Heptachlor	%	84			70-130	Pass	
Heptachlor epoxide	%	86			70-130	Pass	
Hexachlorobenzene	%	87			70-130	Pass	
Methoxychlor	%	83			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	123			70-130	Pass	
Coumaphos	%	125			70-130	Pass	
Diazinon	%	111			70-130	Pass	
Dichlorvos	%	99			70-130	Pass	
Dimethoate	%	127			70-130	Pass	
Disulfoton	%	106			70-130	Pass	
Ethoprop	%	117			70-130	Pass	
Fenitrothion	%	104			70-130	Pass	
Fensulfothion	%	121			70-130	Pass	
Fenthion	%	125			70-130	Pass	
Methyl azinphos	%	106			70-130	Pass	
Malathion	%	126			70-130	Pass	
Methyl parathion	%	119			70-130	Pass	
Mevinphos	%	127			70-130	Pass	
Monocrotophos	%	105			70-130	Pass	
Parathion	%	125			70-130	Pass	
Phorate	%	119			70-130	Pass	
Profenofos	%	123			70-130	Pass	
Prothiofos	%	125			70-130	Pass	
Ronnel	%	115			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Stirophos	%	120			70-130	Pass	
Trichloronate	%	127			70-130	Pass	
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	109			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	103			70-130	Pass	
Benz(a)anthracene	%	98			70-130	Pass	
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	98			70-130	Pass	
Benzo(g.h.i)perylene	%	83			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	81			70-130	Pass	
Fluoranthene	%	99			70-130	Pass	
Fluorene	%	106			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	83			70-130	Pass	
Naphthalene	%	107			70-130	Pass	
Phenanthrene	%	100			70-130	Pass	
Pyrene	%	102			70-130	Pass	
LCS - % Recovery							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	%	83			70-130	Pass	
Cadmium	%	87			70-130	Pass	
Chromium	%	88			70-130	Pass	
Copper	%	111			70-130	Pass	
Lead	%	88			70-130	Pass	
Mercury	%	100			70-130	Pass	
Nickel	%	90			70-130	Pass	
Zinc	%	90			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Ja14211	CP	%	84			70-130	Pass	
TRH C10-C14	S13-Ja14211	CP	%	101			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja14211	CP	%	84			70-130	Pass	
Toluene	S13-Ja14211	CP	%	88			70-130	Pass	
Ethylbenzene	S13-Ja14211	CP	%	92			70-130	Pass	
m&p-Xylenes	S13-Ja14211	CP	%	92			70-130	Pass	
o-Xylene	S13-Ja14211	CP	%	92			70-130	Pass	
Xylenes - Total	S13-Ja14211	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja14211	CP	%	88			70-130	Pass	
TRH C6-C10	S13-Ja14211	CP	%	84			70-130	Pass	
TRH >C10-C16	S13-Ja14211	CP	%	115			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides (OC)				Result 1					
4.4'-DDD	S13-Ja14211	CP	%	112			70-130	Pass	
4.4'-DDE	S13-Ja14211	CP	%	115			70-130	Pass	
4.4'-DDT	S13-Ja14211	CP	%	112			70-130	Pass	
a-BHC	S13-Ja14211	CP	%	115			70-130	Pass	
a-Chlordane	S13-Ja14211	CP	%	114			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	S13-Ja14211	CP	%	115			70-130	Pass	
b-BHC	S13-Ja14211	CP	%	109			70-130	Pass	
d-BHC	S13-Ja14211	CP	%	113			70-130	Pass	
Dieldrin	S13-Ja14211	CP	%	116			70-130	Pass	
Endosulfan I	S13-Ja14211	CP	%	116			70-130	Pass	
Endosulfan II	S13-Ja14211	CP	%	112			70-130	Pass	
Endosulfan sulphate	S13-Ja14211	CP	%	108			70-130	Pass	
Endrin	S13-Ja14211	CP	%	116			70-130	Pass	
Endrin aldehyde	S13-Ja14211	CP	%	102			70-130	Pass	
Endrin ketone	S13-Ja14211	CP	%	110			70-130	Pass	
g-BHC (Lindane)	S13-Ja14211	CP	%	112			70-130	Pass	
g-Chlordane	S13-Ja14211	CP	%	114			70-130	Pass	
Heptachlor	S13-Ja14211	CP	%	115			70-130	Pass	
Heptachlor epoxide	S13-Ja14211	CP	%	115			70-130	Pass	
Hexachlorobenzene	S13-Ja14211	CP	%	115			70-130	Pass	
Methoxychlor	S13-Ja14211	CP	%	111			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S13-Ja14211	CP	%	122			70-130	Pass	
Coumaphos	S13-Ja14211	CP	%	123			70-130	Pass	
Diazinon	S13-Ja14211	CP	%	110			70-130	Pass	
Dichlorvos	S13-Ja14211	CP	%	111			70-130	Pass	
Dimethoate	S13-Ja14211	CP	%	129			70-130	Pass	
Disulfoton	S13-Ja14211	CP	%	105			70-130	Pass	
Ethoprop	S13-Ja14211	CP	%	115			70-130	Pass	
Fenitrothion	S13-Ja14211	CP	%	108			70-130	Pass	
Fensulfothion	S13-Ja14211	CP	%	113			70-130	Pass	
Fenthion	S13-Ja14211	CP	%	129			70-130	Pass	
Methyl azinphos	S13-Ja14211	CP	%	116			70-130	Pass	
Malathion	S13-Ja14211	CP	%	129			70-130	Pass	
Methyl parathion	S13-Ja14211	CP	%	124			70-130	Pass	
Mevinphos	S13-Ja14211	CP	%	128			70-130	Pass	
Monocrotophos	S13-Ja14211	CP	%	110			70-130	Pass	
Parathion	S13-Ja14211	CP	%	128			70-130	Pass	
Phorate	S13-Ja14211	CP	%	119			70-130	Pass	
Profenofos	S13-Ja14211	CP	%	124			70-130	Pass	
Prothiofos	S13-Ja14211	CP	%	128			70-130	Pass	
Ronnel	S13-Ja14211	CP	%	114			70-130	Pass	
Stirophos	S13-Ja14211	CP	%	125			70-130	Pass	
Trichloronate	S13-Ja14211	CP	%	129			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S13-Ja14211	CP	%	128			70-130	Pass	
Acenaphthylene	S13-Ja14211	CP	%	118			70-130	Pass	
Anthracene	S13-Ja14211	CP	%	123			70-130	Pass	
Benz(a)anthracene	S13-Ja14211	CP	%	121			70-130	Pass	
Benzo(a)pyrene	S13-Ja14211	CP	%	109			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja14211	CP	%	116			70-130	Pass	
Benzo(g.h.i)perylene	S13-Ja14211	CP	%	95			70-130	Pass	
Chrysene	S13-Ja14211	CP	%	124			70-130	Pass	
Dibenz(a.h)anthracene	S13-Ja14211	CP	%	96			70-130	Pass	
Fluoranthene	S13-Ja14211	CP	%	122			70-130	Pass	
Fluorene	S13-Ja14211	CP	%	124			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja14211	CP	%	96			70-130	Pass	
Naphthalene	S13-Ja14211	CP	%	126			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenanthrene	S13-Ja14211	CP	%	120			70-130	Pass	
Pyrene	S13-Ja14211	CP	%	126			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Ja14211	CP	%	91			70-130	Pass	
Cadmium	S13-Ja14211	CP	%	91			70-130	Pass	
Chromium	S13-Ja14211	CP	%	90			70-130	Pass	
Copper	S13-Ja14211	CP	%	116			70-130	Pass	
Lead	S13-Ja14211	CP	%	81			70-130	Pass	
Mercury	S13-Ja14211	CP	%	100			70-130	Pass	
Nickel	S13-Ja14211	CP	%	88			70-130	Pass	
Zinc	S13-Ja14211	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S13-Ja14237	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
TRH >C10-C16	S13-Ja14237	CP	%	107			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides (OC)				Result 1					
4.4'-DDD	S13-Ja14237	CP	%	84			70-130	Pass	
4.4'-DDE	S13-Ja14237	CP	%	85			70-130	Pass	
4.4'-DDT	S13-Ja14237	CP	%	72			70-130	Pass	
a-BHC	S13-Ja14237	CP	%	89			70-130	Pass	
a-Chlordane	S13-Ja14237	CP	%	84			70-130	Pass	
Aldrin	S13-Ja14237	CP	%	88			70-130	Pass	
b-BHC	S13-Ja14237	CP	%	83			70-130	Pass	
d-BHC	S13-Ja14237	CP	%	85			70-130	Pass	
Dieldrin	S13-Ja14237	CP	%	85			70-130	Pass	
Endosulfan I	S13-Ja14237	CP	%	86			70-130	Pass	
Endosulfan II	S13-Ja14237	CP	%	83			70-130	Pass	
Endosulfan sulphate	S13-Ja14237	CP	%	73			70-130	Pass	
Endrin	S13-Ja14237	CP	%	83			70-130	Pass	
Endrin aldehyde	S13-Ja14237	CP	%	77			70-130	Pass	
Endrin ketone	S13-Ja14237	CP	%	78			70-130	Pass	
g-BHC (Lindane)	S13-Ja14237	CP	%	85			70-130	Pass	
g-Chlordane	S13-Ja14237	CP	%	84			70-130	Pass	
Heptachlor	S13-Ja14237	CP	%	84			70-130	Pass	
Heptachlor epoxide	S13-Ja14237	CP	%	86			70-130	Pass	
Hexachlorobenzene	S13-Ja14237	CP	%	87			70-130	Pass	
Methoxychlor	S13-Ja14237	CP	%	77			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S13-Ja14237	CP	%	114			70-130	Pass	
Coumaphos	S13-Ja14237	CP	%	118			70-130	Pass	
Diazinon	S13-Ja14237	CP	%	105			70-130	Pass	
Dichlorvos	S13-Ja14237	CP	%	106			70-130	Pass	
Dimethoate	S13-Ja14237	CP	%	124			70-130	Pass	
Disulfoton	S13-Ja14237	CP	%	99			70-130	Pass	
Ethoprop	S13-Ja14237	CP	%	125			70-130	Pass	
Fenitrothion	S13-Ja14237	CP	%	102			70-130	Pass	
Fensulfothion	S13-Ja14237	CP	%	128			70-130	Pass	
Fenthion	S13-Ja14237	CP	%	119			70-130	Pass	
Methyl azinphos	S13-Ja14237	CP	%	103			70-130	Pass	
Malathion	S13-Ja14237	CP	%	122			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methyl parathion	S13-Ja14237	CP	%	118			70-130	Pass	
Mevinphos	S13-Ja14237	CP	%	124			70-130	Pass	
Monocrotophos	S13-Ja14237	CP	%	109			70-130	Pass	
Parathion	S13-Ja14237	CP	%	119			70-130	Pass	
Phorate	S13-Ja14237	CP	%	112			70-130	Pass	
Profenofos	S13-Ja14237	CP	%	128			70-130	Pass	
Prothiofos	S13-Ja14237	CP	%	122			70-130	Pass	
Ronnel	S13-Ja14237	CP	%	109			70-130	Pass	
Stirophos	S13-Ja14237	CP	%	116			70-130	Pass	
Trichloronate	S13-Ja14237	CP	%	122			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S13-Ja14237	CP	%	113			70-130	Pass	
Acenaphthylene	S13-Ja14237	CP	%	105			70-130	Pass	
Anthracene	S13-Ja14237	CP	%	106			70-130	Pass	
Benz(a)anthracene	S13-Ja14237	CP	%	100			70-130	Pass	
Benzo(a)pyrene	S13-Ja14237	CP	%	84			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja14237	CP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	S13-Ja14237	CP	%	78			70-130	Pass	
Chrysene	S13-Ja14237	CP	%	111			70-130	Pass	
Dibenz(a.h)anthracene	S13-Ja14237	CP	%	80			70-130	Pass	
Fluoranthene	S13-Ja14237	CP	%	105			70-130	Pass	
Fluorene	S13-Ja14237	CP	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja14237	CP	%	81			70-130	Pass	
Naphthalene	S13-Ja14237	CP	%	112			70-130	Pass	
Phenanthrene	S13-Ja14237	CP	%	103			70-130	Pass	
Pyrene	S13-Ja14237	CP	%	106			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Ja14237	CP	%	88			70-130	Pass	
Cadmium	S13-Ja14237	CP	%	89			70-130	Pass	
Chromium	S13-Ja14237	CP	%	90			70-130	Pass	
Copper	S13-Ja14237	CP	%	107			70-130	Pass	
Lead	S13-Ja14237	CP	%	88			70-130	Pass	
Mercury	S13-Ja14237	CP	%	101			70-130	Pass	
Nickel	S13-Ja14237	CP	%	92			70-130	Pass	
Zinc	S13-Ja14237	CP	%	111			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja14258	CP	%	101			70-130	Pass	
Toluene	S13-Ja14258	CP	%	102			70-130	Pass	
Ethylbenzene	S13-Ja14258	CP	%	104			70-130	Pass	
m&p-Xylenes	S13-Ja14258	CP	%	104			70-130	Pass	
o-Xylene	S13-Ja14258	CP	%	103			70-130	Pass	
Xylenes - Total	S13-Ja14258	CP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja14258	CP	%	101			70-130	Pass	
TRH C6-C10	S13-Ja14258	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S13-Ja14266	CP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
TRH >C10-C16	S13-Ja14266	CP	%	115			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Ja14266	CP	%	88			70-130	Pass	
Cadmium	S13-Ja14266	CP	%	86			70-130	Pass	
Chromium	S13-Ja14266	CP	%	87			70-130	Pass	
Copper	S13-Ja14266	CP	%	129			70-130	Pass	
Lead	S13-Ja14266	CP	%	86			70-130	Pass	
Mercury	S13-Ja14266	CP	%	100			70-130	Pass	
Nickel	S13-Ja14266	CP	%	89			70-130	Pass	
Zinc	S13-Ja14266	CP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja14282	CP	%	98			70-130	Pass	
Toluene	S13-Ja14282	CP	%	99			70-130	Pass	
Ethylbenzene	S13-Ja14282	CP	%	102			70-130	Pass	
m&p-Xylenes	S13-Ja14282	CP	%	102			70-130	Pass	
o-Xylene	S13-Ja14282	CP	%	102			70-130	Pass	
Xylenes - Total	S13-Ja14282	CP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja14282	CP	%	97			70-130	Pass	
TRH C6-C10	S13-Ja14282	CP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S13-Ja14291	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
TRH >C10-C16	S13-Ja14291	CP	%	87			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Ja14291	CP	%	76			70-130	Pass	
Cadmium	S13-Ja14291	CP	%	88			70-130	Pass	
Chromium	S13-Ja14291	CP	%	87			70-130	Pass	
Copper	S13-Ja14291	CP	%	102			70-130	Pass	
Lead	S13-Ja14291	CP	%	88			70-130	Pass	
Mercury	S13-Ja14291	CP	%	108			70-130	Pass	
Nickel	S13-Ja14291	CP	%	92			70-130	Pass	
Zinc	S13-Ja14291	CP	%	84			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Ja14211	CP	mg/kg	< 10	< 10	<1	30%	Pass	
TRH C10-C14	S13-Ja14211	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C15-C28	S13-Ja14211	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH C29-C36	S13-Ja14211	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S13-Ja14211	CP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total	S13-Ja14211	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S13-Ja14211	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S13-Ja14211	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja14211	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S13-Ja14211	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S13-Ja14211	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S13-Ja14211	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides (OC)				Result 1	Result 2	RPD			
4.4'-DDD	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S13-Ja14211	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
a-BHC	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-Chlordane	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-Chlordane	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S13-Ja14211	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S13-Ja14211	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD		
Acenaphthene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja14211	CP	mg/kg	< 1	< 1	<1	30%	Pass
Benzo(g.h.i)perylene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a.h)anthracene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S13-Ja14211	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Metals M8				Result 1	Result 2	RPD		
Arsenic	S13-Ja14211	CP	mg/kg	5.6	7.4	28	30%	Pass
Cadmium	S13-Ja14211	CP	mg/kg	0.5	< 0.4	23	30%	Pass
Chromium	S13-Ja14211	CP	mg/kg	22	19	14	30%	Pass
Copper	S13-Ja14211	CP	mg/kg	13	15	18	30%	Pass
Lead	S13-Ja14211	CP	mg/kg	7.1	5.8	21	30%	Pass
Mercury	S13-Ja14211	CP	mg/kg	< 0.05	< 0.05	11	30%	Pass
Nickel	S13-Ja14211	CP	mg/kg	< 5	< 5	5.0	30%	Pass
Zinc	S13-Ja14211	CP	mg/kg	< 5	< 5	9.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S13-Ja14237	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C15-C28	S13-Ja14237	CP	mg/kg	< 100	< 100	2.0	30%	Pass
TRH C29-C36	S13-Ja14237	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S13-Ja14237	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S13-Ja14237	CP	mg/kg	< 100	< 100	2.0	30%	Pass
TRH >C34-C40	S13-Ja14237	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides (OC)				Result 1	Result 2	RPD		
4.4'-DDD	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDT	S13-Ja14237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
a-BHC	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-Chlordane	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-Chlordane	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate									
Organochlorine Pesticides (OC)				Result 1	Result 2	RPD			
Heptachlor	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S13-Ja14237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S13-Ja14237	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja14237	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Benzo(g.h.i)perylene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S13-Ja14237	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S13-Ja14237	CP	mg/kg	< 2	< 2	200	30%	Fail	Q15
Cadmium	S13-Ja14237	CP	mg/kg	< 0.4	< 0.4	32	30%	Fail	Q15
Chromium	S13-Ja14237	CP	mg/kg	< 5	< 5	35	30%	Fail	Q15
Copper	S13-Ja14237	CP	mg/kg	< 5	< 5	35	30%	Fail	Q15
Lead	S13-Ja14237	CP	mg/kg	< 5	< 5	51	30%	Fail	Q15
Mercury	S13-Ja14237	CP	mg/kg	< 0.05	< 0.05	51	30%	Fail	Q15
Nickel	S13-Ja14237	CP	mg/kg	< 5	< 5	100	30%	Fail	Q15

Duplicate									
Metals M8				Result 1	Result 2	RPD			
Zinc	S13-Ja14237	CP	mg/kg	12	23	65	30%	Fail	Q02
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja14258	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S13-Ja14258	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S13-Ja14258	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S13-Ja14258	CP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S13-Ja14258	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total	S13-Ja14258	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S13-Ja14258	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja14258	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S13-Ja14258	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja14258	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S13-Ja14266	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C15-C28	S13-Ja14266	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH C29-C36	S13-Ja14266	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S13-Ja14266	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S13-Ja14266	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S13-Ja14266	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S13-Ja14266	CP	mg/kg	3.2	5.7	56	30%	Fail	Q02
Cadmium	S13-Ja14266	CP	mg/kg	< 0.4	< 0.4	19	30%	Pass	
Chromium	S13-Ja14266	CP	mg/kg	< 5	< 5	3.0	30%	Pass	
Copper	S13-Ja14266	CP	mg/kg	11	7.6	38	30%	Fail	Q02
Lead	S13-Ja14266	CP	mg/kg	6.0	6.9	15	30%	Pass	
Mercury	S13-Ja14266	CP	mg/kg	< 0.05	< 0.05	32	30%	Fail	Q15
Nickel	S13-Ja14266	CP	mg/kg	< 5	< 5	14	30%	Pass	
Zinc	S13-Ja14266	CP	mg/kg	26	21	20	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja14282	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S13-Ja14282	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S13-Ja14282	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S13-Ja14282	CP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S13-Ja14282	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total	S13-Ja14282	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S13-Ja14282	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja14282	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S13-Ja14282	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja14282	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S13-Ja14291	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C15-C28	S13-Ja14291	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH C29-C36	S13-Ja14291	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S13-Ja14291	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S13-Ja14291	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S13-Ja14291	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S13-Ja14291	CP	mg/kg	< 2	< 2	27	30%	Pass	
Cadmium	S13-Ja14291	CP	mg/kg	< 0.4	< 0.4	11	30%	Pass	
Chromium	S13-Ja14291	CP	mg/kg	< 5	< 5	50	30%	Fail	Q15
Copper	S13-Ja14291	CP	mg/kg	< 5	< 5	16	30%	Pass	
Lead	S13-Ja14291	CP	mg/kg	< 5	< 5	4.0	30%	Pass	
Mercury	S13-Ja14291	CP	mg/kg	< 0.05	< 0.05	6.0	30%	Pass	
Nickel	S13-Ja14291	CP	mg/kg	< 5	< 5	17	30%	Pass	
Zinc	S13-Ja14291	CP	mg/kg	6.0	< 5	43	30%	Fail	Q15

Comments

Asbestos analysed by: ASET, NATA accreditation no. 14484, report reference ASET32202/ 35382 / 1 - 25

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes mgt-LabMark's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Jean Heng	Client Services
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
James Norford	Senior Analyst-Metal (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

mgt LabMark
ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**366732-W**
Client Reference	BANKSTOWN GOLF CLUB ENAURHOD04454AA
Received Date	Jan 29, 2013

Client Sample ID			**RB_23113**	**RB_24113**
Sample Matrix			**Water**	**Water**
mgt-LabMark Sample No.			**S13-Ja14310**	**S13-Ja14311**
Date Sampled			**Jan 23, 2013**	**Jan 24, 2013**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	0.1	< 0.1
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003
Total BTEX	0.01	mg/L	< 0.01	< 0.01
4-Bromofluorobenzene (surr.)	1	%	82	82
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				
Naphthalene[N02]	0.005	mg/L	< 0.005	< 0.005
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1
Organochlorine Pesticides (OC)				
4.4'-DDD	0.0005	mg/L	< 0.0005	< 0.0005
4.4'-DDE	0.0005	mg/L	< 0.0005	< 0.0005
4.4'-DDT	0.002	mg/L	< 0.002	< 0.002
a-BHC	0.0005	mg/L	< 0.0005	< 0.0005
a-Chlordane	0.0005	mg/L	< 0.0005	< 0.0005
Aldrin	0.0005	mg/L	< 0.0005	< 0.0005
b-BHC	0.0005	mg/L	< 0.0005	< 0.0005
d-BHC	0.0005	mg/L	< 0.0005	< 0.0005
Dieldrin	0.0005	mg/L	< 0.0005	< 0.0005
Endosulfan I	0.0005	mg/L	< 0.0005	< 0.0005
Endosulfan II	0.0005	mg/L	< 0.0005	< 0.0005
Endosulfan sulphate	0.0005	mg/L	< 0.0005	< 0.0005
Endrin	0.0005	mg/L	< 0.0005	< 0.0005
Endrin aldehyde	0.0005	mg/L	< 0.0005	< 0.0005

Client Sample ID			RB_23113	RB_24113
Sample Matrix			Water	Water
mgt-LabMark Sample No.			S13-Ja14310	S13-Ja14311
Date Sampled			Jan 23, 2013	Jan 24, 2013
Test/Reference	LOR	Unit		
Organochlorine Pesticides (OC)				
Endrin ketone	0.0005	mg/L	< 0.0005	< 0.0005
g-BHC (Lindane)	0.0005	mg/L	< 0.0005	< 0.0005
g-Chlordane	0.0005	mg/L	< 0.0005	< 0.0005
Heptachlor	0.0005	mg/L	< 0.0005	< 0.0005
Heptachlor epoxide	0.0005	mg/L	< 0.0005	< 0.0005
Hexachlorobenzene	0.0005	mg/L	< 0.0005	< 0.0005
Methoxychlor	0.002	mg/L	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	110	113
Tetrachloro-m-xylene (surr.)	1	%	90	93
Organophosphorus Pesticides (OP)				
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002
Coumaphos	0.002	mg/L	< 0.002	< 0.002
Demeton (total)	0.004	mg/L	< 0.004	< 0.004
Diazinon	0.002	mg/L	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002
Methyl azinphos	0.002	mg/L	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002
Monocrotophos	0.02	mg/L	< 0.02	< 0.02
Parathion	0.002	mg/L	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002
Profenofos	0.002	mg/L	< 0.002	< 0.002
Prothiofos	0.002	mg/L	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002
Stirophos	0.002	mg/L	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	109	122
Polyaromatic Hydrocarbons (PAH)				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.002	mg/L	< 0.002	< 0.002
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			RB_23113	RB_24113
Sample Matrix			Water	Water
mgt-LabMark Sample No.			S13-Ja14310	S13-Ja14311
Date Sampled			Jan 23, 2013	Jan 24, 2013
Test/Reference	LOR	Unit		
Polyaromatic Hydrocarbons (PAH)				
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH	0.002	mg/L	< 0.002	< 0.002
2-Fluorobiphenyl (surr.)	1	%	102	116
p-Terphenyl-d14 (surr.)	1	%	108	124
Heavy Metals				
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001
Cadmium (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005

Description	Testing Site	Extracted	Holding Time
mgt-LabMark Suite 1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 30, 2013	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jan 30, 2013	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions	Sydney	Jan 30, 2013	7 Day
- Method: LM-LTM-ORG2010			
Organochlorine Pesticides (OC)	Sydney	Jan 30, 2013	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jan 30, 2013	7 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Polyaromatic Hydrocarbons (PAH)	Sydney	Jan 30, 2013	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8 filtered	Sydney	Jan 30, 2013	28 Day
- Method: E020/E030 Filtered Metals in Water & E026 Mercury			

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366732	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
MW1_0.15-0.25	Jan 23, 2013		Soil	S13-Ja14210			X								
MW1_0.4-0.5	Jan 23, 2013		Soil	S13-Ja14211	X	X			X			X	X	X	X
MW1_0.9-1.0	Jan 23, 2013		Soil	S13-Ja14212			X								
MW1_1.9-2.0	Jan 23, 2013		Soil	S13-Ja14213			X								
MW1_2.5-2.7	Jan 23, 2013		Soil	S13-Ja14214	X				X						X
MW2_0.05-0.15	Jan 23, 2013		Soil	S13-Ja14215			X								
MW2_0.4-0.5	Jan 23, 2013		Soil	S13-Ja14216	X	X			X			X	X	X	X
MW2_0.9-1.0	Jan 23, 2013		Soil	S13-Ja14217			X								

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Client Job No.: BANKSTOWN GOLF CLUB ENAURHOD04454AA

Order No.:
Report #: 366732
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: Jan 29, 2013 4:54 PM
Due: Feb 6, 2013
Priority: 5 Day
Contact Name: Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
MW2_1.8-2.0	Jan 23, 2013		Soil	S13-Ja14218			X								
MW2_3.0-3.2	Jan 23, 2013		Soil	S13-Ja14219			X								
MW2_3.6-3.8	Jan 23, 2013		Soil	S13-Ja14220	X				X						X
QC1	Jan 23, 2013		Soil	S13-Ja14221	X				X			X	X	X	X
TB (SET1)	Jan 18, 2013		Soil	S13-Ja14222				X			X				
TS (SET1)	Jan 18, 2013		Soil	S13-Ja14223				X			X				
TSLAB (SET1)	Jan 18, 2013		Soil	S13-Ja14224				X			X				
QC2	Jan 23, 2013		Soil	S13-Ja14225	X				X			X	X	X	X
MW3_0.05-0.15	Jan 23, 2013		Soil	S13-Ja14226			X								
MW3_0.4-0.5	Jan 23, 2013		Soil	S13-Ja14227	X	X			X			X	X	X	X
MW3_1.4-1.7	Jan 23, 2013		Soil	S13-Ja14228	X				X			X	X	X	X

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Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**	
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
MW3_2.1-2.3	Jan 23, 2013		Soil	S13-Ja14229			X								
MW3_2.9-3.1	Jan 23, 2013		Soil	S13-Ja14230			X								
MW3_3.9-4.1	Jan 23, 2013		Soil	S13-Ja14231			X								
MW3_4.6-4.8	Jan 23, 2013		Soil	S13-Ja14232			X								
TP1_0.1-0.2	Jan 24, 2013		Soil	S13-Ja14233			X								
TP1_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14234	X	X			X			X	X	X	X
TP1_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14235	X				X						X
TP2_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14236			X								
TP2_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14237	X	X			X			X	X	X	X
TP2_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14238			X								
TP3_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14239	X	X			X						X

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NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**	
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP3_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14240			X								
TP3_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14241			X								
TP4_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14242			X								
TP4_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14243			X								
TP4_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14244	X	X			X						X
TP5_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14245	X	X			X						X
TP5_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14246			X								
TP5_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14247			X								
TP6_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14248			X								
TP6_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14249	X	X			X			X	X	X	X
TP6_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14250			X								

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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
Due:	Feb 6, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP7_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14251			X								
TP7_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14252			X								
TP7_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14253	X	X			X						X
TP8_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14254			X								
TP8_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14255	X	X			X						X
TP8_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14256			X								
TP9_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14257			X								
TP9_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14258	X	X			X						X
TP9_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14259			X								
TP10_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14260			X								
TP10_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14261			X								

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366732 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP10_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14262	X	X			X						X
TP11_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14263	X	X			X						X
TP11_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14264			X								
TP11_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14265			X								
TP12_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14266	X	X			X						X
TP12_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14267			X								
TP12_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14268			X								
TP13_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14269	X	X			X			X	X	X	X
TP13_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14270	X				X						X

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366732	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP13_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14271			X								
TP14_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14272	X	X			X						X
TP14_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14273			X								
TP14_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14274	X				X						X
TP15_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14275			X								
TP15_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14276	X	X			X						X
TP15_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14277			X								
TP16_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14278			X								
TP16_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14279			X								

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Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366732	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP16_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14280	X				X						X
TP17_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14281			X								
TP17_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14282	X	X			X						X
TP17_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14283			X								
TP18_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14284			X								
TP18_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14285	X	X			X			X	X	X	X
TP18_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14286			X								
TP19_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14287	X	X			X						X
TP19_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14288			X								

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Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366732	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP19_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14289			X								
TP20_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14290			X								
TP20_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14291	X	X			X						X
TP20_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14292			X								
TP21_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14293	X	X			X						X
TP21_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14294			X								
TP21_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14295			X								
TP22_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14296			X								
TP22_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14297	X	X			X						X

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		Phone:	+61 2 9406 1000	**Priority:**	5 Day
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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP22_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14298			X								
TP23_0.05-0.15	Jan 24, 2013		Soil	S13-Ja14299	X	X			X						X
TP23_0.4-0.5	Jan 24, 2013		Soil	S13-Ja14300			X								
TP23_0.9-1.0	Jan 24, 2013		Soil	S13-Ja14301			X								
QC3	Jan 24, 2013		Soil	S13-Ja14302	X				X			X	X	X	X
QC4	Jan 24, 2013		Soil	S13-Ja14303			X								
QC5	Jan 24, 2013		Soil	S13-Ja14304	X				X			X	X	X	X
QC6	Jan 24, 2013		Soil	S13-Ja14305			X								
QC7	Jan 24, 2013		Soil	S13-Ja14306			X								
TB2	Jan 18, 2013		Soil	S13-Ja14307				X			X				
TS2	Jan 18, 2013		Soil	S13-Ja14308				X			X				

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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA		

Received:	Jan 29, 2013 4:54 PM
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Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TSLAB2	Jan 18, 2013		Soil	S13-Ja14309				X			X				
RB_23113	Jan 23, 2013		Water	S13-Ja14310						X		X	X	X	X
RB_24113	Jan 24, 2013		Water	S13-Ja14311						X		X	X	X	X

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Total BTEX	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/L	< 0.005			0.005	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	mg/L	< 0.0005			0.0005	Pass	
4.4'-DDE	mg/L	< 0.0005			0.0005	Pass	
4.4'-DDT	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.0005			0.0005	Pass	
a-Chlordane	mg/L	< 0.0005			0.0005	Pass	
Aldrin	mg/L	< 0.0005			0.0005	Pass	
b-BHC	mg/L	< 0.0005			0.0005	Pass	
d-BHC	mg/L	< 0.0005			0.0005	Pass	
Dieldrin	mg/L	< 0.0005			0.0005	Pass	
Endosulfan I	mg/L	< 0.0005			0.0005	Pass	
Endosulfan II	mg/L	< 0.0005			0.0005	Pass	
Endosulfan sulphate	mg/L	< 0.0005			0.0005	Pass	
Endrin	mg/L	< 0.0005			0.0005	Pass	
Endrin aldehyde	mg/L	< 0.0005			0.0005	Pass	
Endrin ketone	mg/L	< 0.0005			0.0005	Pass	
g-BHC (Lindane)	mg/L	< 0.0005			0.0005	Pass	
g-Chlordane	mg/L	< 0.0005			0.0005	Pass	
Heptachlor	mg/L	< 0.0005			0.0005	Pass	
Heptachlor epoxide	mg/L	< 0.0005			0.0005	Pass	
Hexachlorobenzene	mg/L	< 0.0005			0.0005	Pass	
Methoxychlor	mg/L	< 0.002			0.002	Pass	
Method Blank							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.002			0.002	Pass	
Demeton (total)	mg/L	< 0.004			0.004	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Methyl azinphos	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.02			0.02	Pass	
Parathion	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Profenofos	mg/L	< 0.002			0.002	Pass	
Prothiofos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Stirophos	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/L	< 0.002			0.002	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	82			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	98			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total	%	96			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	%	109			70-130	Pass	
TRH C6-C10	%	90			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	%	90			70-130	Pass	
4.4'-DDE	%	90			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-BHC	%	90			70-130	Pass	
a-Chlordane	%	90			70-130	Pass	
Aldrin	%	90			70-130	Pass	
b-BHC	%	90			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	90			70-130	Pass	
Endosulfan II	%	90			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	90			70-130	Pass	
Endrin aldehyde	%	90			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	90			70-130	Pass	
g-Chlordane	%	90			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	90			70-130	Pass	
Hexachlorobenzene	%	90			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	83			70-130	Pass	
Coumaphos	%	103			70-130	Pass	
Diazinon	%	84			70-130	Pass	
Dichlorvos	%	83			70-130	Pass	
Dimethoate	%	80			70-130	Pass	
Disulfoton	%	85			70-130	Pass	
Ethoprop	%	90			70-130	Pass	
Fenitrothion	%	86			70-130	Pass	
Fensulfothion	%	80			70-130	Pass	
Fenthion	%	83			70-130	Pass	
Methyl azinphos	%	91			70-130	Pass	
Malathion	%	91			70-130	Pass	
Methyl parathion	%	93			70-130	Pass	
Mevinphos	%	91			70-130	Pass	
Parathion	%	82			70-130	Pass	
Phorate	%	87			70-130	Pass	
Profenofos	%	96			70-130	Pass	
Prothiofos	%	87			70-130	Pass	
Ronnel	%	80			70-130	Pass	
Stirophos	%	98			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichloronate	%	84			70-130	Pass	
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	91			70-130	Pass	
Acenaphthylene	%	88			70-130	Pass	
Anthracene	%	98			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	92			70-130	Pass	
Benzo(g.h.i)perylene	%	77			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	80			70-130	Pass	
Fluoranthene	%	96			70-130	Pass	
Fluorene	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	81			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	98			70-130	Pass	
LCS - % Recovery							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Lead (filtered)	%	97			70-130	Pass	
Mercury (filtered)	%	109			70-130	Pass	
Nickel (filtered)	%	100			70-130	Pass	
Arsenic (filtered)	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium (filtered)	%	98			70-130	Pass	
Copper (filtered)	%	96			70-130	Pass	
Zinc (filtered)	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Ja12849	NCP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja12849	NCP	%	93			70-130	Pass	
Toluene	S13-Ja12849	NCP	%	95			70-130	Pass	
Ethylbenzene	S13-Ja12849	NCP	%	93			70-130	Pass	
m&p-Xylenes	S13-Ja12849	NCP	%	94			70-130	Pass	
o-Xylene	S13-Ja12849	NCP	%	95			70-130	Pass	
Xylenes - Total	S13-Ja12849	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja12849	NCP	%	90			70-130	Pass	
TRH C6-C10	S13-Ja12849	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S13-Ja11980	NCP	%	114			70-130	Pass	
Acenaphthylene	S13-Ja11980	NCP	%	98			70-130	Pass	
Anthracene	S13-Ja11980	NCP	%	118			70-130	Pass	
Benz(a)anthracene	S13-Ja11980	NCP	%	104			70-130	Pass	
Benzo(a)pyrene	S13-Ja11980	NCP	%	107			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja11980	NCP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	S13-Ja11980	NCP	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	S13-Ja11980	NCP	%	108			70-130	Pass	
Dibenz(a.h)anthracene	S13-Ja11980	NCP	%	102			70-130	Pass	
Fluoranthene	S13-Ja11980	NCP	%	113			70-130	Pass	
Fluorene	S13-Ja11980	NCP	%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja11980	NCP	%	103			70-130	Pass	
Naphthalene	S13-Ja11980	NCP	%	111			70-130	Pass	
Phenanthrene	S13-Ja11980	NCP	%	114			70-130	Pass	
Pyrene	S13-Ja11980	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered				Result 1					
Lead (filtered)	S13-Ja14054	NCP	%	103			70-130	Pass	
Nickel (filtered)	S13-Ja14054	NCP	%	104			70-130	Pass	
Arsenic (filtered)	S13-Ja14054	NCP	%	103			70-130	Pass	
Cadmium (filtered)	S13-Ja14054	NCP	%	101			70-130	Pass	
Chromium (filtered)	S13-Ja14054	NCP	%	101			70-130	Pass	
Copper (filtered)	S13-Ja14054	NCP	%	100			70-130	Pass	
Zinc (filtered)	S13-Ja14054	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered				Result 1					
Mercury (filtered)	S13-Ja14311	CP	%	111			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Ja12848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S13-Ja12848	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S13-Ja12848	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Total BTEX	S13-Ja12848	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja12848	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
TRH C6-C10	S13-Ja12848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja12848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja11979	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Benzo(g.h.i)perylene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Pyrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Metals M8 filtered				Result 1	Result 2	RPD			
Lead (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S13-Ja13718	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	29	30%	Pass	
Cadmium (filtered)	S13-Ja14052	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S13-Ja14052	NCP	mg/L	< 0.005	< 0.005	10	30%	Pass	

Comments

Asbestos analysed by: ASET, NATA accreditation no. 14484, report reference ASET32202/ 35382 / 1 - 25

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Jean Heng	Client Services
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
James Norford	Senior Analyst-Metal (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET32202/ 35382 / 1 - 25
Your ref : 366732
NATA Accreditation No: 14484

31 January 2013

MGT- Labmark Environmental Pty Ltd
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons
Laboratory & Technical Manager

Dear Robert

Asbestos Identification
This report presents the results of twenty five samples, forwarded by MGT- Labmark Environmental Pty Ltd on 31 January 2013, for analysis for asbestos.

1.Introduction: Twenty five samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method. **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET32202 / 35382 / 1. MW1 - 0.15 - 0.25 - Ja14211.
Approx dimensions 5.6 cm x 5.2 cm x 4.7 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET32202 / 35382 / 2. MW2 - 0.4 - 0.5 - Ja14216.
Approx dimensions 5.7 cm x 5..3 cm x 4.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET32202 / 35382 / 3. MW3 - 0.4 - 0.5 - Ja14227.
Approx dimensions 4.7 cm x 4.5 cm x 3.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 4. ASET32202 / 35382 / 4. TP1 - 0.4 - 0.5 - Ja14234.
Approx dimensions 5.3 cm x 4.6 cm x 3.6 cm
The sample consisted of a mixture of soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET32202 / 35382 / 5. TP2 - 0.4 - 0.5 - Ja14237.
Approx dimensions 4.6 cm x 3.7 cm x 3.3 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 6. ASET32202 / 35382 / 6. TP3 - 0.05 - 0.15 - Ja14239.
Approx dimensions 5.3 cm x 4.7 cm x 4.1 cm
The sample consisted of a mixture of sandy soil, stones, plant matter, fragments of fibre cement* and brick.
Chrysotile* asbestos detected.

Sample No. 7. ASET32202 / 35382 / 7. TP4 - 0.9 - 1.0 - Ja14244.
Approx dimensions 4.6 cm x 3.7 cm x 3.1 cm
The sample consisted of a mixture of sandy clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 8. ASET32202 / 35382 / 8. TP5 - 0.05 - 0.15 - Ja14245.
Approx dimensions 5.4 cm x 5.2 cm x 4.8 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET32202 / 35382 / 9. TP6 - 0.4 - 0.5 - Ja14249.
Approx dimensions 3.7 cm x 3.6 cm x 3.2 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 10. ASET32202 / 35382 / 10. TP7 - 0.9 - 1.0 - Ja14253.
Approx dimensions 4.2 cm x 3.4 cm x 3.1 cm
The sample consisted of a mixture of clayish sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 11. ASET32202 / 35382 / 11. TP8 - 0.4 - 0.5 - Ja14255.
Approx dimensions 4.7 cm x 4.5 cm x 3.8 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 12. ASET32202 / 35382 / 12. TP9 - 0.4 - 0.5 - Ja14258.
Approx dimensions 4.5 cm x 3.4 cm x 3.3 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 13. ASET32202 / 35382 / 13. TP10 - 0.9 - 1.0 - Ja14262.
Approx dimensions 4.1 cm x 3.7 cm x 3.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 14. ASET32202 / 35382 / 14. TP11 - 0.05 - 0.15 - Ja14263.
Approx dimensions 5.6 cm x 5.4 cm x 4.3 cm
The sample consisted of a mixture of sandy clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 15. ASET32202 / 35382 / 15. TP12 - 0.05 - 0.15 - Ja14266.
Approx dimensions 5.3 cm x 5.1 cm x 4.6 cm
The sample consisted of a mixture of sandy clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 16. ASET32202 / 35382 / 16. TP13 - 0.05 - 0.15 - Ja14269.
Approx dimensions 5.6 cm x 5.2 cm x 4.9 cm
The sample consisted of a mixture of sandy clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 17. ASET32202 / 35382 / 17. TP14 - 0.05 - 0.15 - Ja14272.
Approx dimensions 5.3 cm x 5.2 cm x 4.7 cm
The sample consisted of a mixture of sandy clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 18. ASET32202 / 35382 / 18. TP15 - 0.4 - 0.5 - Ja14276.
Approx dimensions 4.2 cm x 3.5 cm x 3.1 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 19. ASET32202 / 35382 / 19. TP17 - 0.4 - 0.5 - Ja14282.
Approx dimensions 4.1 cm x 3.6 cm x 3.2 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 20. ASET32202 / 35382 / 20. TP18 - 0.4 - 0.5 - Ja14285.
Approx dimensions 4.6 cm x 4.3 cm x 3.5 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 21. ASET32202 / 35382 / 21. TP19 - 0.05 - 0.15 - Ja14287.
Approx dimensions 5.4 cm x 5.1 cm x 4.3 cm
The sample consisted of a mixture of soil, stones and plant matter.
No asbestos detected.

Sample No. 22. ASET32202 / 35382 / 22. TP20 - 0.4 - 0.5 - Ja14291.
Approx dimensions 4.2 cm x 3.5 cm x 3.4 cm
The sample consisted of a mixture of clayish sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 23. ASET32202 / 35382 / 23. TP21 - 0.05 - 0.15 - Ja14293.
Approx dimensions 5.7 cm x 5.4 cm x 4.6 cm
The sample consisted of a mixture of soil, stones and plant matter.
No asbestos detected.

Sample No. 24. ASET32202 / 35382 / 24. TP22 - 0.4 - 0.5 - Ja14297.
Approx dimensions 4.3 cm x 3.4 cm x 3.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 25. ASET32202 / 35382 / 25. TP23 - 0.05 - 0.15 - Ja14299.
Approx dimensions 5.6 cm x 5.4 cm x 5.3 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of bitumen and shale.
No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier
Approved Signatory

WORLD RECOGNISED ACCREDITATION

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

*** denotes asbestos in asbestos containing material in bonded form.**

 103466

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG   Mobile: Email: FIONA WONG @coffey.com
Invoices to: " "   Phone: Email: @coffey.com

Project No: GNAUENOO4454AA   Task No: LABORATORY
Project Name: Bankstown Golf club   Laboratory: MGT LABMARK
Sampler's Name: KAT S   Project Manager: FIONA WONG
Special Instructions: PLEASE FORWARD QC1A, QC2A, QC6A

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	MW1-0.15-0.25	23/1/13	–	Soil	Sc / one + BAG	5day	
	MW1-0.4-0.5	↓		↓	+ BAG	↓	
	MW1-0.9-1.0						
	MW1-1.9-2.0						
	MW1-2.5-2.7						
	MW2-0.05-0.15				+ BAG		
	MW2-0.4-0.5				+ BAG		
	MW2-0.9-1.0						
	MW2-1.8-2.0						
	MW2-3.0-3.2						
	MW2-3.6-3.8						
	QC1						
	QC1A						PLEASE FORWARD TO ENVIROLAB
	TB (MGT PREP) SET 1						MGT PREPARED
	TS (MGT PREP) SET 1						MGT PREPARED
	QC2						
	QC2A						PLEASE FORWARD TO ENVIROLAB
	MW3-0.05-0.15	↓		↓	+ BAG	↓	

RELINQUISHED BY		RECEIVED BY	
Name: FIONA WONG	Date: 25/1/2013 →	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT LabMark	Time: 11AM
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

 103467

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: Fiona Wong — Mobile: — Email: Fiona Wong @coffey.com
Invoices to: " " — Phone: — Email: @coffey.com

Project No: GENVBHOD04454AB — Task No: LABORATORY
Project Name: Bankstown Golf club — Laboratory: CHATSWOOD
Sampler's Name: L. SPRUTH — Project Manager: Fiona Wong
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	MW3_0.4-0.5	22/1/13		Soil	Soil jar + BAG	5 day	
	MW3_1.4-1.7	↓		↓	↓	↓	
	MW3_2.1-2.3						
	MW3_2.9-3.1						
	MW3_3.9-4.1						
	MW3_4.6-4.8						
	TP1-0.1-0.2	24/1/12			+ BAG		
	TP1-0.4-0.5						
	TP1-0.9-1.0						
	TP2-0.05-0.15				+ BAG		
	TP2-0.4-0.5						
	TP2-0.9-1.0						
	TP3-0.05-0.15				+ BAG		
	TP3-0.9-1.0						
	TP3-0.4-0.5						
	TP4-0.05-0.15				+ BAG		
	TP4-0.4-0.5						
	TP4-0.9-1.0	↓		↓	↓	↓	

RELINQUISHED BY		RECEIVED BY	
Name: Fiona Wong	Date: 25/1/2013 →	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT Labmark	Time: 11AM
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

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 103468

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG | Mobile: | Email: FIONA.WONG @coffey.com
Invoices to: " " | Phone: | Email: @coffey.com

Project No: ENAUCHOD06454AA | Task No: LABORATORY
Project Name: BANKSTOWN Golf club | Laboratory: MGT LABMARK
Sampler's Name: K. STROM | Project Manager: FIONA WONG
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP5_0.05-0.15	24/1/12		Soil	Soil jar +BAG	5days	
	TP5-0.4-0.5	↓		↓	↓	↓	
	TP5_0.9-1.0						
	TP6-0.05-0.15				+BAG		
	TP6-0.4-0.5						
	TP6-0.9-1.0						
	TP7_0.05-0.15				+BAG		
	TP7-0.4-0.5						
	TP7-0.9-1.0						
	TP8-0.05-0.15				+BAG		
	TP8-0.4-0.5						
	TP8-0.9-1.0						
	TP9-0.05-0.15				+BAG		
	TP9-0.4-0.5						
	TP9-0.9-1.0						
	TP10-0.05-0.15				+BAG		
	TP10-0.4-0.5						
	TP10-0.9-1.0						

RELINQUISHED BY		RECEIVED BY	
Name: FIONA WONG	Date: 25/1/2013 →	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT Labmark	Time: 9 11AM
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

3.5 25/1/13 12-15PM

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103469

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG — Mobile: — Email: fiona.wong @coffey.com
Invoices to: — Phone: — Email: @coffey.com

Project No: GWAVEHC00645AA — Task No: LABORATORY
Project Name: BANKSIA GOLF CLUB — Laboratory: MGT LABMARK
Sampler's Name: IC. SMITH — Project Manager: FIONA WONG
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP11 - 0.05-0.15	24/1/13		Soil	Soil one +BAG	5 days	
	TP11 - 0.4-0.5						
	TP11 - 0.9-1.0						
	TP12 - 0.05+0.15				+BAG		
	TP12 - 0.4-0.5						
	TP12 - 0.9-1.0						
	TP13 - 0.05-0.15				+BAG		
	TP13 - 0.4-0.5						
	TP13 - 0.9-1.0						
	TP14 - 0.05-0.15				+BAG		
	TP14 - 0.4-0.5						
	TP14 - 0.9-1.0						
	TP15 - 0.05-0.15						
	TP15 - 0.4-0.5						
	TP15 - 0.9-1.0						
	TP16 - 0.05-0.15				+BAG		
	TP16 - 0.4-0.5						
	TP16 - 0.9-1.0						

RELINQUISHED BY

Name: FIONA WONG — Date: 25/1/2013
Coffey Environments — Time:
Name: — Date:
Company: — Time:

RECEIVED BY

Name: SUE — Date: 25/1/13
Company: MGT Labmark — Time: 11AM
Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

3.5 25/1/13 12-15pm

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103470

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG Mobile: Email: FIONA.WONG @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: ENVIRO0646AA Task No: LABORATORY
Project Name: BANKSTOWN GOLF CLUB Laboratory: MGT LABMARK
Sampler's Name: K. SMITH Project Manager: FIONA WONG
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP17-0.05-0.15	24/1/13		Soil	Soil ONE + BAG	5 day	
	TP17-0.4-0.5						
	TP17-0.7-1.0						
	TP18-0.05-0.15				+ BAG		
	TP18 0.4-0.5						
	TP18 0.9-1.0						
	TP19-0.05-0.15				+ BAG		
	TP19-0.4-0.5						
	TP19-0.7-1.0						
	TP20-0.05-0.15				+ BAG		
	TP20-0.4-0.5						
	TP20-0.7-1.0						
	TP21-0.05-0.15				+ BAG		
	TP21-0.4-0.5						
	TP21-0.5-0.6						
	TP22-0.05-0.15				+ BAG		
	TP22-0.4-0.5						
	TP22 0.7-0.8						

RELINQUISHED BY	RECEIVED BY	Sample Receipt Advice: (Lab Use Only)
Name: FIONA WONG Date: 25/1/2013 →	Name: SUE Date: 25/1/13	All Samples Recieved in Good Condition ☐
Coffey Environments Time:	Company: MGT Labmark Time: 11AM	All Documentation is In Proper Order ☐
Name: Date: →	Name: Date:	Samples Received Properly Chilled ☐
Company: Time:	Company: Time:	Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

3.5 25/1/13 12:15pm

Issue Date: 24/08/2012

 103471

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG | Mobile: | Email: FIONA.WONG @coffey.com
Invoices to: " " | Phone: | Email: @coffey.com

Project No: GEOTCHWOD04454AA | Task No: LABORATORY
Project Name: BANKSTOWN GOLF CLUB | Laboratory: MGT LABMARK
Sampler's Name: K. SPERM | Project Manager: FIONA WONG
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP23_0.05-0.15	24/1/12		Soil	Soil and BAG	5 days	
	TP23_0.4-0.5	↓		↓	↓	↓	
	TP23_0.9-1.0						
	QC3						
	QC4						
	QC5						
	QC6						
	QC6A						*PLEASE FORWARD TO ENVIROLAB*
	QC7						
	TB 2 (MGT PREPARED)						
	TS 2 (MGT PREPARED)						
	RB_23113	23/1/13		WATER	2V, 1A, 1P		
	RB_24113	24/1/13		WATER	2V, 1A, 1P	↓	

RELINQUISHED BY		RECEIVED BY	
Name: FIONA WONG	Date: 25/1/2013 →	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT Labmark	Time: 11AM
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

3.5 25/1/13 12:15PM

Coffey 5 esties in coolroom.
COC - no analysis.

Enquiries Syd

From: Jean Heng
Sent: Friday, 25 January 2013 11:10 AM
To: Enviro Syd
Subject: FW: ENAURHOD04454AA - Soil Samples

FYI peeps

Regards,
Jean Heng
Client Manager | NSW

eurofins mgt

Eurofins | mgt
Unit F3, 16 Mars Road, Lane Cove West, NSW 2066.
contact | p. +61 2 9900 8400 | f: +61 2 9420 2977
d. +61 2 9900 8460 | m: +61 403 637 214

From: Fiona Wong [mailto:Fiona_Wong@coffey.com]
Sent: Friday, January 25, 2013 10:54 AM
To: Jean Heng
Cc: Katherine Spruth
Subject: ENAURHOD04454AA - Soil Samples

Hi Jean,

Sue will pick up the soil samples for me today but I can't really schedule the samples until we complete the fieldwork today.

I will send you the completed COC on Tuesday. Please could you keep the samples for us over the weekend. I will organise the last batch of samples (which Kat is collecting as we speak) on Tuesday morning.

Any queries please let me know.

Have a good long weekend.

Regards,

FIONA WONG
Associate

Coffey Environments
Level 19, Citadel Tower, 799 Pacific Highway, Chatswood NSW 2067
T +61 2 9406 1000 D +61 2 9406 1213 F +61 2 9406 1004 M + 61 409 367 752
coffey.com

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103466

coffey environments
SPECIALISTS IN ENVIRONMENTAL SOCIAL AND SAFETY PERFORMANCE

Consigning Office: Chatswood
Report Results to: Frank Wong | Mobile: | Email: frank.wong @coffey.com
Invoices to: | Phone: | Email: @coffey.com

Project No: GEOTLCOV24566AA | Task No: Imported
Project Name: [illegible] | Laboratory: MGT Penrith(?)
Sampler's Name: KA S | Project Manager: Frank Wong
Special Instructions: Please forward QC1A, QC2A to [illegible]

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1-TRH, BTEX	M8-Metals	Asbestos	OC/OP/PAH	TRH (C6-C10)	BTEX	NOTES
	MW1_0.15-0.25	24/1/13		Soil	Soil jar, bag	5 day							HOLD
	MW1_0.6-0.6	↓		↓	1 bag	↓	X	X	X	X			
	MW1_0.9-1.0												HOLD
	MW1_1.9-2.0												↓
	MW1_2.5-2.7						X	X					
	MW2_0.05-0.15				1 bag								HOLD
	MW2_0.4-0.5				1 bag		X	X	X	X			
	MW2_0.9-1.0												HOLD
	MW2_1.8-2.0												↓
	MW2_3.6-3.7												
	MW2_3.6-3.8						X	X					
	QC1						X	X		X			
	QC1A						X	X		X			Please forward to Envirolab
	TB (MW1, MW2) SET 1										X	X	MGT provided
	TS (MW1_MW2) SET 1										X	X	MGT provided
	QC2						X	X		X			
	QC2A						X	X		X			Please forward to Envirolab
	MW3_0.05-0.15	↓		↓	1 bag	↓							HOLD

RELINQUISHED BY		RECEIVED BY	
Name: [illegible]	Date: 25/1/2013	Name: SDE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT LabMark	Time: 11AM
Name:	Date:	Name: Mitchell Murphy	Date: 29-1-13
Company:	Time:	Company: MGT LabMark	Time: 4.54 pm

Sample Receipt Advice: (Lab Use Only)
- All Samples Recieved in Good Condition ☑
- All Documentation is in Proper Order ☑
- Samples Received Properly Chilled ☑

Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103467

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: [illegible]
Report Results to: [illegible] Mobile: Email: [illegible] @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: [illegible] Task No: [illegible]
Project Name: [illegible] Laboratory: [illegible]
Sampler's Name: [illegible] Project Manager: [illegible]
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1-TRH, BTEX	M8-METALS	ASBESTOS	OCP/OP/PAH	NOTES
	MW3 12.6-13	23/1/13		Soil	Soil jar + bag	5 day	X	X	X	X	
	MW3 1.6-1.7	↓		↓	↓	↓	X	X		X	
	MW3 2.1-2.3										HOLD
	MW3 2.9-3.1										↓
	MW3 3.9-4.1										↓
	MW3 4.6-4.8										↓
	TP1 0.1-0.2	24/1/13			[illegible]						↓
	TP1 0.4-0.5						X	X	X	X	
	TP1 0.9-1.0						X	X			
	TP2 0.09-0.10				[illegible]						HOLD
	TP2 0.4-0.5						X	X	X	X	
	TP2 0.9-1.0										HOLD
	TP3 0.15-0.25				[illegible]		X	X	X		
	TP3 0.9-1.0										HOLD
	TP5 0.4-0.5										↓
	TP6 0.05-0.10				[illegible]						HOLD
	TP6 0.4-0.5										↓
	TP6 0.9-1.0	↓		↓	↓	↓	X	X	X		

RELINQUISHED BY		RECEIVED BY	
Name: [illegible]	Date: 25/1/2013 →	Name: SUE	Date: 25/1/13
Coffey Environments [signature]	Time:	Company: MGT LabMark	Time: 11am
Name:	Date: →	Name: Mitchell Murphy	Date: 29-1-13
Company:	Time:	Company: MGT LabMark	Time: 4.34pm

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103468

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: [illegible]
Report Results to: [illegible] Mobile: Email: [illegible] @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: [illegible] Task No: [illegible]
Project Name: [illegible]
Laboratory: [illegible]
Sampler's Name: [illegible]
Project Manager: [illegible]
Special Instructions:

Analysis Request Section: B1 - BTEX TRH | M2 - Metals | Asbestos | OC/OP/PCB/PAH

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1 - BTEX TRH	M2 - Metals	Asbestos	OC/OP/PCB/PAH	NOTES
	[illegible]	[illegible]		Soil	Soil [illegible]	5 days	X	X	X		
	[illegible]										HOLD
	[illegible]										
	[illegible]				1 BAG						
	[illegible]						X	X	X	X	
	[illegible]										HOLD
	[illegible]				1 BAG						
	[illegible]										
	[illegible]						X	X	X		
	[illegible]				1 BAG						HOLD
	[illegible]						X	X	X		
	[illegible]										HOLD
	[illegible]				1 BAG						
	[illegible]						X	X	X		
	[illegible]										HOLD
	[illegible]				1 BAG						
	[illegible]										
	[illegible]						X	X	X		

RELINQUISHED BY		RECEIVED BY	
Name: [illegible]	Date: 25/1/2013	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT LABMARK	Time: [illegible]
Name:	Date:	Name: Mitchell Murphy	Date: 29-1-13
Company:	Time:	Company: mgt Labmark	Time: 4:54pm

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103469

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: [illegible]
Report Results to: [illegible] Mobile: Email: [illegible] @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: [illegible] Task No: [illegible]
Project Name: [illegible]
Laboratory: MGT Labmark
Sampler's Name: [illegible]
Project Manager: [illegible]
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1 - TRH, BTEX	M8 - Metals	Asbestos	OCP/OPP/PAH	NOTES
	TP11 0.05-0.15	[illegible]		Soil	[illegible]	[illegible]	X	X	X		
	TP11 0.4-0.5										HOLD ↓
	TP11 0.9-1.0										
	TP12 0.05-0.15				1 BAG		X	X	X		
	TP12 0.4-0.5										HOLD ↓
	TP12 0.9-1.0										
	TP13 0.05-0.15				1 BAG		X	X	X	X	
	TP13 0.4-0.5						X	X			
	TP13 0.9-1.0										HOLD.
	TP14 0.05-0.15				1 BAG		X	X	X		
	TP14 0.4-0.5										HOLD
	TP14 0.9-1.0						X	X			
	TP15 0.05-0.15										HOLD
	TP15 0.4-0.5						X	X	X		
	TP15 0.9-1.0										HOLD
	TP16 0.05-0.15				1 BAG						↓
	TP16 0.4-0.5										
	TP16 0.9-1.0	↓		↓	↓	↓	X	X			

RELINQUISHED BY		RECEIVED BY	
Name: Fiona Wong	Date: 29/1/2013	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT LabMark	Time: 11AM
Name:	Date:	Name: Mitchell Murphy	Date: 29/1/13
Company:	Time:	Company: mgt Labmark	Time: 4:54pm

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

 103470

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: [illegible]
Report Results to: [illegible] Mobile: Email: [illegible] @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: [illegible] Task No: [illegible]
Project Name: [illegible] Laboratory: MGT Labmark
Sampler's Name: [illegible] Project Manager: [illegible]
Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1-TRH, BTEX	M2-METALS	ASBESTOS	OCP/OPP	NOTES
	[illegible]	23/1		Soil	1x Jar 1x bag	Std					HOLD
	[illegible]	↓		↓	↓	↓	X	X	X		
	[illegible]										HOLD
	[illegible]				1 BAG						↓
	[illegible]						X	X	X	X	
	[illegible]										HOLD
	[illegible]				1 BAG		X	X	X		
	[illegible]										HOLD
	[illegible]										↓
	[illegible]				1 BAG						
	[illegible]						X	X	X		
	[illegible]										HOLD
	[illegible]				1 BAG		X	X	X		
	[illegible]										HOLD
	[illegible]										↓
	[illegible]				1 BAG						
	[illegible]						X	X	X		
	[illegible]	↓		↓	↓	↓					HOLD

RELINQUISHED BY		RECEIVED BY	
Name: [illegible]	Date: 23/1/2013 →	Name: SUE	Date: 25/1/13
Coffey Environments	Time:	Company: MGT Labmark	Time: 11AM
Name:	Date: →	Name: Mitchell Murphy	Date: 29-1-13
Company:	Time:	Company: mgt Labmark	Time: 4:54 pm

Sample Receipt Advice: (Lab Use Only)
- All Samples Recieved in Good Condition ☑
- All Documentation is in Proper Order ☑
- Samples Received Properly Chilled ☑

Lab. Ref/Batch No. 366792

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103471

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: [illegible]
Report Results to: [illegible] Mobile: Email: [illegible] @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: [illegible] Task No: [illegible]
Project Name: [illegible] Laboratory: MGT [illegible]
Sampler's Name: [illegible] Project Manager: [illegible]
Special Instructions:

Analysis Request Section: B1 - TRH/BTEX; M8 - METALS; ASBESTOS; OCP/OPP/PAH; C6-C9; BTEX

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1 - TRH/BTEX	M8 - METALS	ASBESTOS	OCP/OPP/PAH	C6-C9 BTEX	NOTES
	[illegible]	26/11		Soil	[illegible]	5 day	X	X	X			
	[illegible]											HOLD
	[illegible]											↓
	QC13						X	X		X		
	QC14											HOLD
	QC15						X	X		X		
	QC16											HOLD
	QC16A						HOLD					Receive [illegible]
	QC17											HOLD
	TB 2 (Lab prepared)									X	X	
	TS 2 (Lab prepared)									X	X	
	RB_23113	26/11		Water	2V, 1G, 1P		X	X	X			
	RB_26113	26/11		Water	2V, 1G, 1P	↓	X	X	X			

RELINQUISHED BY		RECEIVED BY	
Name: [illegible] Date: 28/11/2013	→	Name: SOE	Date: 25/11/13
Coffey Environments Time:		Company: MGT Labmark	Time: 11am
Name: Date:	→	Name: Mikhil Murphy	Date: 29-1-13
Company: Time:		Company: mgt Labmark	Time: 4:34pm

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

From: Fiona Wong [mailto:Fiona_Wong@coffey.com]
Sent: Wednesday, January 30, 2013 5:04 PM
To: Jean Heng
Subject: FW: ENAURHOD04454AA - Bankstown Golf Club

Hi Jean,

As discussed, please could you analyse OCP/OPP/PAH for the following rinsate samples

RB_23113 and RB_24113

Please cancel the asbestos analysis.

Many thanks, Fiona

Ewg # 366732

FIONA WONG
Associate

Coffey Environments
Level 19. Citadel Tower, 799 Pacific Highway. Chatswood NSW 2067
T +61 2 9406 1000 D +61 2 9406 1213 F +61 2 9406 1004 M + 61 409 367 752
coffey.com

From: Fiona Wong
Sent: Tuesday, 29 January 2013 4:54 PM
To: 'Jean Heng'
Subject: RE: ENAURHOD04454AA - Bankstown Golf Club

Hi Jean,

Please find attached the completed COC for the above job.

Much appreciated if you can send me a copy of the sample receipt tomorrow.

Thanks and regards, Fiona

FIONA WONG
Associate

Coffey Environments
Level 19. Citadel Tower. 799 Pacific Highway Chatswood NSW 2067
T +61 2 9406 1000 D +61 2 9406 1213 F +61 2 9406 1004 M + 61 409 367 752
coffey.com

From: Jean Heng [mailto:Jean.Heng@mgtlabmark.com.au]
Sent: Tuesday, 29 January 2013 12:55 PM
To: Fiona Wong
Subject: RE: ENAURHOD04454AA - Bankstown Golf Club

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Coffey Environments Pty Ltd NSW**

Contact name: Fiona Wong
Client job number: BANKSTOWN GOLF CLUB ENAURHOD04454AA
COC number: 103466-70
Turn around time: 5 Day
Date/Time received: Jan 29, 2013 4:54 PM
mgt-LabMark reference: **366732**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by mgt-LabMark Sample Receipt : 3.5 degrees Celsius.

☒ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☒ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☑ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Sample ID discrepancies: COC: TP2_0.05-0.15 JAR: TP2_0.05-0.1 BAG: TP2_; COC: TP10_0.9-1.0 JAR: TP10_1.9-2.0; COC: TP21_0.9-1.0 JAR: TP21_0.5-0.6; COC: TP22_0.9-1.0 JAR: TP22_0.7-0.8 all IDs as per COC unless otherwise stated | Some samples samples received water logged | Selected samples sent to Envirolab as requested | Samples sent to ASET for Asbestos analysis
Samples received by the laboratory after 4pm are deemed to have been received the following working day.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: jean.heng@mgtlabmark.com.au

Results will be delivered electronically via e.mail to Fiona Wong - fiona_wong@coffey.com.

mgt LabMark
ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**366890-S**
Client Reference	BANKSTOWN GOLF CLUB ENAURHOD04454AA
Received Date	Jan 29, 2013

Client Sample ID			**TP24A_0.05-0.15**	**TP25_0.9-1.0**	**TP26_0.4-0.5**	**TP27_0.05-0.15**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
mgt-LabMark Sample No.			**S13-Ja15732**	**S13-Ja15737**	**S13-Ja15739**	**S13-Ja15741**
Date Sampled			**Jan 25, 2013**	**Jan 25, 2013**	**Jan 25, 2013**	**Jan 25, 2013**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	99	108	97	100
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	3.0	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.9	< 5	6.4	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	8.8	7.0	6.2	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	7.1	< 5	< 5	8.4
% Moisture	0.1	%	13	24	17	4.2
Asbestos			see attached	see attached	see attached	see attached

Client Sample ID			TP28_0.4-0.5	TP28_1.9-2.0	TP29_0.4-0.5	TP29_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15745	S13-Ja15747	S13-Ja15750	S13-Ja15751
Date Sampled			Jan 25, 2013	Jan 25, 2013	Jan 25, 2013	Jan 25, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	94	98	96	95
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.2	mg/kg	< 0.2	-	< 0.2	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
a-Chlordane	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
g-Chlordane	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Dibutylchlorendate (surr.)	1	%	86	-	83	-
Tetrachloro-m-xylene (surr.)	1	%	76	-	71	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID			TP28_0.4-0.5	TP28_1.9-2.0	TP29_0.4-0.5	TP29_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15745	S13-Ja15747	S13-Ja15750	S13-Ja15751
Date Sampled			Jan 25, 2013	Jan 25, 2013	Jan 25, 2013	Jan 25, 2013
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Coumaphos	0.5	mg/kg	< 0.5	-	< 0.5	-
Demeton (total)	1	mg/kg	< 1	-	< 1	-
Diazinon	0.5	mg/kg	< 0.5	-	< 0.5	-
Dichlorvos	0.5	mg/kg	< 0.5	-	< 0.5	-
Dimethoate	0.5	mg/kg	< 0.5	-	< 0.5	-
Disulfoton	0.5	mg/kg	< 0.5	-	< 0.5	-
Ethoprop	0.5	mg/kg	< 0.5	-	< 0.5	-
Fenitrothion	0.5	mg/kg	< 0.5	-	< 0.5	-
Fensulfothion	0.5	mg/kg	< 0.5	-	< 0.5	-
Fenthion	0.5	mg/kg	< 0.5	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	< 0.5	-
Malathion	0.5	mg/kg	< 0.5	-	< 0.5	-
Methyl parathion	0.5	mg/kg	< 0.5	-	< 0.5	-
Mevinphos	0.5	mg/kg	< 0.5	-	< 0.5	-
Monocrotophos	10	mg/kg	< 10	-	< 10	-
Parathion	0.5	mg/kg	< 0.5	-	< 0.5	-
Phorate	0.5	mg/kg	< 0.5	-	< 0.5	-
Profenofos	0.5	mg/kg	< 0.5	-	< 0.5	-
Prothiofos	0.5	mg/kg	< 0.5	-	< 0.5	-
Ronnel	0.5	mg/kg	< 0.5	-	< 0.5	-
Stirophos	0.5	mg/kg	< 0.5	-	< 0.5	-
Trichloronate	0.5	mg/kg	< 0.5	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	104	-	98	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	< 1	-	< 1	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	1	mg/kg	< 1	-	< 1	-
2-Fluorobiphenyl (surr.)	1	%	93	-	92	-
p-Terphenyl-d14 (surr.)	1	%	92	-	88	-
Heavy Metals						
Arsenic	2	mg/kg	2.2	< 2	4.4	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.4	8.2	< 5	10
Copper	5	mg/kg	33	< 5	31	< 5
Lead	5	mg/kg	29	8.7	27	11
Mercury	0.05	mg/kg	0.09	< 0.05	< 0.05	< 0.05

Client Sample ID			TP28_0.4-0.5	TP28_1.9-2.0	TP29_0.4-0.5	TP29_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15745	S13-Ja15747	S13-Ja15750	S13-Ja15751
Date Sampled			Jan 25, 2013	Jan 25, 2013	Jan 25, 2013	Jan 25, 2013
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	15	< 5	7.9	< 5
Zinc	5	mg/kg	79	< 5	53	21
% Moisture	0.1	%	18	19	17	28
Asbestos			see attached	-	see attached	-

Client Sample ID			TP30_0.4-0.5	TP30_0.9-1.0	TP31_0.05-0.15	TP32_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15755	S13-Ja15756	S13-Ja15758	S13-Ja15763
Date Sampled			Jan 25, 2013	Jan 25, 2013	Jan 25, 2013	Jan 25, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	10	mg/kg	< 10	< 10	< 10	< 10
TRH C10-C14	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36	100	mg/kg	< 100	< 100	< 100	< 100
TRH C10-36 (Total)	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	1	mg/kg	< 1	< 1	< 1	< 1
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
4-Bromofluorobenzene (surr.)	1	%	94	101	84	97
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides (OC)						
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.2	mg/kg	-	-	< 0.2	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
a-Chlordane	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-

Client Sample ID			TP30_0.4-0.5	TP30_0.9-1.0	TP31_0.05-0.15	TP32_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15755	S13-Ja15756	S13-Ja15758	S13-Ja15763
Date Sampled			Jan 25, 2013	Jan 25, 2013	Jan 25, 2013	Jan 25, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides (OC)						
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
g-Chlordane	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Dibutylchlorendate (surr.)	1	%	-	-	74	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	70	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	102	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b)fluoranthene & Benzo(k)fluoranthene	1	mg/kg	-	-	< 1	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			TP30_0.4-0.5	TP30_0.9-1.0	TP31_0.05-0.15	TP32_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15755	S13-Ja15756	S13-Ja15758	S13-Ja15763
Date Sampled			Jan 25, 2013	Jan 25, 2013	Jan 25, 2013	Jan 25, 2013
Test/Reference	LOR	Unit				
Polyaromatic Hydrocarbons (PAH)						
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH	1	mg/kg	-	-	< 1	-
2-Fluorobiphenyl (surr.)	1	%	-	-	94	-
p-Terphenyl-d14 (surr.)	1	%	-	-	91	-
Heavy Metals						
Arsenic	2	mg/kg	4.4	4.4	2.3	5.0
Cadmium	0.4	mg/kg	2.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	6.2	< 5	7.8
Copper	5	mg/kg	26	7.2	< 5	12
Lead	5	mg/kg	26	17	11	14
Mercury	0.05	mg/kg	0.22	0.10	0.18	< 0.05
Nickel	5	mg/kg	11	< 5	< 5	< 5
Zinc	5	mg/kg	66	25	14	7.1
% Moisture	0.1	%	17	16	26	18
Asbestos			see attached	-	see attached	-

Client Sample ID			TP33_0.4-0.5	TB	TS
Sample Matrix			Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15765	S13-Ja15771	S13-Ja15772
Date Sampled			Jan 25, 2013	Jan 18, 2013	Jan 18, 2013
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	10	mg/kg	< 10	< 10	77%
TRH C10-C14	50	mg/kg	< 50	-	-
TRH C15-C28	100	mg/kg	< 100	-	-
TRH C29-C36	100	mg/kg	< 100	-	-
TRH C10-36 (Total)	100	mg/kg	< 100	-	-
BTEX					
Benzene	0.5	mg/kg	< 0.5	< 0.5	71%
Toluene	0.5	mg/kg	< 0.5	< 0.5	76%
Ethylbenzene	0.5	mg/kg	< 0.5	< 0.5	80%
m&p-Xylenes	1	mg/kg	< 1	< 1	80%
o-Xylene	0.5	mg/kg	< 0.5	< 0.5	80%
Xylenes - Total	1.5	mg/kg	< 1.5	< 1.5	80%
Total BTEX	1.5	mg/kg	< 1.5	< 1.5	78%
4-Bromofluorobenzene (surr.)	1	%	104	95	104
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *					
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-

Client Sample ID			TP33_0.4-0.5	TB	TS
Sample Matrix			Soil	Soil	Soil
mgt-LabMark Sample No.			S13-Ja15765	S13-Ja15771	S13-Ja15772
Date Sampled			Jan 25, 2013	Jan 18, 2013	Jan 18, 2013
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *					
TRH >C10-C16	50	mg/kg	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-
Heavy Metals					
Arsenic	2	mg/kg	12	-	-
Cadmium	0.4	mg/kg	< 0.4	-	-
Chromium	5	mg/kg	13	-	-
Copper	5	mg/kg	20	-	-
Lead	5	mg/kg	30	-	-
Mercury	0.05	mg/kg	< 0.05	-	-
Nickel	5	mg/kg	< 5	-	-
Zinc	5	mg/kg	17	-	-
% Moisture	0.1	%	19	-	-
Asbestos			see attached	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
mgt-LabMark Suite 1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 01, 2013	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jan 30, 2013	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions	Sydney	Feb 01, 2013	14 Day
- Method: LM-LTM-ORG2010			
Organochlorine Pesticides (OC)	Sydney	Feb 01, 2013	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Feb 01, 2013	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Polyaromatic Hydrocarbons (PAH)	Sydney	Feb 01, 2013	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jan 31, 2013	28 Day
- Method: E022 Acid Extractable metals in Soils & E026 Mercury			
% Moisture	Sydney	Jan 30, 2013	28 Day
- Method: E005 Moisture Content			

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366890	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
TP24_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15729			X								
TP24_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15730			X								
TP24_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15731			X								
TP24A_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15732	X	X			X						X
TP24A_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15733			X								
TP24A_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15734			X								
TP25_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15735			X								
TP25_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15736			X								

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366890	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP25_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15737	X	X			X						X
TP26_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15738			X								
TP26_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15739	X	X			X						X
TP26_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15740			X								
TP27_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15741	X	X			X						X
TP27_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15742			X								
TP27_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15743			X								
TP28_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15744			X								
TP28_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15745	X	X			X			X	X	X	X

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366890 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP28_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15746			X								
TP28_1.9-2.0	Jan 25, 2013		Soil	S13-Ja15747	X				X						X
TP28_2.4-2.5	Jan 25, 2013		Soil	S13-Ja15748			X								
TP29_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15749			X								
TP29_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15750	X	X			X			X	X	X	X
TP29_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15751	X				X						X
TP29_1.9-2.4	Jan 25, 2013		Soil	S13-Ja15752			X								
TP29_2.4-2.5	Jan 25, 2013		Soil	S13-Ja15753			X								
TP30_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15754			X								
TP30_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15755	X	X			X						X

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Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366890	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP30_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15756	X				X						X
TP30_1.9-2.0	Jan 25, 2013		Soil	S13-Ja15757			X								
TP31_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15758	X	X			X			X	X	X	X
TP31_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15759			X								
TP31_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15760			X								
TP32_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15761			X								
TP32_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15762			X								
TP32_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15763	X				X						X
TP33_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15764			X								

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
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Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Client Job No.: BANKSTOWN GOLF CLUB ENAURHOD04454AA

Order No.:
Report #: 366890
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: Jan 29, 2013 4:54 PM
Due: Feb 6, 2013
Priority: 5 Day
Contact Name: Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP33_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15765	X	X			X						X
TP33_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15766			X								
QC8	Jan 25, 2013		Soil	S13-Ja15767			X								
QC9	Jan 25, 2013		Soil	S13-Ja15768			X								
QC10	Jan 25, 2013		Soil	S13-Ja15769			X								
QC11	Jan 25, 2013		Soil	S13-Ja15770			X								
TB	Jan 18, 2013		Soil	S13-Ja15771				X			X				
TS	Jan 18, 2013		Soil	S13-Ja15772				X			X				
RB_250113	Jan 25, 2013		Water	S13-Ja15773						X		X	X	X	X
TSLAB	Jan 18, 2013		Soil	S13-Ja15774				X			X				
BAG A	Jan 25, 2013		Soil	S13-Ja15870			X								

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Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366890 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
BAG B	Jan 25, 2013		Soil	S13-Ja15871			X								

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/kg	< 10			10	Pass	
TRH C10-C14	mg/kg	< 50			50	Pass	
TRH C15-C28	mg/kg	< 100			100	Pass	
TRH C29-C36	mg/kg	< 100			100	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 1			1	Pass	
o-Xylene	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 1.5			1.5	Pass	
Total BTEX	mg/kg	< 1.5			1.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.2			0.2	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
a-Chlordane	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
g-Chlordane	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/kg	< 1			1	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	109			70-130	Pass	
TRH C10-C14	%	86			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	93			70-130	Pass	
Toluene	%	93			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	%	84			70-130	Pass	
TRH C6-C10	%	109			70-130	Pass	
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	%	95			70-130	Pass	
4.4'-DDE	%	95			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-BHC	%	95			70-130	Pass	
a-Chlordane	%	90			70-130	Pass	
Aldrin	%	95			70-130	Pass	
b-BHC	%	90			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	95			70-130	Pass	
Endosulfan II	%	90			70-130	Pass	
Endosulfan sulphate	%	95			70-130	Pass	
Endrin	%	95			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	95			70-130	Pass	
g-BHC (Lindane)	%	95			70-130	Pass	
g-Chlordane	%	90			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	100			70-130	Pass	
Methoxychlor	%	90			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	120			70-130	Pass	
Coumaphos	%	113			70-130	Pass	
Diazinon	%	105			70-130	Pass	
Dichlorvos	%	95			70-130	Pass	
Dimethoate	%	116			70-130	Pass	
Disulfoton	%	99			70-130	Pass	
Ethoprop	%	115			70-130	Pass	
Fenitrothion	%	101			70-130	Pass	
Fensulfothion	%	125			70-130	Pass	
Fenthion	%	124			70-130	Pass	
Methyl azinphos	%	107			70-130	Pass	
Malathion	%	125			70-130	Pass	
Methyl parathion	%	119			70-130	Pass	
Mevinphos	%	112			70-130	Pass	
Monocrotophos	%	114			70-130	Pass	
Parathion	%	123			70-130	Pass	
Phorate	%	116			70-130	Pass	
Profenofos	%	122			70-130	Pass	
Prothiofos	%	125			70-130	Pass	
Ronnel	%	114			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Stirophos	%	114			70-130	Pass	
Trichloronate	%	127			70-130	Pass	
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	97			70-130	Pass	
Acenaphthylene	%	91			70-130	Pass	
Anthracene	%	91			70-130	Pass	
Benz(a)anthracene	%	85			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	89			70-130	Pass	
Chrysene	%	105			70-130	Pass	
Dibenz(a.h)anthracene	%	87			70-130	Pass	
Fluoranthene	%	90			70-130	Pass	
Fluorene	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	90			70-130	Pass	
Pyrene	%	87			70-130	Pass	
LCS - % Recovery							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	%	79			70-130	Pass	
Cadmium	%	81			70-130	Pass	
Chromium	%	80			70-130	Pass	
Copper	%	78			70-130	Pass	
Lead	%	78			70-130	Pass	
Mercury	%	2.1			70-130	Fail	
Nickel	%	80			70-130	Pass	
Zinc	%	86			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Ja15732	CP	%	93			70-130	Pass	
TRH C10-C14	S13-Ja15732	CP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja15732	CP	%	97			70-130	Pass	
Toluene	S13-Ja15732	CP	%	100			70-130	Pass	
Ethylbenzene	S13-Ja15732	CP	%	102			70-130	Pass	
m&p-Xylenes	S13-Ja15732	CP	%	102			70-130	Pass	
o-Xylene	S13-Ja15732	CP	%	102			70-130	Pass	
Xylenes - Total	S13-Ja15732	CP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja15732	CP	%	97			70-130	Pass	
TRH C6-C10	S13-Ja15732	CP	%	92			70-130	Pass	
TRH >C10-C16	S13-Ja15732	CP	%	93			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Ja15732	CP	%	75			70-130	Pass	
Cadmium	S13-Ja15732	CP	%	78			70-130	Pass	
Chromium	S13-Ja15732	CP	%	75			70-130	Pass	
Copper	S13-Ja15732	CP	%	82			70-130	Pass	
Lead	S13-Ja15732	CP	%	76			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	S13-Ja15732	CP	%	111			70-130	Pass	
Nickel	S13-Ja15732	CP	%	84			70-130	Pass	
Zinc	S13-Ja15732	CP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Ja15758	CP	%	93			70-130	Pass	
TRH C10-C14	S13-Ja15758	CP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja15758	CP	%	96			70-130	Pass	
Toluene	S13-Ja15758	CP	%	97			70-130	Pass	
Ethylbenzene	S13-Ja15758	CP	%	100			70-130	Pass	
m&p-Xylenes	S13-Ja15758	CP	%	100			70-130	Pass	
o-Xylene	S13-Ja15758	CP	%	99			70-130	Pass	
Xylenes - Total	S13-Ja15758	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja15758	CP	%	88			70-130	Pass	
TRH C6-C10	S13-Ja15758	CP	%	93			70-130	Pass	
TRH >C10-C16	S13-Ja15758	CP	%	93			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S13-Ja15758	CP	%	122			70-130	Pass	
Coumaphos	S13-Ja15758	CP	%	128			70-130	Pass	
Diazinon	S13-Ja15758	CP	%	110			70-130	Pass	
Dichlorvos	S13-Ja15758	CP	%	103			70-130	Pass	
Dimethoate	S13-Ja15758	CP	%	117			70-130	Pass	
Disulfoton	S13-Ja15758	CP	%	90			70-130	Pass	
Ethoprop	S13-Ja15758	CP	%	120			70-130	Pass	
Fenitrothion	S13-Ja15758	CP	%	111			70-130	Pass	
Fensulfothion	S13-Ja15758	CP	%	114			70-130	Pass	
Fenthion	S13-Ja15758	CP	%	122			70-130	Pass	
Methyl azinphos	S13-Ja15758	CP	%	120			70-130	Pass	
Malathion	S13-Ja15758	CP	%	113			70-130	Pass	
Methyl parathion	S13-Ja15758	CP	%	122			70-130	Pass	
Mevinphos	S13-Ja15758	CP	%	129			70-130	Pass	
Monocrotophos	S13-Ja15758	CP	%	118			70-130	Pass	
Parathion	S13-Ja15758	CP	%	128			70-130	Pass	
Phorate	S13-Ja15758	CP	%	115			70-130	Pass	
Profenofos	S13-Ja15758	CP	%	126			70-130	Pass	
Prothiofos	S13-Ja15758	CP	%	128			70-130	Pass	
Ronnel	S13-Ja15758	CP	%	114			70-130	Pass	
Stirophos	S13-Ja15758	CP	%	121			70-130	Pass	
Trichloronate	S13-Ja15758	CP	%	128			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S13-Ja15758	CP	%	89			70-130	Pass	
Acenaphthylene	S13-Ja15758	CP	%	85			70-130	Pass	
Anthracene	S13-Ja15758	CP	%	81			70-130	Pass	
Benz(a)anthracene	S13-Ja15758	CP	%	82			70-130	Pass	
Benzo(a)pyrene	S13-Ja15758	CP	%	88			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja15758	CP	%	91			70-130	Pass	
Benzo(g.h.i)perylene	S13-Ja15758	CP	%	85			70-130	Pass	
Chrysene	S13-Ja15758	CP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	S13-Ja15758	CP	%	83			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	S13-Ja15758	CP	%	86			70-130	Pass	
Fluorene	S13-Ja15758	CP	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja15758	CP	%	84			70-130	Pass	
Naphthalene	S13-Ja15758	CP	%	90			70-130	Pass	
Phenanthrene	S13-Ja15758	CP	%	84			70-130	Pass	
Pyrene	S13-Ja15758	CP	%	84			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Ja15758	CP	%	73			70-130	Pass	
Cadmium	S13-Ja15758	CP	%	89			70-130	Pass	
Chromium	S13-Ja15758	CP	%	90			70-130	Pass	
Copper	S13-Ja15758	CP	%	81			70-130	Pass	
Lead	S13-Ja15758	CP	%	91			70-130	Pass	
Mercury	S13-Ja15758	CP	%	104			70-130	Pass	
Nickel	S13-Ja15758	CP	%	88			70-130	Pass	
Zinc	S13-Ja15758	CP	%	71			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Ja15732	CP	mg/kg	< 10	< 10	<1	30%	Pass	
TRH C10-C14	S13-Ja15732	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C15-C28	S13-Ja15732	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH C29-C36	S13-Ja15732	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja15732	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S13-Ja15732	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S13-Ja15732	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S13-Ja15732	CP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S13-Ja15732	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total	S13-Ja15732	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S13-Ja15732	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja15732	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S13-Ja15732	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja15732	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S13-Ja15732	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S13-Ja15732	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S13-Ja15732	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S13-Ja15732	CP	mg/kg	3.0	< 2	100	30%	Fail	Q15
Cadmium	S13-Ja15732	CP	mg/kg	< 0.4	< 0.4	200	30%	Fail	Q16
Chromium	S13-Ja15732	CP	mg/kg	9.9	9.4	5.0	30%	Pass	
Copper	S13-Ja15732	CP	mg/kg	< 5	< 5	11	30%	Pass	
Lead	S13-Ja15732	CP	mg/kg	8.8	6.2	15	30%	Pass	
Mercury	S13-Ja15732	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S13-Ja15732	CP	mg/kg	< 5	< 5	190	30%	Fail	Q15
Zinc	S13-Ja15732	CP	mg/kg	7.1	< 5	52	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Ja15758	CP	mg/kg	< 10	< 10	<1	30%	Pass	
TRH C10-C14	S13-Ja15758	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C15-C28	S13-Ja15758	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C29-C36	S13-Ja15758	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S13-Ja15758	CP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total	S13-Ja15758	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S13-Ja15758	CP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S13-Ja15758	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja15758	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S13-Ja15758	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S13-Ja15758	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S13-Ja15758	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S13-Ja15758	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja15758	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Benzo(g.h.i)perylene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Fluorene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S13-Ja15758	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S13-Ja15758	CP	mg/kg	2.3	< 2	74	30%	Fail	Q15
Cadmium	S13-Ja15758	CP	mg/kg	< 0.4	< 0.4	200	30%	Fail	Q15
Chromium	S13-Ja15758	CP	mg/kg	< 5	6.6	53	30%	Fail	Q15
Copper	S13-Ja15758	CP	mg/kg	< 5	< 5	3.0	30%	Pass	
Lead	S13-Ja15758	CP	mg/kg	11	8.8	140	30%	Fail	Q15
Mercury	S13-Ja15758	CP	mg/kg	0.18	0.12	44	30%	Fail	Q15
Nickel	S13-Ja15758	CP	mg/kg	< 5	< 5	190	30%	Fail	Q15
Zinc	S13-Ja15758	CP	mg/kg	14	11	22	30%	Pass	

Comments

Asbestos analysed by: ASET, NATA accreditation no. 14484, report reference ASET32234/ 35414 / 1 - 9

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes mgt-LabMark's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
Q16	The surrogate was not added. Insufficient sample remains to perform re-analysis. Acceptance criteria were met for all other QC.

Authorised By

Jean Heng	Client Services
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
James Norford	Senior Analyst-Metal (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

mgt LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**366890-W**
Client Reference	BANKSTOWN GOLF CLUB ENAURHOD04454AA
Received Date	Jan 29, 2013

Client Sample ID			**RB_250113**
Sample Matrix			**Water**
mgt-LabMark Sample No.			**S13-Ja15773**
Date Sampled			**Jan 25, 2013**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
Total BTEX	0.01	mg/L	< 0.01
4-Bromofluorobenzene (surr.)	1	%	84
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *			
Naphthalene[N02]	0.005	mg/L	< 0.005
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	0.1
TRH >C34-C40	0.1	mg/L	< 0.1
Organochlorine Pesticides (OC)			
4.4'-DDD	0.0005	mg/L	< 0.0005
4.4'-DDE	0.0005	mg/L	< 0.0005
4.4'-DDT	0.002	mg/L	< 0.002
a-BHC	0.0005	mg/L	< 0.0005
a-Chlordane	0.0005	mg/L	< 0.0005
Aldrin	0.0005	mg/L	< 0.0005
b-BHC	0.0005	mg/L	< 0.0005
d-BHC	0.0005	mg/L	< 0.0005
Dieldrin	0.0005	mg/L	< 0.0005
Endosulfan I	0.0005	mg/L	< 0.0005
Endosulfan II	0.0005	mg/L	< 0.0005
Endosulfan sulphate	0.0005	mg/L	< 0.0005
Endrin	0.0005	mg/L	< 0.0005
Endrin aldehyde	0.0005	mg/L	< 0.0005

Client Sample ID			RB_250113
Sample Matrix			Water
mgt-LabMark Sample No.			S13-Ja15773
Date Sampled			Jan 25, 2013
Test/Reference	LOR	Unit	
Organochlorine Pesticides (OC)			
Endrin ketone	0.0005	mg/L	< 0.0005
g-BHC (Lindane)	0.0005	mg/L	< 0.0005
g-Chlordane	0.0005	mg/L	< 0.0005
Heptachlor	0.0005	mg/L	< 0.0005
Heptachlor epoxide	0.0005	mg/L	< 0.0005
Hexachlorobenzene	0.0005	mg/L	< 0.0005
Methoxychlor	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	112
Tetrachloro-m-xylene (surr.)	1	%	91
Organophosphorus Pesticides (OP)			
Chlorpyrifos	0.002	mg/L	< 0.002
Coumaphos	0.002	mg/L	< 0.002
Demeton (total)	0.004	mg/L	< 0.004
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Methyl azinphos	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.02	mg/L	< 0.02
Parathion	0.002	mg/L	< 0.002
Phorate	0.002	mg/L	< 0.002
Profenofos	0.002	mg/L	< 0.002
Prothiofos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Stirophos	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	127
Polyaromatic Hydrocarbons (PAH)			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.002	mg/L	< 0.002
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001

Client Sample ID			RB_250113
Sample Matrix			Water
mgt-LabMark Sample No.			S13-Ja15773
Date Sampled			Jan 25, 2013
Test/Reference	LOR	Unit	
Polyaromatic Hydrocarbons (PAH)			
Pyrene	0.001	mg/L	< 0.001
Total PAH	0.002	mg/L	< 0.002
2-Fluorobiphenyl (surr.)	1	%	101
p-Terphenyl-d14 (surr.)	1	%	108
Heavy Metals			
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0001	mg/L	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.005	mg/L	0.010

Description	Testing Site	Extracted	Holding Time
mgt-LabMark Suite 1			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 30, 2013	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jan 30, 2013	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions	Sydney	Jan 30, 2013	7 Day
- Method: LM-LTM-ORG2010			
Organochlorine Pesticides (OC)	Sydney	Jan 30, 2013	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jan 30, 2013	7 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Polyaromatic Hydrocarbons (PAH)	Sydney	Jan 30, 2013	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8 filtered	Sydney	Jan 31, 2013	28 Day
- Method: E020/E030 Filtered Metals in Water & E026 Mercury			

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Jan 29, 2013 4:54 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	366890	**Due:**	Feb 6, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
TP24_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15729			X								
TP24_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15730			X								
TP24_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15731			X								
TP24A_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15732	X	X			X						X
TP24A_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15733			X								
TP24A_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15734			X								
TP25_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15735			X								
TP25_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15736			X								

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mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP25_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15737	X	X			X						X
TP26_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15738			X								
TP26_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15739	X	X			X						X
TP26_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15740			X								
TP27_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15741	X	X			X						X
TP27_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15742			X								
TP27_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15743			X								
TP28_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15744			X								
TP28_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15745	X	X			X			X	X	X	X

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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP28_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15746			X								
TP28_1.9-2.0	Jan 25, 2013		Soil	S13-Ja15747	X				X						X
TP28_2.4-2.5	Jan 25, 2013		Soil	S13-Ja15748			X								
TP29_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15749			X								
TP29_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15750	X	X			X			X	X	X	X
TP29_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15751	X				X						X
TP29_1.9-2.4	Jan 25, 2013		Soil	S13-Ja15752			X								
TP29_2.4-2.5	Jan 25, 2013		Soil	S13-Ja15753			X								
TP30_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15754			X								
TP30_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15755	X	X			X						X

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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP30_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15756	X				X						X
TP30_1.9-2.0	Jan 25, 2013		Soil	S13-Ja15757			X								
TP31_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15758	X	X			X			X	X	X	X
TP31_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15759			X								
TP31_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15760			X								
TP32_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15761			X								
TP32_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15762			X								
TP32_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15763	X				X						X
TP33_0.05-0.15	Jan 25, 2013		Soil	S13-Ja15764			X								

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Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
TP33_0.4-0.5	Jan 25, 2013		Soil	S13-Ja15765	X	X			X						X
TP33_0.9-1.0	Jan 25, 2013		Soil	S13-Ja15766			X								
QC8	Jan 25, 2013		Soil	S13-Ja15767			X								
QC9	Jan 25, 2013		Soil	S13-Ja15768			X								
QC10	Jan 25, 2013		Soil	S13-Ja15769			X								
QC11	Jan 25, 2013		Soil	S13-Ja15770			X								
TB	Jan 18, 2013		Soil	S13-Ja15771				X			X				
TS	Jan 18, 2013		Soil	S13-Ja15772				X			X				
RB_250113	Jan 25, 2013		Water	S13-Ja15773						X		X	X	X	X
TSLAB	Jan 18, 2013		Soil	S13-Ja15774				X			X				
BAG A	Jan 25, 2013		Soil	S13-Ja15870			X								

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Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	366890 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 6, 2013 5 Day Fiona Wong
Client Job No.:	BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos	HOLD	TRH C6-C9	Metals M8	Metals M8 filtered	BTEX	Organochlorine Pesticides (OC)	Organophosphorus Pesticides (OP)	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 1
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory						X									
BAG B	Jan 25, 2013		Soil	S13-Ja15871			X								

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Total BTEX	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/L	< 0.005			0.005	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	mg/L	< 0.0005			0.0005	Pass	
4.4'-DDE	mg/L	< 0.0005			0.0005	Pass	
4.4'-DDT	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.0005			0.0005	Pass	
a-Chlordane	mg/L	< 0.0005			0.0005	Pass	
Aldrin	mg/L	< 0.0005			0.0005	Pass	
b-BHC	mg/L	< 0.0005			0.0005	Pass	
d-BHC	mg/L	< 0.0005			0.0005	Pass	
Dieldrin	mg/L	< 0.0005			0.0005	Pass	
Endosulfan I	mg/L	< 0.0005			0.0005	Pass	
Endosulfan II	mg/L	< 0.0005			0.0005	Pass	
Endosulfan sulphate	mg/L	< 0.0005			0.0005	Pass	
Endrin	mg/L	< 0.0005			0.0005	Pass	
Endrin aldehyde	mg/L	< 0.0005			0.0005	Pass	
Endrin ketone	mg/L	< 0.0005			0.0005	Pass	
g-BHC (Lindane)	mg/L	< 0.0005			0.0005	Pass	
g-Chlordane	mg/L	< 0.0005			0.0005	Pass	
Heptachlor	mg/L	< 0.0005			0.0005	Pass	
Heptachlor epoxide	mg/L	< 0.0005			0.0005	Pass	
Hexachlorobenzene	mg/L	< 0.0005			0.0005	Pass	
Methoxychlor	mg/L	< 0.002			0.002	Pass	
Method Blank							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.002			0.002	Pass	
Demeton (total)	mg/L	< 0.004			0.004	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Methyl azinphos	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.02			0.02	Pass	
Parathion	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Profenofos	mg/L	< 0.002			0.002	Pass	
Prothiofos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Stirophos	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/L	< 0.002			0.002	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	82			70-130	Pass	
TRH C10-C14	%	97			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	98			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total	%	96			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	%	109			70-130	Pass	
TRH C6-C10	%	90			70-130	Pass	
TRH >C10-C16	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides (OC) E013 Organochlorine Pesticides (OC)							
4.4'-DDD	%	90			70-130	Pass	
4.4'-DDE	%	90			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-BHC	%	90			70-130	Pass	
a-Chlordane	%	90			70-130	Pass	
Aldrin	%	90			70-130	Pass	
b-BHC	%	90			70-130	Pass	
d-BHC	%	90			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	90			70-130	Pass	
Endosulfan II	%	90			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	90			70-130	Pass	
Endrin aldehyde	%	90			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	90			70-130	Pass	
g-Chlordane	%	90			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	90			70-130	Pass	
Hexachlorobenzene	%	90			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP) E014 Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	83			70-130	Pass	
Coumaphos	%	103			70-130	Pass	
Diazinon	%	84			70-130	Pass	
Dichlorvos	%	83			70-130	Pass	
Dimethoate	%	80			70-130	Pass	
Disulfoton	%	85			70-130	Pass	
Ethoprop	%	90			70-130	Pass	
Fenitrothion	%	86			70-130	Pass	
Fensulfothion	%	80			70-130	Pass	
Fenthion	%	83			70-130	Pass	
Methyl azinphos	%	91			70-130	Pass	
Malathion	%	91			70-130	Pass	
Methyl parathion	%	93			70-130	Pass	
Mevinphos	%	91			70-130	Pass	
Parathion	%	82			70-130	Pass	
Phorate	%	87			70-130	Pass	
Profenofos	%	96			70-130	Pass	
Prothiofos	%	87			70-130	Pass	
Ronnel	%	80			70-130	Pass	
Stirophos	%	98			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichloronate	%	84			70-130	Pass	
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	91			70-130	Pass	
Acenaphthylene	%	88			70-130	Pass	
Anthracene	%	98			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	92			70-130	Pass	
Benzo(g.h.i)perylene	%	77			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	80			70-130	Pass	
Fluoranthene	%	96			70-130	Pass	
Fluorene	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	81			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	98			70-130	Pass	
LCS - % Recovery							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Lead (filtered)	%	97			70-130	Pass	
Mercury (filtered)	%	94			70-130	Pass	
Nickel (filtered)	%	100			70-130	Pass	
Arsenic (filtered)	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium (filtered)	%	98			70-130	Pass	
Copper (filtered)	%	96			70-130	Pass	
Zinc (filtered)	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Ja12849	NCP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Ja12849	NCP	%	93			70-130	Pass	
Toluene	S13-Ja12849	NCP	%	95			70-130	Pass	
Ethylbenzene	S13-Ja12849	NCP	%	93			70-130	Pass	
m&p-Xylenes	S13-Ja12849	NCP	%	94			70-130	Pass	
o-Xylene	S13-Ja12849	NCP	%	95			70-130	Pass	
Xylenes - Total	S13-Ja12849	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Ja12849	NCP	%	90			70-130	Pass	
TRH C6-C10	S13-Ja12849	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S13-Ja11980	NCP	%	114			70-130	Pass	
Acenaphthylene	S13-Ja11980	NCP	%	98			70-130	Pass	
Anthracene	S13-Ja11980	NCP	%	118			70-130	Pass	
Benz(a)anthracene	S13-Ja11980	NCP	%	104			70-130	Pass	
Benzo(a)pyrene	S13-Ja11980	NCP	%	107			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja11980	NCP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	S13-Ja11980	NCP	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	S13-Ja11980	NCP	%	108			70-130	Pass	
Dibenz(a.h)anthracene	S13-Ja11980	NCP	%	102			70-130	Pass	
Fluoranthene	S13-Ja11980	NCP	%	113			70-130	Pass	
Fluorene	S13-Ja11980	NCP	%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja11980	NCP	%	103			70-130	Pass	
Naphthalene	S13-Ja11980	NCP	%	111			70-130	Pass	
Phenanthrene	S13-Ja11980	NCP	%	114			70-130	Pass	
Pyrene	S13-Ja11980	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered				Result 1					
Lead (filtered)	S13-Ja14054	NCP	%	103			70-130	Pass	
Mercury (filtered)	S13-Fe00636	NCP	%	83			70-130	Pass	
Nickel (filtered)	S13-Ja14054	NCP	%	104			70-130	Pass	
Arsenic (filtered)	S13-Ja14054	NCP	%	103			70-130	Pass	
Cadmium (filtered)	S13-Ja14054	NCP	%	101			70-130	Pass	
Chromium (filtered)	S13-Ja14054	NCP	%	101			70-130	Pass	
Copper (filtered)	S13-Ja14054	NCP	%	100			70-130	Pass	
Zinc (filtered)	S13-Ja14054	NCP	%	106			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Ja12848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S13-Ja12848	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S13-Ja12848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S13-Ja12848	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Total BTEX	S13-Ja12848	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Ja12848	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
TRH C6-C10	S13-Ja12848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Ja12848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Ja11979	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Benzo(g.h.i)perylene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S13-Ja11979	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Metals M8 filtered				Result 1	Result 2	RPD			
Lead (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S13-Ja15773	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	29	30%	Pass	
Cadmium (filtered)	S13-Ja14052	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S13-Ja14052	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S13-Ja14052	NCP	mg/L	< 0.005	< 0.005	10	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Jean Heng	Client Services
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
James Norford	Senior Analyst-Metal (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref: ASET32234/ 35414 / 1 - 9
Your ref: 366890
NATA Accreditation No: 14484

5 February 2013

MGT- Labmark Environmental Pty Ltd
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons
Laboratory & Technical Manager

Dear Robert

Asbestos Identification
This report presents the results of nine samples, forwarded by MGT- Labmark Environmental Pty Ltd on 4 February 2013, for analysis for asbestos.

1.Introduction: Nine samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET32234 / 35414 / 1. TP24A - 0.05-0.15 - Ja15732
Approx dimensions 3.6 cm x 3.5 cm x 2.4 cm
The sample consisted of a mixture of clayish soil, stones and fragments of plaster.
No asbestos detected.

Sample No. 2. ASET32234 / 35414 / 2. TP25 - 0.9-1.0 - Ja15737
Approx dimensions 5.1 cm x 5.0 cm x 2.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 3. ASET32234 / 35414 / 3. TP26 - 0.4-0.5 - Ja15739
Approx dimensions 4.2 cm x 4.2 cm x 2.3 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 4. ASET32234 / 35414 / 4. TP27 - 0.05-0.15 - Ja15741
Approx dimensions 5.4 cm x 5.2 cm x 2.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 5. ASET32234 / 35414 / 5. TP28 - 0.4-0.5 - Ja15745
Approx dimensions 5.0 cm x 5.0 cm x 2.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 6. ASET32234 / 35414 / 6. TP29 - 0.4-0.5 - Ja15750
Approx dimensions 5.0 cm x 4.5 cm x 2.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 7. ASET32234 / 35414 / 7. TP30 - 0.4-0.5 - Ja15755
Approx dimensions 4.6 cm x 4.0 cm x 2.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 8. ASET32234 / 35414 / 8. TP31 - 0.05-0.15 - Ja15758
Approx dimensions 5.0 cm x 5.0 cm x 2.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 9. ASET32234 / 35414 / 9. TP33 - 0.4-0.5 - Ja15765
Approx dimensions 4.5 cm x 4.5 cm x 2.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Nisansala Maddage. BSc (Hons)
Environmental Scientist/Approved Identifier

Mahen De Silva . BSc. MSc. Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Signatory

NATA
WORLD RECOGNISED
ACCREDITATION

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

#366890 PT.

Enquiries Syd

From:	Jean Heng
Sent:	Tuesday, 29 January 2013 5:01 PM
To:	Enviro Syd
Subject:	FW: ENAURHOD04454AA - Bankstown Golf Club
Follow Up Flag:	Follow up
Flag Status:	Red
Attachments:	mgt COC.pdf

Jean Heng
Client Manager | NSW

Eurofins | mgt
Unit F3-F6, Parkview Building
16 Mars Road,
Lane Cove West, NSW 2066, Australia
Phone: +61 2 9900 8400
Direct: +61 2 9900 8460
Mobile: +61 403 637 214
Fax: +61 2 9420 2977

http://www.mgtlabmark.com.au

From: Fiona Wong [mailto:Fiona_Wong@coffey.com]
Sent: Tuesday, January 29, 2013 4:54 PM
To: Jean Heng
Subject: RE: ENAURHOD04454AA - Bankstown Golf Club

Hi Jean,

Please find attached the completed COC for the above job.

Much appreciated if you can send me a copy of the sample receipt tomorrow.

Thanks and regards, Fiona

FIONA WONG
Associate

Coffey Environments
Level 19, Citadel Tower, 799 Pacific Highway, Chatswood NSW 2067
T +61 2 9406 1000 D +61 2 9406 1213 F +61 2 9406 1004 M + 61 409 367 752
coffey.com

From: Jean Heng [mailto:Jean.Heng@mgtlabmark.com.au]
Sent: Tuesday, 29 January 2013 12:55 PM
To: Fiona Wong
Subject: RE: ENAURHOD04454AA - Bankstown Golf Club

Hi Fiona,

Just for your ease of mind, 14 days is shown in our report.

 103472

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

coffey environments
SPECIALISTS IN ENVIRONMENTAL SOCIAL AND SAFETY PERFORMANCE

Consigning Office: [illegible]
Report Results to: [illegible] Mobile: Email: [illegible] @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: [illegible] Task No: [illegible]
Project Name: [illegible] Laboratory: MGT [illegible]
Sampler's Name: [illegible] Project Manager: [illegible]
Special Instructions: [illegible]

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B1 - TRH BTEX	M8 - Metals	Asbestos	OC/OP/PCB/PAH	NOTES
	TP24 - 0.05 - 0.15	29/1/13		Soil	1 soil jar, 1 bag						HOLD
	TP24 - 0.4 - 0.5	↓		↓	↓						↓
	TP24 - 0.9 - 1.0										↓
	TP26B - 0.05 - 0.15				1 BAG		X	X	X		
	TP26B - 0.4 - 0.5										HOLD
	TP26B - 0.9 - 1.0										↓
	TP25 - 0.05 - 0.15				1 BAG						↓
	TP25 - 0.4 - 0.5										↓
	TP25 - 0.9 - 1.0						X	X	X		
	TP26 - 0.05 - 0.15				1 BAG						HOLD
	TP26 - 0.4 - 0.5						X	X	X		
	TP26 - 0.9 - 1.0										HOLD
	TP22 - 0.05 - 0.15				1 BAG		X	X	X		
	TP22 - 0.4 - 0.5										HOLD
	TP22 - 0.9 - 1.0										↓
	TP23 - 0.05 - 0.15				1 BAG						↓
	TP23 - 0.4 - 0.5				1 BAG		X	X	X	X	
	TP23 - 0.9 - 1.0				1 BAG						HOLD

RELINQUISHED BY		RECEIVED BY	
Name: [illegible]	Date: 29/1/13	Name: SDE	Date: 29/1/13
Coffey Environments	Time: 11:?? am	Company: Eurofins MGT	Time: 11:45
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☒
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. #360890

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103473

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office:
Report Results to: Mobile: Email: @coffey.com
Invoices to: Phone: Email: @coffey.com

Project No: Task No:
Project Name: Laboratory:
Sampler's Name: Project Manager:
Special Instructions:

Analysis Request Section

B1 - TPH, BTEX
M3 - METALS
ASBESTOS
OC PESTICIDES PAH

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
							HOLD
							HOLD
							HOLD
							HOLD
							HOLD

RELINQUISHED BY

Name: Date:
Coffey Environments Time:
Name: Date:
Company: Time:

RECEIVED BY

Name: Date:
Company: Time:
Name: Date:
Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☒
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. #366890

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103474

coffey environments SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office:	[illegible]				
Report Results to:	[illegible]	Mobile:		Email:	[illegible] @coffey.com
Invoices to:	[illegible]	Phone:		Email:	@coffey.com

Project No: [illegible] Task No: [illegible]

Project Name: [illegible] Laboratory: MGT [illegible]

Sampler's Name: [illegible] Project Manager: [illegible]

Special Instructions: [illegible]

Analysis Request Section: B1-TRH/BTEX; M8-METALS; ASBESTOS; [illegible]; C6-C9; BTEX

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Analysis	NOTES
	TP2 0.0-0.5	29/1/13		Soil	Soil Jar		X X X	HOLD
	TP2 0.9-1.0	↓		↓	↓			
	QC8						HOLD	
	QC9						↓	
	QC9A						↓	[illegible]
	QC10						↓	
	QC11						↓	
	TB (MGT [illegible])						X X	
	TS (MGT [illegible])	↓		↓	↓		X X	
	RB 25/01/13	29/1/13		Water	2V, 1A, 1P		X X X	

RELINQUISHED BY		RECEIVED BY		Sample Receipt Advice: (Lab Use Only)	
Name: [illegible]	Date: 29/1/13	Name: SUE	Date: 29/1/13	All Samples Recieved in Good Condition	☑
Coffey Environments	Time: 11:[illegible] am	Company: Eurofins MGT	Time: 11:45	All Documentation is in Proper Order	☒
Name:	Date:	Name:	Date:	Samples Received Properly Chilled	☑
Company:	Time:	Company:	Time:	Lab. Ref/Batch No.	#366890

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103472

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG Mobile: Email: FIONA.WONG @coffey.com
Invoices to: " " Phone: Email: @coffey.com

Project No: ENVIRONMENTAL Task No: LABORATORY
Project Name: BANKSTOWN Golf club Laboratory: MGT LABMARK
Sampler's Name: JC SMITH Project Manager: FIONA WONG
Special Instructions: PLEASE FORWARD QC7A TO ENVIROLAB

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP24 - 0.05 - 0.15	25/1/13		Soil	Soil ODAR + BAG		
	TP24 - 0.4 - 0.5						
	TP24 - 0.9 - 1.0						
	TP24A - 0.05 - 0.15				+ BAG		
	TP24A - 0.4 - 0.5						
	TP24A - 0.9 - 1.0						
	TP25 - 0.05 - 0.15				+ BAG		
	TP25 - 0.4 - 0.5						
	TP25 - 0.9 - 1.0						
	TP26 - 0.05 - 0.15				+ BAG		
	TP26 - 0.4 - 0.5						
	TP26 - 0.9 - 1.0						
	TP27 - 0.05 - 0.15				+ BAG		
	TP27 - 0.4 - 0.5						
	TP27 - 0.9 - 1.0						
	TP28 - 0.05 - 0.15				+ BAG		
	TP28 - 0.4 - 0.5				+ BAG		
	TP28 - 0.9 - 1.0				+ BAG		

RELINQUISHED BY	RECEIVED BY	Sample Receipt Advice: (Lab Use Only)
Name: FIONA WONG Date: 29/1/13 →	Name: SUE Date: 29/1/13	All Samples Recieved in Good Condition ☐
Coffey Environments Time: 11:45am	Company: EUROFINS MGT Time: 11:45	All Documentation is in Proper Order ☐
Name: Date: →	Name: Date:	Samples Received Properly Chilled ☐
Company: Time:	Company: Time:	Lab. Ref/Batch No. –

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103473

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG — Mobile: — Email: fiona.wong@coffey.com
Invoices to: " " — Phone: — Email: @coffey.com

Project No: ENVIRONMENTAL DATA — Task No: LABORATORY
Project Name: BANKSTOWN GOLF CLUB — Laboratory: MGT LABMARK
Sampler's Name: IC. SPRATT — Project Manager: FIONA WONG
Special Instructions: ATTN: PLEASE FORWARD QC'D TO ENVIROLAB

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP28 - 1.9-2.0	25/9/13		SOIL	SOIL JAR		
	TP28 - 2.4-2.5						
	TP29 - 0.05-0.15				1 BAG		
	TP29 - 0.4-0.5				1 BAG		
	TP29 - 0.9-1.0				1 BAG		
	TP29 - 1.9-2.0						
	TP29 - 2.4-2.5						
	TP30 - 0.05-0.15				1 BAG		
	TP30 - 0.4-0.5				1 BAG		
	TP30 - 0.9-1.0				1 BAG		
	TP30 - 1.9-2.0						
	TP31 - 0.05-0.15				1 BAG		
	TP31 - 0.4-0.5						
	TP31 - 0.9-1.0						
	TP32 - 0.05-0.15				1 BAG		
	TP32 - 0.4-0.5						
	TP32 - 0.9-1.0						
	TP33 - 0.05-0.15				1 BAG		

RELINQUISHED BY		RECEIVED BY		Sample Receipt Advice: (Lab Use Only)	
Name: FIONA WONG	Date: 29/1/13	Name: SUE	Date: 29/1/13	All Samples Recieved in Good Condition	☐
Coffey Environments	Time: 11:45am	Company: EUROFINS MGT	Time: 11:45	All Documentation is in Proper Order	☐
Name:	Date:	Name:	Date:	Samples Received Properly Chilled	☐
Company:	Time:	Company:	Time:	Lab. Ref/Batch No.	

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

13 29/1/13 2pm.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2 103474

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: Fiona Wong Mobile: Email: Fiona.wong @coffey.com
Invoices to: " " Phone: Email: @coffey.com

Project No: GENVRHOD04456AA Task No: LABORATORY
Project Name: Bankstown Golf club Laboratory: MGT LABMARK
Sampler's Name: K. SPRATT Project Manager: Fiona Wong
Special Instructions: ✓ PLEASE FORWARD QC9A TO ENVIROLAB.

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP33_0.4-0.5	25/1/13		Soil	Soil JAR		
	TP33_0.9-1.0	↓		↓	↓		
	QC8						
	QC9						
	QC9A						✓ PLEASE FORWARD TO ENVIROLAB
	QC10						
	QC11						
	TB (MGT PREP)						
	TS (MGT PREP)						
	RB_250113	25/1/13		WATER	2V, 1A, 1P		

RELINQUISHED BY		RECEIVED BY	
Name: FIONA WONG	Date: 29/1/13 →	Name: SUE	Date: 29/1/13
Coffey Environments	Time: 11:45 am	Company: Eurofins MGT	Time: 11:45
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

GOWANS PRINTING (02) 9755 3545

#366890

Enquiries Syd

From: Katherine Spruth [Katherine_Spruth@coffey.com]
Sent: Wednesday, 30 January 2013 10:10 AM
To: Enquiries Syd
Subject: RE: Bankstown Golf Club Samples Query ENAURHOD04454AA

HI guys

Just checked my logs – those two samples ARE TP28 samples TP27 never went down that deep!!

thanks for your help please log in accordingly

Regards

KAT SPRUTH
Environmental Scientist
Coffey Environments Australia Pty Ltd
Citadel Tower, 799 Pacific Highway, Chatswood, NSW 2067
T (+61) (2) 9406 1197
coffey.com

From: Enquiries Syd [mailto:Enquiries.Syd@mgtlabmark.com.au]
Sent: Wednesday, 30 January 2013 10:06 AM
To: Katherine Spruth; Fiona Wong
Cc: Enviro Syd
Subject: Bankstown Golf Club Samples Query ENAURHOD04454AA
Importance: High

Hi Kat

I just left you a voicemail message as I was unable to reach you.

We received samples for Bankstown Golf Club yesterday which we are in the processing of logging in however there is a discrepancy that may hold up getting this job into the system:

Missing samples: TP28_1.9-2.0
TP28_2.4-2.5

Additional samples: TP27_1.9-2.0
TP27_2.4-2.5

Is it possible that the jars were mislabeled as TP27 instead of TP28 as indicated on the COC, or vice versa?

Can you please advise asap if these two samples are the missing TP28 samples or if they need to be logged as additional samples not originally on the COC.

Thanks Kat!

Regards,

It is essential to include all correspondence to: enviro.syd@mgtlabmark.com.au

Kind Regards,

Priscilla Tourany

30/01/2013

mgt LabMark ENVIRONMENTAL LABORATORIES

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Site # 1254 & 14271

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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**Coffey Environments Pty Ltd NSW**
Contact name:	Fiona Wong
Client job number:	BANKSTOWN GOLF CLUB ENAURHOD04454AA
COC number:	103473-103474
Turn around time:	5 Day
Date/Time received:	Jan 29, 2013 4:54 PM
mgt-LabMark reference:	**366890**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by mgt-LabMark Sample Receipt : 13 degrees Celsius.

☒ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☑ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

QC9A forwarded to Envirolab. | Asbestos analysis conducted by ASET. | Sample depth discrepancy: COC = TP29_1.9-2.4, Jar = TP29_1.9-2.0; logged in as per COC unless otherwise requested. | Two additional asbestos bags received, one labelled as "TP30_" without a depth indicated and the other unlabelled. These sample bags have been logged in as Bag 1 and Bag 2 respectively, on HOLD unless otherwise requested. | Sample jars labelled as TP27_1.9-2.0 and TP27_2.4-2.5 logged in as TP28_1.9-2.0 and TP28_2.4-2.5 as per client confirmation
Samples received by the laboratory after 4pm are deemed to have been received the following working day.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: jean.heng@mgtlabmark.com.au

Results will be delivered electronically via e.mail to Fiona Wong - fiona_wong@coffey.com.

mgt LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**368118-S**
Client Reference	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA
Received Date	Feb 08, 2013

Client Sample ID			**QC11**
Sample Matrix			**Soil**
mgt-LabMark Sample No.			**S13-Fe05348**
Date Sampled			**Jan 25, 2013**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	10	mg/kg	< 10
TRH C10-C14	50	mg/kg	< 50
TRH C15-C28	100	mg/kg	< 100
TRH C29-C36	100	mg/kg	< 100
TRH C10-36 (Total)	100	mg/kg	< 100
BTEX			
Benzene	0.5	mg/kg	< 0.5
Toluene	0.5	mg/kg	< 0.5
Ethylbenzene	0.5	mg/kg	< 0.5
m&p-Xylenes	1	mg/kg	< 1
o-Xylene	0.5	mg/kg	< 0.5
Xylenes - Total	1.5	mg/kg	< 1.5
Total BTEX	1.5	mg/kg	< 1.5
4-Bromofluorobenzene (surr.)	1	%	89
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
Heavy Metals			
Arsenic	2	mg/kg	5.9
Cadmium	0.4	mg/kg	0.6
Chromium	5	mg/kg	24
Copper	5	mg/kg	< 5
Lead	5	mg/kg	9.7
Mercury	0.05	mg/kg	< 0.05
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	< 5
% Moisture	0.1	%	18

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 11, 2013	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions	Sydney	Feb 11, 2013	14 Day
- Method: LM-LTM-ORG2010			
BTEX	Sydney	Feb 08, 2013	14 Day
- Method: E029/E016 BTEX			
Metals M8	Sydney	Feb 08, 2013	28 Day
- Method: E022 Acid Extractable metals in Soils & E026 Mercury			
% Moisture	Sydney	Feb 08, 2013	28 Day
- Method: E005 Moisture Content			

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

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Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Feb 8, 2013 5:10 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	368118 +61 2 9406 1000 +61 2 9406 1004	**Due:** **Priority:** **Contact Name:**	Feb 12, 2013 1 Day Fiona Wong
Client Job No.:	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Metals M8	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217					X	X	X	X
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
QC11	Jan 25, 2013		Soil	S13-Fe05348	X	X	X	X

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/kg	< 10			10	Pass	
TRH C10-C14	mg/kg	< 50			50	Pass	
TRH C15-C28	mg/kg	< 100			100	Pass	
TRH C29-C36	mg/kg	< 100			100	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 1			1	Pass	
o-Xylene	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 1.5			1.5	Pass	
Total BTEX	mg/kg	< 1.5			1.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	%	92			70-130	Pass	
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	107			70-130	Pass	
Toluene	%	109			70-130	Pass	
Ethylbenzene	%	108			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	105			70-130	Pass	
Xylenes - Total	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	%	87			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
TRH >C10-C16	%	97			70-130	Pass	
LCS - % Recovery							
Metals M8 E022 Acid Extractable metals in Soils & E026 Mercury							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	82			70-130	Pass	
Cadmium			%	94			70-130	Pass	
Chromium			%	87			70-130	Pass	
Copper			%	98			70-130	Pass	
Lead			%	85			70-130	Pass	
Mercury			%	109			70-130	Pass	
Nickel			%	90			70-130	Pass	
Zinc			%	101			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Fe04014	NCP	%	82			70-130	Pass	
TRH C10-C14	S13-Fe04416	NCP	%	89			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Fe04014	NCP	%	99			70-130	Pass	
Toluene	S13-Fe04014	NCP	%	100			70-130	Pass	
Ethylbenzene	S13-Fe04014	NCP	%	99			70-130	Pass	
m&p-Xylenes	S13-Fe04014	NCP	%	96			70-130	Pass	
o-Xylene	S13-Fe04014	NCP	%	97			70-130	Pass	
Xylenes - Total	S13-Fe04014	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Fe04014	NCP	%	80			70-130	Pass	
TRH C6-C10	S13-Fe04014	NCP	%	81			70-130	Pass	
TRH >C10-C16	S13-Fe04416	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S13-Fe04416	NCP	%	77			70-130	Pass	
Cadmium	S13-Fe04416	NCP	%	96			70-130	Pass	
Chromium	S13-Fe04416	NCP	%	89			70-130	Pass	
Copper	S13-Fe04416	NCP	%	103			70-130	Pass	
Lead	S13-Fe04416	NCP	%	93			70-130	Pass	
Mercury	S13-Fe04416	NCP	%	99			70-130	Pass	
Nickel	S13-Fe04416	NCP	%	87			70-130	Pass	
Zinc	S13-Fe04416	NCP	%	88			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Fe04014	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
TRH C10-C14	S13-Fe04416	NCP	mg/kg	< 50	< 50	9.0	30%	Pass	
TRH C15-C28	S13-Fe04416	NCP	mg/kg	< 100	< 100	10	30%	Pass	
TRH C29-C36	S13-Fe04416	NCP	mg/kg	< 100	< 100	6.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Fe04014	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toluene	S13-Fe04014	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethylbenzene	S13-Fe04014	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
m&p-Xylenes	S13-Fe04014	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
o-Xylene	S13-Fe04014	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Xylenes - Total	S13-Fe04014	NCP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	
Total BTEX	S13-Fe04014	NCP	mg/kg	< 1.5	< 1.5	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Fe04014	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S13-Fe04014	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Fe04014	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S13-Fe04416	NCP	mg/kg	< 50	< 50	10	30%	Pass	
TRH >C16-C34	S13-Fe04416	NCP	mg/kg	< 100	< 100	1.0	30%	Pass	
TRH >C34-C40	S13-Fe04416	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S13-Fe04416	NCP	mg/kg	4.1	3.5	15	30%	Pass	
Cadmium	S13-Fe04416	NCP	mg/kg	< 0.4	< 0.4	16	30%	Pass	
Chromium	S13-Fe04416	NCP	mg/kg	22	22	1.0	30%	Pass	
Copper	S13-Fe04416	NCP	mg/kg	< 5	< 5	1.0	30%	Pass	
Lead	S13-Fe04416	NCP	mg/kg	16	14	9.0	30%	Pass	
Mercury	S13-Fe04416	NCP	mg/kg	< 0.05	< 0.05	15	30%	Pass	
Nickel	S13-Fe04416	NCP	mg/kg	7.4	7.4	<1	30%	Pass	
Zinc	S13-Fe04416	NCP	mg/kg	17	17	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Jean Heng	Client Services
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
James Norford	Senior Analyst-Metal (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

-----Original Message-----
From: Jean Heng
Sent: Friday, 8 February 2013 5:20 PM
To: Sample Receipt 1 Syd
Cc: Enviro Syd
Subject: FW: mgt-Labmark Test Results - Report 366890 : Site BANKSTOWN GOLF CLUB ENAURHOD04454AA

Hey there,

To log in for 1day TAT please. And can you please get extractions to start on this tonight as today is the last day of holding? Thanks !!!!!

Regards,
Jean Heng
Client Manager | NSW

Eurofins | mgt
Unit F3, 16 Mars Road, Lane Cove West, NSW 2066.
contact | p. +61 2 9900 8400 | f: +61 2 9420 2977
d. +61 2 9900 8460 | m: +61 403 637 214

EM# 368118

-----Original Message-----
From: Fiona Wong [mailto:Fiona_Wong@coffey.com]
Sent: Friday, February 08, 2013 5:12 PM
To: Jean Heng
Subject: RE: mgt-Labmark Test Results - Report 366890 : Site BANKSTOWN GOLF CLUB ENAURHOD04454AA

Hi Jean,

As discussed, please could you analyse one extra sample from this batch?

It is QC11 and please analyse for TPH, BTEX and metals only.

Many thanks if you can have the sample extracted today as today is the 14th day.

Kind regards, Fiona

FIONA WONG
Associate
Coffey Environments
Level 19, Citadel Tower, 799 Pacific Highway, Chatswood NSW 2067
T +61 2 9406 1000 D +61 2 9406 1213 F +61 2 9406 1004 M + 61 409 367 752
coffey.com

-----Original Message-----
From: Bob.Symons@mgtlabmark.com.au [mailto:Bob.Symons@mgtlabmark.com.au]
Sent: Wednesday, 6 February 2013 10:51 AM
To: Fiona Wong
Subject: mgt-Labmark Test Results - Report 366890 : Site BANKSTOWN GOLF CLUB ENAURHOD04454AA

Dear Fiona,

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Coffey Environments Pty Ltd NSW**

Contact name: Fiona Wong
Client job number: ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Feb 8, 2013 5:10 PM
mgt-LabMark reference: **368118**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by mgt-LabMark Sample Receipt : 13 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Additional request from 366890 | Metals as M8
Samples received by the laboratory after 4pm are deemed to have been received the following working day.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: jean.heng@mgtlabmark.com.au

Results will be delivered electronically via e.mail to Fiona Wong - fiona_wong@coffey.com.

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

Melbourne
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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Feb 8, 2013 5:10 PM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	368118	**Due:**	Feb 12, 2013
		Phone:	+61 2 9406 1000	**Priority:**	1 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					% Moisture	Metals M8	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217					X	X	X	X
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
QC11	Jan 25, 2013		Soil	S13-Fe05348	X	X	X	X

mgt LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**368175-S**
Client Reference	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA
Received Date	Feb 11, 2013

Client Sample ID			**TP16-0.9-1.0**	**TP32-0.9-1.0**
Sample Matrix			**Soil**	**Soil**
mgt-LabMark Sample No.			**S13-Fe05845**	**S13-Fe05846**
Date Sampled			**Jan 24, 2013**	**Jan 25, 2013**
Test/Reference	LOR	Unit		
Asbestos			See attached	See attached

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time

mgt LabMark ENVIRONMENTAL LABORATORIES

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Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Feb 11, 2013 9:29 AM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	368175	**Due:**	Feb 12, 2013
		Phone:	+61 2 9406 1000	**Priority:**	1 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					Asbestos
Laboratory where analysis is conducted					
Melbourne Laboratory - NATA Site # 1254 & 14271					
Sydney Laboratory - NATA Site # 18217					
Brisbane Laboratory - NATA Site # 20794					
External Laboratory					X
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
TP16-0.9-1.0	Jan 24, 2013		Soil	S13-Fe05845	X
TP32-0.9-1.0	Jan 25, 2013		Soil	S13-Fe05846	X

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Comments

Please note: Asbestos analysed by ASET (Job :ASET32296/35476/1-2) NATA Accreditation : 14484

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Authorised By

Jean Heng Client Services

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref: ASET32296/ 35476 / 1 - 2
Your ref: 368175
NATA Accreditation No: 14484

11 February 2013

MGT- Labmark Environmental Pty Ltd
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons
Laboratory & Technical Manager

Dear Robert

Asbestos Identification
This report presents the results of two samples, forwarded by MGT- Labmark Environmental Pty Ltd on 11 February 2013, for analysis for asbestos.

1.Introduction: Two samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET32296 / 35476 / 1. TP16 - 0.9-1.0 - Fe05845
Approx dimensions 3.0 cm x 3.0 cm x 1.1 cm
The sample consisted of a mixture of clayish sandy soil, stones and fragments of plaster.
No asbestos detected.

Sample No. 2. ASET32296 / 35476 / 2. TP32 - 0.9-1.0 - Fe05846
Approx dimensions 3.0 cm x 2.5 cm x 1.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Analysed and reported by,

Nisansala Maddage. BSc(Hons)
Environmental Scientist/Approved Identifier

Mahen De Silva . BSc. MSc. Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Signatory

NATA
WORLD RECOGNISED ACCREDITATION

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

#368175

URGENT

Send
11/2

From: Fiona Wong <Fiona_Wong@coffey.com>
Date: 11 February 2013 9:29:18 AM AEDT
To: Jean Heng <Jean.Heng@mgtlabmark.com.au>
Subject: ENAURHOD04454AA - Bankstown Golf Club

Hi Jean,

Can you please also analyse asbestos for the following samples:

TP16-0.9-1.0 – Batch 366732
TP32-0.9-1.0 – Batch 366890

Please schedule it for 1 day TAT.

Many thanks,

FIONA WONG
Associate

Coffey Environments
Level 19, Citadel Tower, 799 Pacific Highway, Chatswood NSW 2067
T +61 2 9406 1000 D +61 2 9406 1213 F +61 2 9406 1004 M + 61 409 367 752
coffey.com

mgt LabMark ENVIRONMENTAL LABORATORIES

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**Coffey Environments Pty Ltd NSW**
Contact name:	Fiona Wong
Client job number:	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA
COC number:	Not provided
Turn around time:	1 Day
Date/Time received:	Feb 11, 2013 9:29 AM
mgt-LabMark reference:	**368175**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by mgt-LabMark Sample Receipt : 3.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Addional from reports 366732 and 366890

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: jean.heng@mgtlabmark.com.au

Results will be delivered electronically via e.mail to Fiona Wong - fiona_wong@coffey.com.

mgt-LabMark Sample Receipt

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Feb 11, 2013 9:29 AM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	368175	**Due:**	Feb 12, 2013
		Phone:	+61 2 9406 1000	**Priority:**	1 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	ADDITIONAL: BANKSTOWN GOLF CLUB ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					Asbestos
Laboratory where analysis is conducted					
Melbourne Laboratory - NATA Site # 1254 & 14271					
Sydney Laboratory - NATA Site # 18217					
Brisbane Laboratory - NATA Site # 20794					
External Laboratory					X
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
TP16-0.9-1.0	Jan 24, 2013		Soil	S13-Fe05845	X
TP32-0.9-1.0	Jan 25, 2013		Soil	S13-Fe05846	X

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 84788

Client:
Coffey Environment
Level 19, Tower B, Citadel Tower
799 Pacific Hwy
Chatswood
NSW 2067

Attention: Fiona Wong

Sample log in details:

Your Reference:	**ENAURHOD0445AA, Bankstown Golf Club**
No. of samples:	3 soils
Date samples received / completed instructions received	29/01/13 / 29/01/13

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	5/02/13 / 1/02/13
Date of Preliminary Report:	Not issued

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Rhian Morgan
Reporting Supervisor

Hinoko Miyazaki
Chemist

Alex MacLean
Chemist

Jeremy Faircloth
Chemist

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date extracted	-	30/01/2013	30/01/2013
Date analysed	-	31/01/2013	31/01/2013
TRHC$_6$ - C$_9$	mg/kg	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25
vTPHC$_6$ - 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
Surrogate aaa-Trifluorotoluene	%	105	115

svTRH (C10-C40) in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date extracted	-	30/1/2013	30/1/2013
Date analysed	-	31/1/2013	31/1/2013
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100
TRHC$_{29}$ - 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
Surrogate o-Terphenyl	%	86	89

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date extracted	-	30/01/2013	30/01/2013
Date analysed	-	31/01/2013	31/01/2013
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+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
Benzo(a)pyrene TEQ	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	82	90

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date extracted	-	30/1/2013	30/1/2013
Date analysed	-	30/1/2013	30/1/2013
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
Surrogate TCMX	%	101	104

Organophosphorus Pesticides Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date extracted	-	30/1/2013	30/1/2013
Date analysed	-	30/1/2013	30/1/2013
Diazinon	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Surrogate TCMX	%	101	104

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date digested	-	30/01/2013	30/01/2013
Date analysed	-	30/01/2013	30/01/2013
Arsenic	mg/kg	7	<4
Cadmium	mg/kg	<0.5	<0.5
Chromium	mg/kg	25	6
Copper	mg/kg	12	8
Lead	mg/kg	11	9
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	3	2
Zinc	mg/kg	7	1

Moisture Our Reference: Your Reference Type of sample	UNITS ---------- ----------	84788-1 QC1A Soil	84788-2 QC2A Soil
Date prepared	-	30/01/13	30/01/13
Date analysed	-	31/01/13	31/01/13
Moisture	%	24	9.9

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 draft Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 draft Guideline on Investigation Levels for Soil and Groundwater.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			30/01/2013	[NT]	[NT]	LCS-3	30/01/2013
Date analysed	-			31/01/2013	[NT]	[NT]	LCS-3	31/01/2013
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-3	121%
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-3	121%
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	25	Org-016	[NT]	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-3	122%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-3	120%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-3	118%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-3	123%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-3	122%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	112	[NT]	[NT]	LCS-3	107%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			30/1/2013	[NT]	[NT]	LCS-4	30/1/2013
Date analysed	-			31/1/2013	[NT]	[NT]	LCS-4	31/1/2013
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	96%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	98%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	82%
TRH>C_{10}-C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	96%
TRH>C_{10} - C_{16} less Naphthalene (F2)	mg/kg	50	Org-003	[NT]	[NT]	[NT]	[NR]	[NR]
TRH>C_{16}-C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	98%
TRH>C_{34}-C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	82%
Surrogate o-Terphenyl	%		Org-003	94	[NT]	[NT]	LCS-4	101%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			30/01/2013	[NT]	[NT]	LCS-3	30/01/2013
Date analysed	-			31/01/2013	[NT]	[NT]	LCS-3	31/01/2013
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	108%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	112%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	109%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	110%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	110%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-3	109%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-3	112%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	0.5	Org-012 subset	[NT]	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	83	[NT]	[NT]	LCS-3	83%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			30/1/2013	[NT]	[NT]	LCS-3	30/1/2013
Date analysed	-			30/1/2013	[NT]	[NT]	LCS-3	30/1/2013
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	100%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	109%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	101%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	115%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	105%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	103%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	99%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	103%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	91%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-3	112%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	101	[NT]	[NT]	LCS-3	97%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			30/1/2013	[NT]	[NT]	LCS-3	30/1/2013
Date analysed	-			30/1/2013	[NT]	[NT]	LCS-3	30/1/2013
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-3	92%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-3	93%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-3	109%
Surrogate TCMX	%		Org-008	101	[NT]	[NT]	LCS-3	101%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			30/1/2013	[NT]	[NT]	LCS-2	30/1/2013
Date analysed	-			30/1/2013	[NT]	[NT]	LCS-2	30/1/2013
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-2	91%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-2	92%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	94%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	94%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	92%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-2	103%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	94%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	93%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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 and 10-140% for SVOC and speciated phenols is acceptable.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103466

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: FIONA WONG — Mobile: — Email: FIONA.WONG @coffey.com
Invoices to: " " — Phone: — Email: @coffey.com

Project No: GWAURR00644S4AA — Task No: LABORATORY
Project Name: BANKSTOWN GOLF CLUB — Laboratory: MGT LABMARK
Sampler's Name: KAT S — Project Manager: FIONA WONG
Special Instructions: PLEASE FORWARD QC1A, QC2A, QC6A

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)
	MW1-0.15-0.25	23/1/13		Soil	Soil JAR + BAG	5day
	MW1-0.4-0.5				+ BAG	
	MW1-0.7-1.0					
	MW1-1.9-2.0					
	MW1-2.5-2.7					
	MW2-0.05-0.15				+ BAG	
	MW2-0.4-0.5				+ BAG	
	MW2-0.7-1.0					
	MW2-1.8-2.0					
	MW2-3.0-3.2					
	MW2-3.6-3.8					
	QC1					
1	QC1A					
	TB (MGT PREP) SET 1					
	TS (MGT PREP) SET 1					
	QC2					
2	QC2A					
	MW3-0.05-0.15	↓		↓	+ BAG	↓

Analysis Request Section

NOTES

ENVIROLAB — Envirolab Services, 12 Ashley St, Chatswood NSW 2067, Ph: (02) 9910 6200
Job No: 84780
Date Received: 29/01
Time Received: 11:30
Received by: SUE
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PLEASE FORWARD TO ENVIROLAB
MGT PREPARED
MGT PREPARED
PLEASE FORWARD TO ENVIROLAB

RELINQUISHED BY

Name: FIONA WONG — Date: 25/1/2013
Coffey Environments — Time:
Name: CHRISTINE — Date: 29/1/13 0850
Company: ~~MGT LAB~~ — Time: EVENING MGT

RECEIVED BY

Name: SUE — Date: 25/1/13
Company: MGT Labmark — Time: 1:9M
Name: SOPHIE — Date: 29/1
Company: ES — Time: 11:30

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 366732

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 103471

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD

Report Results to: FIONA WONG Mobile: Email: FIONA.WONG @coffey.com

Invoices to: " " Phone: Email: @coffey.com

Project No: ENAURHODD4454AA Task No: LABORATORY

Project Name: BANKSTOWN GOLF CLUB Laboratory: MGT LABMARK

Sampler's Name: K. SPENN Project Manager: FIONA WONG

Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	TP23_0.05-0.15	24/1/13		Soil	Soil JAR BAG	5 days	
	TP23_0.4-0.5						
	TP23_0.9-1.0						84788
	QC3						
	QC4						
	QC5						
	QC6						
3	QC6A						PLEASE FORWARD TO ENVIROLAB
	QC7						
	TB 2 (MGT PREPARED)						
	TS 2 (MGT PREPARED)						
	RB_23113	23/1/13		WATER	2V, 1A, 1P		
	RB_24113	24/1/13		WATER	2V, 1A, 1P		

RELINQUISHED BY			RECEIVED BY		
Name: FIONA WONG	Date: 25/1/2013	→	Name: SUE	Date: 25/1/13	
Coffey Environments	Time:		Company: MGT Labmark	Time: 11AM	
Name:	Date:	→	Name: Sophie	Date: 27/01	
Company:	Time:		Company: ELS	Time: 11:30	

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No. 366732

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

2.5 28/1/13 12.15pm

mgt LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention:Fiona Wong

Report	**367220-W**
Client Reference	DSI BANKSTOWN GOLF COURSE ENAURHOD04454AA
Received Date	Feb 01, 2013

Client Sample ID			**MW1**	**MW2**	**MW3**	**QC1**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
mgt-LabMark Sample No.			**S13-Fe00184**	**S13-Fe00185**	**S13-Fe00186**	**S13-Fe00187**
Date Sampled			**Jan 31, 2013**	**Jan 31, 2013**	**Jan 31, 2013**	**Jan 31, 2013**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total BTEX	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Bromofluorobenzene (surr.)	1	%	94	89	89	88
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Heavy Metals						
Lead (filtered)	0.001	mg/L	0.005	< 0.001	< 0.001	0.005
Mercury (filtered)	0.0001	mg/L	0.0002	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.11	0.014	0.046	0.11
Arsenic (filtered)	0.001	mg/L	0.001	0.001	< 0.001	0.001
Cadmium (filtered)	0.0001	mg/L	0.0022	0.0004	0.0009	0.0023
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.012	< 0.001	0.002	0.011
Zinc (filtered)	0.005	mg/L	0.48	0.12	0.20	0.35

Client Sample ID			RB_31113	TB	TS	MW1
Sample Matrix			Water	Water	Water	Water (Ultra-
mgt-LabMark Sample No.			S13-Fe00188	S13-Fe00189	S13-Fe00190	S13-Fe00191
Date Sampled			Jan 31, 2013	Jan 31, 2013	Jan 31, 2013	Jan 31, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	81%	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	103%	-
Toluene	0.001	mg/L	< 0.001	< 0.001	103%	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	103%	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	105%	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	107%	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	106%	-
Total BTEX	0.01	mg/L	< 0.01	< 0.01	104%	-
4-Bromofluorobenzene (surr.)	1	%	85	85	99	-
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *						
Naphthalene[N02]	0.005	mg/L	< 0.005	-	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	-
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.00001	mg/L	-	-	-	0.00003
Acenaphthylene	0.00001	mg/L	-	-	-	< 0.00001
Anthracene	0.00001	mg/L	-	-	-	0.00001
Benz(a)anthracene	0.00001	mg/L	-	-	-	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	-	-	-	< 0.00001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.00002	mg/L	-	-	-	< 0.00002
Benzo(g.h.i)perylene	0.00001	mg/L	-	-	-	< 0.00001
Chrysene	0.00005	mg/L	-	-	-	< 0.00005
Dibenz(a.h)anthracene	0.00005	mg/L	-	-	-	< 0.00005
Fluoranthene	0.00005	mg/L	-	-	-	< 0.00005
Fluorene	0.00005	mg/L	-	-	-	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	-	-	-	< 0.00005
Naphthalene	0.00005	mg/L	-	-	-	< 0.00005
Phenanthrene	0.00005	mg/L	-	-	-	0.00006
Pyrene	0.00005	mg/L	-	-	-	< 0.00005
Total PAH	0.00005	mg/L	-	-	-	0.00010
2-Fluorobiphenyl (surr.)	1	%	-	-	-	92
p-Terphenyl-d14 (surr.)	1	%	-	-	-	102
Heavy Metals						
Lead (filtered)	0.001	mg/L	< 0.001	-	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	-	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	-	-	-
Cadmium (filtered)	0.0001	mg/L	< 0.0001	-	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	-	-	-

Client Sample ID			RB_31113	TB	TS	MW1
Sample Matrix			Water	Water	Water	Water (Ultra-
mgt-LabMark Sample No.			S13-Fe00188	S13-Fe00189	S13-Fe00190	S13-Fe00191
Date Sampled			Jan 31, 2013	Jan 31, 2013	Jan 31, 2013	Jan 31, 2013
Test/Reference	LOR	Unit				
Heavy Metals						
Copper (filtered)	0.001	mg/L	< 0.001	-	-	-
Zinc (filtered)	0.005	mg/L	< 0.005	-	-	-

Client Sample ID			MW2	MW3	QC1	RB_31113
Sample Matrix			Water (Ultra-	Water (Ultra-	Water (Ultra-	Water (Ultra-
mgt-LabMark Sample No.			S13-Fe00192	S13-Fe00193	S13-Fe00194	S13-Fe00195
Date Sampled			Jan 31, 2013	Jan 31, 2013	Jan 31, 2013	Jan 31, 2013
Test/Reference	LOR	Unit				
Polyaromatic Hydrocarbons (PAH)						
Acenaphthene	0.00001	mg/L	0.00003	0.00007	0.00002	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	0.00002	0.00007	0.00003	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b)fluoranthene & Benzo(k)fluoranthene	0.00002	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Dibenz(a.h)anthracene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Fluorene	0.00005	mg/L	0.00006	0.00010	< 0.00005	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Naphthalene	0.00005	mg/L	< 0.00005	0.00010	< 0.00005	< 0.00005
Phenanthrene	0.00005	mg/L	0.00008	0.00023	0.00007	< 0.00005
Pyrene	0.00005	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005
Total PAH	0.00005	mg/L	0.00019	0.00058	0.00012	< 0.00005
2-Fluorobiphenyl (surr.)	1	%	96	82	92	100
p-Terphenyl-d14 (surr.)	1	%	102	98	104	100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Holding Time
mgt-LabMark Suite 2 (filtered metals)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 02, 2013	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Feb 08, 2013	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions	Sydney	Feb 02, 2013	7 Day
- Method: LM-LTM-ORG2010			
Metals M8 filtered	Sydney	Feb 01, 2013	28 Day
- Method: E020/E030 Filtered Metals in Water & E026 Mercury			
Heavy Metals (filtered)	Sydney	Feb 01, 2013	180 Day
- Method: E020/E030 Filtered Metals in Water			
Polyaromatic Hydrocarbons (PAH)	Sydney	Feb 02, 2013	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			

mgt LabMark ENVIRONMENTAL LABORATORIES

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3-5 Kingston Town Close
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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**		**Received:**	Feb 1, 2013 11:10 AM
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	367220	**Due:**	Feb 8, 2013
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1004	**Contact Name:**	Fiona Wong
Client Job No.:	DSI BANKSTOWN GOLF COURSE ENAURHOD04454AA				

mgt-LabMark Client Manager: Jean Heng

Sample Detail					TRH C6-C9	BTEX	Metals M8 filtered	BTEX	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 2 (filtered metals)
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
MW1	Jan 31, 2013		Water	S13-Fe00184			X			X
MW2	Jan 31, 2013		Water	S13-Fe00185			X			X
MW3	Jan 31, 2013		Water	S13-Fe00186			X			X
QC1	Jan 31, 2013		Water	S13-Fe00187			X			X
RB_31113	Jan 31, 2013		Water	S13-Fe00188			X			X
TB	Jan 31, 2013		Water	S13-Fe00189	X			X		
TS	Jan 31, 2013		Water	S13-Fe00190	X	X				
MW1	Jan 31, 2013		Water (Ultra-trace)	S13-Fe00191					X	

mgt LabMark ENVIRONMENTAL LABORATORIES

ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Coffey Environments Pty Ltd NSW	**Order No.:**	
Address:	Level 20, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:** **Phone:** **Fax:**	367220 +61 2 9406 1000 +61 2 9406 1004
Client Job No.:	DSI BANKSTOWN GOLF COURSE ENAURHOD04454AA		

Received:	Feb 1, 2013 11:10 AM
Due:	Feb 8, 2013
Priority:	5 Day
Contact Name:	Fiona Wong

mgt-LabMark Client Manager: Jean Heng

Sample Detail					TRH C6-C9	BTEX	Metals M8 filtered	BTEX	Polyaromatic Hydrocarbons (PAH)	mgt-LabMark Suite 2 (filtered metals)
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217					X		X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
MW2	Jan 31, 2013		Water (Ultra-trace)	S13-Fe00192					X	
MW3	Jan 31, 2013		Water (Ultra-trace)	S13-Fe00193					X	
QC1	Jan 31, 2013		Water (Ultra-trace)	S13-Fe00194					X	
RB_31113	Jan 31, 2013		Water (Ultra-trace)	S13-Fe00195					X	

mgt-LabMark Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX E029/E016 BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Total BTEX	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/L	< 0.005			0.005	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	mg/L	< 0.00002			0.00002	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00005			0.00005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00005			0.00005	Pass	
Fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Fluorene	mg/L	< 0.00005			0.00005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00005			0.00005	Pass	
Naphthalene	mg/L	< 0.00005			0.00005	Pass	
Phenanthrene	mg/L	< 0.00005			0.00005	Pass	
Pyrene	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions E004 Petroleum Hydrocarbons (TPH)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	99			70-130	Pass	
LCS - % Recovery							
BTEX E029/E016 BTEX							
Benzene	%	115			70-130	Pass	
Toluene	%	114			70-130	Pass	
Ethylbenzene	%	115			70-130	Pass	
m&p-Xylenes	%	115			70-130	Pass	
o-Xylene	%	114			70-130	Pass	
Xylenes - Total	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	104			70-130	Pass	
TRH >C10-C16	%	99			70-130	Pass	
LCS - % Recovery							
Polyaromatic Hydrocarbons (PAH) E007 Polyaromatic Hydrocarbons (PAH)							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	77			70-130	Pass	
Anthracene	%	77			70-130	Pass	
Benz(a)anthracene	%	83			70-130	Pass	
Benzo(a)pyrene	%	84			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	%	83			70-130	Pass	
Benzo(g.h.i)perylene	%	74			70-130	Pass	
Chrysene	%	84			70-130	Pass	
Dibenz(a.h)anthracene	%	75			70-130	Pass	
Fluoranthene	%	86			70-130	Pass	
Fluorene	%	80			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	74			70-130	Pass	
Naphthalene	%	105			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Metals M8 filtered E020/E030 Filtered Metals in Water & E026 Mercury							
Lead (filtered)	%	112			70-130	Pass	
Mercury (filtered)	%	92			70-130	Pass	
Nickel (filtered)	%	112			70-130	Pass	
Arsenic (filtered)	%	114			70-130	Pass	
Cadmium (filtered)	%	111			70-130	Pass	
Chromium (filtered)	%	113			70-130	Pass	
Copper (filtered)	%	111			70-130	Pass	
Zinc (filtered)	%	117			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S13-Fe01656	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
TRH >C10-C16	S13-Fe01656	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered				Result 1					
Mercury (filtered)	S13-Fe01565	NCP	%	100			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S13-Fe00185	CP	%	91			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S13-Fe00185	CP	%	103			70-130	Pass	
Toluene	S13-Fe00185	CP	%	102			70-130	Pass	
Ethylbenzene	S13-Fe00185	CP	%	102			70-130	Pass	
m&p-Xylenes	S13-Fe00185	CP	%	104			70-130	Pass	
o-Xylene	S13-Fe00185	CP	%	105			70-130	Pass	
Xylenes - Total	S13-Fe00185	CP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1					
Naphthalene	S13-Fe00185	CP	%	103			70-130	Pass	
TRH C6-C10	S13-Fe00185	CP	%	91			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered				Result 1					
Lead (filtered)	S13-Fe00188	CP	%	96			70-130	Pass	
Nickel (filtered)	S13-Fe00188	CP	%	91			70-130	Pass	
Arsenic (filtered)	S13-Fe00188	CP	%	101			70-130	Pass	
Cadmium (filtered)	S13-Fe00188	CP	%	96			70-130	Pass	
Chromium (filtered)	S13-Fe00188	CP	%	100			70-130	Pass	
Copper (filtered)	S13-Fe00188	CP	%	94			70-130	Pass	
Zinc (filtered)	S13-Fe00188	CP	%	100			70-130	Pass	
Spike - % Recovery									
Polyaromatic Hydrocarbons (PAH)				Result 1					
Acenaphthene	S13-Fe00211	NCP	%	110			70-130	Pass	
Acenaphthylene	S13-Fe00211	NCP	%	98			70-130	Pass	
Anthracene	S13-Fe00211	NCP	%	120			70-130	Pass	
Benz(a)anthracene	S13-Fe00211	NCP	%	108			70-130	Pass	
Benzo(a)pyrene	S13-Fe00211	NCP	%	104			70-130	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Fe00211	NCP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	S13-Fe00211	NCP	%	93			70-130	Pass	
Chrysene	S13-Fe00211	NCP	%	112			70-130	Pass	
Dibenz(a.h)anthracene	S13-Fe00211	NCP	%	88			70-130	Pass	
Fluoranthene	S13-Fe00211	NCP	%	120			70-130	Pass	
Fluorene	S13-Fe00211	NCP	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S13-Fe00211	NCP	%	88			70-130	Pass	
Naphthalene	S13-Fe00211	NCP	%	109			70-130	Pass	
Phenanthrene	S13-Fe00211	NCP	%	116			70-130	Pass	
Pyrene	S13-Fe00211	NCP	%	123			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S13-Fe00184	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S13-Fe01654	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S13-Fe01654	NCP	mg/L	< 0.1	< 0.1	12	30%	Pass	
TRH C29-C36	S13-Fe01654	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S13-Fe00184	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S13-Fe00184	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S13-Fe00184	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S13-Fe00184	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S13-Fe00184	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Xylenes - Total	S13-Fe00184	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Total BTEX	S13-Fe00184	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S13-Fe00184	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
TRH C6-C10	S13-Fe00184	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S13-Fe00184	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S13-Fe01654	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S13-Fe01654	NCP	mg/L	< 0.1	0.10	11	30%	Pass	
TRH >C34-C40	S13-Fe01654	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Metals M8 filtered				Result 1	Result 2	RPD			
Mercury (filtered)	S13-Fe01564	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Duplicate									
Metals M8 filtered				Result 1	Result 2	RPD			
Lead (filtered)	S13-Fe00187	CP	mg/L	0.005	0.005	1.0	30%	Pass	
Nickel (filtered)	S13-Fe00187	CP	mg/L	0.11	0.10	2.0	30%	Pass	
Arsenic (filtered)	S13-Fe00187	CP	mg/L	0.001	0.001	9.0	30%	Pass	
Cadmium (filtered)	S13-Fe00187	CP	mg/L	0.0023	0.0022	2.0	30%	Pass	
Chromium (filtered)	S13-Fe00187	CP	mg/L	< 0.001	< 0.001	4.0	30%	Pass	
Copper (filtered)	S13-Fe00187	CP	mg/L	0.011	0.011	2.0	30%	Pass	
Zinc (filtered)	S13-Fe00187	CP	mg/L	0.35	0.35	2.0	30%	Pass	
Duplicate									
Polyaromatic Hydrocarbons (PAH)				Result 1	Result 2	RPD			
Acenaphthene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b)fluoranthene & Benzo(k)fluoranthene	S13-Fe00210	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Benzo(g.h.i)perylene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S13-Fe00210	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Jean Heng	Client Services
Laura Schofield	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
James Norford	Senior Analyst-Metal (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

Consigning Office: CHATSWOOD
Report Results to: HONA WONG Mobile: Email: HONA.WONG @coffey.com
Invoices to: " " Phone: Email: @coffey.com

Project No: ENAUEHOOGGL54AA Task No: LABORATORY
Project Name: DSI BANKSTOWN GOLF COURSE Laboratory: MGT
Sampler's Name: LCS Project Manager: HONA WONG
Special Instructions: PAHs for ULTRA-TRACE ANALYSIS

Analysis Request Section: B2 - TPH BTEX; PAH ULTRA TRACE; M8 - METALS

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	MW1	31/1/13		WATER	2A, 2V, 1P	STANDARD	
	MW2						
	MW3						
	QC1						
	RB_31113						
	TB (MGT)						
	TS (MGT)						

RELINQUISHED BY		RECEIVED BY	
Name: LC SOUTH	Date: 1/2/13	Name: SUE	Date: 1/2/13
Coffey Environments	Time: 9.25	Company: EUROFINS MGT	Time: 9-25
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 367220

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

5.5 1/2/13 11-10AM

Appendix E
Groundwater Monitoring Field Recording Sheets

Detailed Site Investigation
Corner of Bullecourt Avenue and Bullecourt Lane
Milperra NSW 2214

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Groundwater Sampling Form (A) - General

PROJECT NAME: DSI Bankstown Golf Course **PROJECT NUMBER:** ENAUWARE04456AA

FIELD PERSONNEL: KS **DATE:** 21/1/13

PROJECT MANAGER: FW

WELL ID: MW1 **METER ID:** IP (Hiro) **TOTAL WELL DEPTH:** 7.882 **SCREEN INTERVAL:**

EQUIPMENT USED: BAILER ✓ **WATERRA** ☐ **OTHER** ______ **WELL DIAMETER:** 50 **WELL STICK-UP:** Flush

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

7.882 m - 1.581 = 6.301 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME: 23 L

WELL HEADSPACE PID READING

PID READING

PPM: 0.0

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l) ppm		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
0	NA	0.5		5		32.5		5.62		103		23.0		✓					No odour/sheen.
		1		4.62		32.9		5.47		102		20.5			✓				Pale brown no odour/sheen.
		10		3.75		33.2		5.21		103		20.1			✓				" "
	(1)	23		4.03		33.2		5.39		102		19.3				✓			" "
		33		4.06		32.9		5.46		101		19.2				✓			" "
	(2)	~~46~~				PURGED		DRY	@	45L									
		~~56~~																	
	(3)	69	SAMPLE	4.31		33.1		5.43		102		19.2				✓			" "
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ✓ N ☐ DUPLICATE ID: QC1 **TRIPLICATE COLLECTED:** Y ☐ N ✓ TRIPLICATE ID: ______

WERE METALS FIELD FILTERED? Y ✓ N ☐ UNFILTERED SAMPLES MUST NOT BE PUT INTO A PRESERVED CONTAINER (IE. 'METALS' BOTTLE)

coffey environments

Groundwater Sampling Form (A) - General

PROJECT NAME: DSI Bankstown Golf Course
PROJECT NUMBER: GNAURTOD04454AA
FIELD PERSONNEL: KS
DATE: 31/1/13
PROJECT MANAGER: FW

WELL ID: MW2
METER ID: TP (hire)
TOTAL WELL DEPTH: 12.028
SCREEN INTERVAL:
EQUIPMENT USED: BAILER ☑ WATERRA ☐ OTHER
WELL DIAMETER: 50
WELL STICK-UP: flush

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

12.028 m - 2.339 = 9.689 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME: 36 L

WELL HEADSPACE PID READING

PID READING

PPM: 0.0

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (ppm)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
0	NA	0.5		4.60		19.96		6.51		103		21.3		✓					No odour / sheen
		1		4.61		20.31		6.48		103		20.0			✓				Pale brown no. odr / sheen
		9		4.75		21.31		6.56		104		19.2			✓				" "
		18		4.21		22.23		6.56		105		18.8			✓				" "
		27		3.29		23.44		6.63		96		19.0			✓				" "
	(1)	36		3.67		25.21		6.64		97		18.9			✓				" "
		45		3.70		24.3		6.62		98		19.1							
		54		2.47		22.66		6.73		96		19.2							
		63				PURGED DRY @ 56L													
	(2)	72	SAMPLE	3.14		23.24		6.71		97		19.2			✓				" "
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ☐ N ☑ DUPLICATE ID:

TRIPLICATE COLLECTED: Y ☐ N ☑ TRIPLICATE ID:

WERE METALS FIELD FILTERED? Y ☐ N ☐ (struck through) UNFILTERED SAMPLES MUST NOT BE PUT INTO A PRESERVED CONTAINER (IE. 'METALS' BOTTLE)

coffey environments

Groundwater Sampling Form (A) - General

PROJECT NAME: DSI BANKSTOWN GOLF COURSE **PROJECT NUMBER:** ENVIRO00445AA

FIELD PERSONNEL: ICS **DATE:** 31/1/13

PROJECT MANAGER: FN

WELL ID: MW3 **METER ID:** IP (HEC) **TOTAL WELL DEPTH:** 11.696 **SCREEN INTERVAL:**

EQUIPMENT USED: BAILER ☑ WATERRA ☐ OTHER **WELL DIAMETER:** 50 **WELL STICK-UP:** flush

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

11.696 m - 1.716 = 9.98 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME: 37 L

WELL HEADSPACE PID READING

PID READING

PPM: 0.0

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
0	NA	0.5		6.05		20 30		6.26		152		22.3			✓				PALE YELLOW NO ODOUR / SHEEN -
		1		6.32		21.27		5.93		135		21.2			✓				" "
		9		5.71		21.69		5.75		123		20.3			✓				PALE BROWN NO ODOUR / SHEEN
	(1)	18		5 40		22.20		5.66		105		19.5			✓				" "
		27		4.94		21.75		5.77		98		19.5			✓				" "
	(.)	37		5.11		21.84		5.85		98		19.6			✓				" "
		~~46~~		PURGED		DRY		(✓) 424											
		~~55~~																	
		64	SAMPLE	5.24		21.82		5.87		99		19.6			✓				" " "
	(2)	73																	
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ☐ N ☑ DUPLICATE ID: **TRIPLICATE COLLECTED:** Y ☐ N ☑ TRIPUCATE ID:

WERE METALS FIELD FILTERED? Y ☑ N ☐ UNFILTERED SAMPLES MUST NOT BE PUT INTO A PRESERVED CONTAINER (IE. 'METALS' BOTTLE)