# Appendix E

Laboratory Reports

71976.01...... Sampler: .....NSA,.... Project No:

Unit 16, Maddox Street, Alexandria Attn: Simon Mathews 

Email: nizam.ahamed@douglaspartners.com.au.......@douglaspartners.com.au Lab Quote No. ..... Date Required: STD Turn around.......

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Page 1 of ≤

Unit 16, Maddox Street, Alexandria 71976.01......Sampler: .....NSA... Project No:

Project Mgr. Lidsay Rockett.......Mob. Phone: 0409 773 636.......

Attn: Simon Mathews Email: nizam.ahamed@douglaspartners.com.au......@douglaspartners.com.au

Date Required: STD Turn around....... Lab Quote No. ......

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Unit 16, Maddox Street, Alexandria 71976.01....... Sampler: .....NSA...... Project No:

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Attn: Simon Mathews Email: nizam.ahamed@douglaspartners.com.au.......@douglaspartners.com.au

Date Required: STD Turn around...... Lab Quote No. .....

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71976.01......Sampler: .....NSA......

Project No:

Project Mgr. Lidsay Rockett.......Mob. Phone: 0409 773 636......

Attn: Simon Mathews Email: nizam.ahamed@douglaspartners.com.au.......@douglaspartners.com.au

Lab Quote No.

Date Required: STD Turn around......

Unit 16, Maddox Street, Alexandria

Date & Time: 25/8/63 Notes (02) 9809 0666 (02) 9809 4095 Date & Time: **D3** 411 Phone: Fax: Othe 2 **NOC8** Phenols S: 22 Received By: H∀d Received By: PCBs %440 %440 Analytes XST8 H9T Date & Time: 25/8 96 Hermitage Road, West Ryde 2114 Zn Z Ê Date & Time: Pb ට ပ် ပ္ပ As Address: eavi Container Signed: Sample Type S - soil 1918w - W Signed: Douglas Partners Giste \$208.50 \$0.8 Sampling 9 <u>₽</u> 2.6.20 V Nizam `~\^\ (^\^\) Sur. BHS/16-20 WA 2-1-2-5 6 アイン気 4.6-5:0 **2017**公立 2.6-3 0.64.0 なってか A-7.00 Sampl e Depth いて Send Results to: Lab Report No. Relinquished by: Relinquished by: BITY のエタ のエグ Sample e ID のオヤノ B H5 BHS/ BH.21 BH2/ B72 のアン

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Email: nizam.ahamed@douglaspariners.com.au.......@douglaspartners.com.au Project Mgr: Lidsay Rockett..............Mob. Phone; 0409 773 636...............

Date Required: STD Turn around...... Lab Quote No. .....

Attn: Simon Mathews

Unit 16, Maddox Street, Alexandria

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Randwick, Spectator and Stable Precincts - Contam AssesTo: Project Name:

71976.01...... Sampler .....NSA...

Project No:

Email: nizam.ahamed@douglaspartners.com.au ....... @douglaspartners.com.au Lab Quote No. Date Required: STD Turn around......

Unit 16, Maddox Street, Alexandria Attn: Simon Mathews

SGS Australia Pty Ltd

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Unit 16, Maddox Street, Alexandria SGS Australia Pty Ltd Randwick, Spectator and Stable Precincts - Contam AssesTo: Project Name: Project No:

...... Sampler: .....NSA... Project Mgr. Lindsay Rockett............Nob. Phone: 0409 773 636..... 71976.01.....

Attn: Simon Mathews Email: nizam.ahamed@douglaspartners.com.au ....... @douglaspartners.com.au Lab Quote No. .....

Date Required: STD Turn around.......

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Randwick, Spec and Stable Precinct Contam Assessment ... Project Name: Project No:

71976.01..... Sampler: .....NSA...

Email: nizam.ahamed@douglaspartners.com.au....... @douglaspartners.com.au Project Mgr. Lindsay Rockett............Mob. Phone: 0409 773 636......

Lab Quote No. ..... Date Required: STD Turn around......

To: SGS Australia Pty Ltd

Unit 16, Maddox Street, Alexandria

Attn: Simon Mathews

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Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

# CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

# FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

**Laboratory Report No:** 

E049886

Cover Page 1 of 3

Client Name:

Douglas Partners

**Client Reference:** 

Randwick, Spectator and Stable Precincts

plus Sample Results

**Contact Name:** 

Lindsay Rockett

Chain of Custody No: Sample Matrix:

na SOIL Date Received: 26/08/2010 Date Reported: 14/09/2010

This Final Certificate of Analysis consists of sample results, DQl's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

# **QUALITY ASSURANCE CRITERIA**

Accuracy:

matrix spike:

I in first 5-20, then 1 every 20 samples

Ics, crm, method:

I per analytical batch

surrogate spike:

addition per target organic method

Precision:

laboratory duplicate:

1 in first 5-10, then 1 every 10 samples

laboratory triplicate:

re-extracted & reported when duplicate RPD values exceed acceptance criteria

Holding Times: soils, waters:

Refer to LabMark Preservation & THT

table

VOC's 14 days water / soil

VAC's 7 days water or 14 days acidified

VAC's 14 days soil

SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements

Mercury 28 days

Confirmation: target organic analysis: GC/MS, or confirmatory column

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy: spike, lcs, crm surrogate:

general analytes 70% - 130% recovery

phenol analytes 50% - 130% recovery organophosphorous pesticide analytes

60% - 130% recovery phenoxy acid herbicides, organotin

50% - 130% recovery

anion/cation bal: +/- 10% (0-3 meq/l),

+/- 5% (>3 meg/l)

not detected >95% of the reported EQL Precision: method blank:

duplicate lab

0-30% (>10xEQL), 0-75% (5-10xEQL)

RPD (metals): 0-100% (<5xEQL)

duplicate lab

RPD:

0-50% (>10xEQL), 0-75% (5-10xEQL)

0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy: spike, lcs, crm surrogate:

analyte specific recovery data

<3xsd of historical mean

Sensitivity:

not applicable

EOL:

Typically 2-5 x Method Detection Limit

(MDL)

Uncertainty: spike, lcs:

ABN 50 005 085 521

measurement calculated from

Data Quality Objective

matrix spike recovery s:

historical analyte specific control

charts

RESULT ANNOTATION

d: laboratory duplicate pending

bes: batch specific les bmb: batch specific mb

Data Quality Indicator Estimated Quantitation Limit

t: laboratory triplicate crm:

p:

lcs:

laboratory control sample certified reference material

RPD relative % difference mb:

method blank

r:

Laura Schofield

Quality Control (Report signatory) laura.schofield@labmark.com.au

Laura Schofield

Authorising Chemist (NATA signatory)

laura.schofield@labmark.com.au

Ryan Hamilton

Authorising Chemist (NATA signatory) ryan.hamilton@labmark.com.au

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## **CUSTOMER CENTRIC - ANALYTICAL CHEMISTS**

Environmental Laboratory Industry Group

Laboratory Report: E049886

Cover Page 2 of 3

# **NEPC GUIDELINE COMPLIANCE - DQO**

# 1. GENERAL

- A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.
- B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.
- C. Laboratory QA/QC samples are specific to this project.
- D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.
- E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.
- F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.
- G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action.

  Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.
- H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.
- I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

# CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

- A. SRN issued to client upon sample receipt & login verification.
- B. Preservation & sampling date details specified on COC and SRN, unless noted.
- C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

# 3. NATA ACCREDITED METHODS

- A. NATA accreditation held for each in-house method and sample matrix type reported, unless noted below (Refer to subcontracted test reports for NATA accreditation status).
- B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.
- C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments. Reported by mgt LabMark Environmental Melbourne, NATA accreditation No. 1645.



## CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Laboratory Group Foundation

Laboratory Report: E049886

Cover Page 3 of 3

#### 4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix:	SOIL						
Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Volatile TPH by P&T (vTPH)	1	0	0%	0	0	0%
2	Petroleum Hydrocarbons (TPH)	1	0	0%	0	0	0%
3	Acid extractable metals - mercury	1	0	0%	0	0	0%
4	Acid extractable metals	1	0	0%	0	0	0%
5	Analysis by MGT LabMark	1	0	0%	0	0	0%
6	Moisture	1					

# GLOSSARY:

#d number of discrete duplicate extractions/analyses performed.

%d-ratio NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).

#t number of triplicate extractions/analyses performed.

number of spiked samples analysed. #s

%s-ratio USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

#### ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT 5.

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, unless indicated below.

B. Report reissued with amendments made to metals results

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

This document is issued in accordance with NATA's accreditation requirements.

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E049886 Laboratory Report No: Douglas Partners

Lindsay Rockett

Certificate of Analysis

Final

Date: 14/09/10

This report supercedes reports issued on: 06/09/10

Randwick, Spectator and Stable Precincts 71976.01

Client Reference:

шp 8

9 <u>lcs</u>

BD4/23081

275900

Laboratory Identification

Sample Identification

27/8/10 27/8/10

27/8/10 27/8/10

27/8/10 30/8/10

Laboratory Extraction (Preparation) Date

Sampling Date recorded on COC

Depth (m)

23/8/10

01>

115%

0 √

EQL 10

Volatile TPH by P&T (vTPH) C6 - C9 Fraction

Method: E029.2/E016.2 Laboratory Analysis Date

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

plus cover page

Page: 1 of 5

LabMark Pty Ltd ABN 27 079 798 397 SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 Telephone: (02) 9476 6533 Fax: (02) 9476 8219 MELBOURNE: 116 Moray Street, South Melbourne VIC 3205 Telephone: (03) 9686 8344 Fax: (03) 9686 7344



E049886 Laboratory Report No: Douglas Partners

Lindsay Rockett

шp  $\mathcal{S}$ 

00 lcs

BD4/23081 275900

ł

23/8/10 27/8/10 28/8/10

Laboratory Extraction (Preparation) Date

Laboratory Analysis Date

Sampling Date recorded on COC

Depth (m)

Laboratory Identification

Sample Identification

Petroleum Hydrocarbons (TPH)

Method: E006.2

71976.01

Client Reference:

27/8/10 28/8/10

28/8/10 27/8/10

%86

**EQL** 50 50 100 100

1 1

<100 <100 ₹

Date: 14/09/10

This report supercedes reports issued on: 06/09/10 Randwick, Spectator and Stable Precincts

plus cover page

Certificate

Final

of Analysis

Page: 2 of 5

LabMark Pty Ltd ABN 27 079 798 397 SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 Telephone: (02) 9476 6533 Fax: (02) 9476 8219 MELBOURNE: 116 Moray Street, South Melbourne VIC 3205 Telephone: (03) 9686 8344 Fax: (03) 9686 7344 Fax: (03) 9686

E006.2: 8-10g soil extracted with 20ml DCM/Acetone/Hexane (10:45:45). Analysis by GC/FID.

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

Sum of TPH C10 - C36

C15 - C28 Fraction C10 - C14 Fraction

C29 - C36 Fraction



Laboratory Report No:

E049886

Douglas Partners

Lindsay Rockett

qш 8

Ics OC

crm 8

275900

Laboratory Identification

Sample Identification

BD4/23081

71976.01

Client Reference:

Contact Name:

Certificate of Analysis Final

This report supercedes reports issued on: 06/09/10

Randwick, Spectator and Stable Precincts

Date: 14/09/10

plus cover page

Page: 3 of 5

<0.05

93%

87%

<0.05

EQL 0.05

Acid extractable metals - mercury

Mercury

Method: E026.2

27/8/10 27/8/10

27/8/10 27/8/10

ţ

23/8/10

27/8/10 3/9/10

Laboratory Extraction (Preparation) Date

Laboratory Analysis Date

Sampling Date recorded on COC

Depth (m)

27/8/10 27/8/10

Comments:

Results expressed in mg/kg dry weight unless otherwise specified

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.



	Labor	Laboratory Report No:		E049886			Pag	Page: 4 of 5		Final	
	Client	Client Name:	ı	Douglas Partners	ers		snld	plus cover page		Certi	Certificate
ENVIRONMENTAL LABORATORIES	Conta	Contact Name:	I	Lindsay Rockett	ett		Date	Date: 14/09/10		or Analysis	/S1S
	Client	Client Reference:	H	Randwick, Sp. 71976.01	ectator and S	Randwick, Spectator and Stable Precincts 71976.01		This report supercedes reports issued on: 06/09/10	eports issued on:	06/09/10	
Laboratory Identification		275900	lcs	qm							
Sample Identification		BD4/23081	OC	<u>ئ</u> ر		**************************************			,,		
Depth (m) Sampling Date recorded on COC		23/8/10	1 1	; !							
Laboratory Extraction (Preparation) Date		27/8/10	27/8/10	27/8/10							
Laboratory Analysis Date		31/8/10	30/8/10	30/8/10							
Method: E020.2/E030.2 Acid extractable metals	EQL										
Arsenic	' <b>-</b>	-	107%	7							
Cadmium	0.1	<0.1	%86	<0.1		•					
Chromium	_	7	102%	⊽							
Copper	7	4	93%	7							
Lead	7	7	105%	7						•	
Nickel	-	∇	%66	∇							
Zinc	5	\$	110%	\							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E020.2/E030.2: 0.5g digested with nitric/hydrochloric acid. Analysis by AAS and/or ICP-OES.



E049886 Laboratory Report No: Douglas Partners

Lindsay Rockett

71976.01

Client Reference:

BD4/23081

275900

Laboratory Identification

Sample Identification

27/8/10 30/8/10

Laboratory Extraction (Preparation) Date

Laboratory Analysis Date

Method: E005.2

Moisture Moisture

Sampling Date recorded on COC

Depth (m)

EQL

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Results expressed in % w/w unless otherwise specified

Comments:

23/8/10

**Date:** 14/09/10

This report supercedes reports issued on: 06/09/10 Randwick, Spectator and Stable Precincts

plus cover page

Certificate

Final

of Analysis

Page: 5 of 5

TA LabMark Pty Ltd ABN 27 079 798 397 SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 Telephone: (02) 9476 6533 Fax: (02) 9476 8219 MELBOURNE: 116 Moray Street, South Melbourne VIC 3205 Telephone: (03) 9686 8344 Fax: (03) 9686 7349



Report Date: 27/08/2010 Report Time: 8:44:23AM

Invoice Number: 10EA11215

# Sample

# Receipt



Quality, Service, Support

	Client Detai	is	Laboratory	Reference Information
Client Name: Client Phone: Client Fax: Contact Name:	Douglas Partners 02 9809 0666 02 98094095 Lindsay Rockett		II.	ve this information ready ntacting MGT Labmark.
Contact Email: Client Address:	rockettl@douglasp 96 Hermitage Roa West Ryde NSW	d	Quotation Number: Laboratory Address:	- Not provided, standard prices apply Unit 1, 8 Leighton Pl. Asquith NSW 2077
Project Name: Project Number: CoC Serial Numbe Purchase Order: Surcharge: Sample Matrix:	71976.01 er: - Not provided - - Not provided -	tor and Stable Precincts lied (results by 6:30pm on	Phone: Fax: Sample Receipt Contact Email: Reporting Contact: Email:	61 2 9476 6533 61 2 9476 8219 ct: Leanne Knowles leanne.knowles@labmark.com.au Leanne Knowles leanne.knowles@labmark.com.au
Date Sampled (ea Date Samples Rec Date Sample Rece Date Preliminary I Client TAT Reque	ceived: eipt Notice issued: Report Due:	23/08/2010 26/08/2010 27/08/2010 06/09/2010 06/09/2010	NATA Accreditation: AQIS Approval: AQIS Entry Permit:	13542 NO356 (Sydney) 200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

COC received with samples. Report number and lab ID's defined on COC.

Samples received in good order.

Samples received with cooling media: Crushed ice .

Samples received chilled. Security seals not used .

Sample container & chemical preservation suitable.

Comments:

Hg subcontracted to MGT Labmark Melbourne - results may be delayed | TPH as C6-C36 unless

otherwise instructed

**Holding Times:** 

Sample Condition:

Date received allows for sufficient time to meet Technical Holding Times.

Preservation:

Chemical preservation of samples satisfactory for requested analytes.

# Important Notes:

MGT LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of \$1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur \$5.00/ sample/ 3 months. Additional refrigerated storage shall incur \$30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from MGT LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

**Subcontracted Analyses:** 

Reported by MGT LabMark Environmental Melbourne, NATA accreditation No. 1645.

Thank you for choosing MGT Labmark to analyse your project samples.

Additional information on www.mgtlabmark.com.au

Form QS3084\_R0, Issue Date: 25 August 2010.



Report Date: 27/08/2010 Report Time: 8:44:23AM

Sample

# Receipt



Quality, Service, Support

Notice (SRN) for E049886

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request (refer to SRN comments section on first page for external subcontracting method details). Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE							,		Rec	quest	ed A	nalys	is		-	 	1	
No. Date Depth Client Sample ID	Acid extractable metals - mercury	Acid extractable metals	Moisture	PREP Not Reported	Petroleum Hydrocarbons (TPH)	Volatile TPH by P&T (vTPH)	External Analysis by MGT LabMark											
275900 23/08 BD4/230810	•		•	•	•	•	•	]							L.,			
Totals:	1	i	1	1	I	1	1											

<sup>&#</sup>x27;PREP Not Reported' refers to an internal laboratory instruction - client confirmation of this parameter is not required.



Report Date: 27/08/2010 Report Time: 8:44:23AM

Sample

Receipt



Quality, Service, Support

					 		Rec	quest	ed A	nalys	is			 	
		MET-AAS_S	Mercury												
No. Date Depth 275900 23/08	Client Sample ID BD4/230810	<ul> <li>M7 - MET</li> </ul>	● HG-T_S M												
213700 23100	Totals:	1	1	+								-			



Unit 16, Maddox Street, Alexandria SGS Australia Pty Ltd Randwick, Spectator and Stable Precincts - Contam AssesTo: Project Name:

71976.01...... Sampler: .....NSA... ..... Project No:

Attn: Simon Mathews 

Email: nizam.ahamed@douglaspartners.com.au.......@douglaspartners.com.au Date Required: STD Turn around....... Lab Quote No. .....

																ž Ž	
	Notes								**************************************			-> PLEASE FIRMARD INTERIAR	SAMPLE TO LABMARK.	Phone: (02) 9809 0666	(02) 9809 4095	Date & Time: $25/8/10-100$	Date & Time:
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Sample											<del>(</del>	000542				્રિજ	Signed:
	Sampling Date										3	15 N		88	Part	; ;	ဟ
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	Sampl e Depth	0.0.3	97 3.1-4.0	0.3-0.6 27	1-1.5	0-0.2	FP104/03~8	9-1-1	5-6-8	0.4-09 33							d by:
	Sampl e ID	HOIGH	TP106/	TPIOST	7	(Plota)	TP104/	1-20-4/	TP103/	<b>\</b>	_	204/2	-	l ab Report No.	Sand Besults to:	Relinquished by:	Relinquished by:

Page 2 of S







Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

# CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

# FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:

E050032

Cover Page 1 of 3

Client Name:

Douglas Partners

plus Sample Results

Client Reference:

Randwick, Spec and Stable Precinct Contam

Lindsay Rockett

**Contact Name:** 

Date Received: 07/09/2010 Date Reported: 15/09/2010

Chain of Custody No: Sample Matrix:

WATER

This Final Certificate of Analysis consists of sample results, DQl's, method descriptions, laboratory definitions, and internationally recognised NATA

QUALITY CONTROL

Accuracy: spike, lcs, crm

surrogate:

GLOBAL ACCEPTANCE CRITERIA (GAC)

accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

# **QUALITY ASSURANCE CRITERIA**

Accuracy:

matrix spike:

1 in first 5-20, then 1 every 20 samples

lcs, crm, method:

I ner analytical batch

surrogate spike:

addition per target organic method

Precision:

laboratory duplicate:

1 in first 5-10, then 1 every 10 samples

laboratory triplicate:

re-extracted & reported when duplicate

RPD values exceed acceptance criteria

Holding Times: soils, waters:

Refer to LabMark Preservation & THT

table

VOC's 14 days water / soil

VAC's 7 days water or 14 days acidified

VAC's 14 days soil

SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements

Mercury 28 days

RPD: **OUALITY CONTROL** 

Precision:

0-100% (<5xEQL)

general analytes 70% - 130% recovery

phenol analytes 50% - 130% recovery

organophosphorous pesticide analytes

not detected >95% of the reported EQL

0-30% (>10xEQL), 0-75% (5-10xEQL)

0-50% (>10xEQL), 0-75% (5-10xEQL)

phenoxy acid herbicides, organotin

60% - 130% recovery

50% - 130% recovery

+/- 5% (>3 meq/l)

0-100% (<5xEQL)

anion/cation bal: +/- 10% (0-3 meq/l),

Confirmation: target organic analysis: GC/MS, or confirmatory column

(MDL)

ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC) Accuracy: spike, lcs, crm

surrogate:

method blank:

duplicate lab

duplicate lab

RPD (metals):

analyte specific recovery data

<3xsd of historical mean

Sensitivity:

EQL:

Typically 2-5 x Method Detection Limit

Uncertainty: snike, lcs:

measurement calculated from historical analyte specific control

charts

## RESULT ANNOTATION

Data Quality Objective

s:

matrix spike recovery

pending

p:

lcs:

bes: batch specific les

Data Quality Indicator

ď: laboratory duplicate

laboratory triplicate

laboratory control sample

bmb: batch specific mb

Estimated Quantitation Limit

t:

certified reference material

not applicable

RPD relative % difference r:

mb: method blank

Laura Schofield

Quality Control (Report signatory) laura.schofield@labmark.com.au

Laura Schofield

Authorising Chemist (NATA signatory) laura.schofield@labmark.com.au

Ryan Hamilton

Authorising Chemist (NATA signatory) ryan.hamilton@labmark.com.au

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## CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Laboratory Industry Group Foundation

Laboratory Report: E050032

Cover Page 2 of 3

# NEPC GUIDELINE COMPLIANCE

# **GENERAL**

- A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.
- EQL's are matrix dependant and may be increased due to sample dilution or matrix interference. В.
- C. Laboratory QA/QC samples are specific to this project.
- Inter-laboratory proficiency results are available upon request. NATA accreditation details available at D. www.nata.asn.au.
- E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.
- Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If F. recovery data <20%, then the relevant results for that compound are considered not reliable.
- Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. G. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.
- H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.
- LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes. I.

#### CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS 2.

- SRN issued to client upon sample receipt & login verification. A.
- Preservation & sampling date details specified on COC and SRN, unless noted. B.
- C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

#### NATA ACCREDITED METHODS 3.

- NATA accreditation held for each in-house method and sample matrix type reported, unless noted below (Refer A. to subcontracted test reports for NATA accreditation status).
- NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA B. documents. Corporate Accreditation No. 1645.
- C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments. Reported by mgt LabMark Environmental Melbourne, NATA accreditation No. 1645.

This document is issued in accordance with NATA's accreditation requirements.

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# CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Environmental Laboratory Industry Group

Laboratory Report: E050032

Cover Page 3 of 3

# 4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix:	WATER						
Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Polyaromatic Hydrocarbons (PAH)	I	0	0%	0	0	0%
2	Filtered mercury	1	0	0%	0	0	0%

# GLOSSARY:

#d number of discrete duplicate extractions/analyses performed.

%d-ratio NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).

#t number of triplicate extractions/analyses performed.

#s number of spiked samples analysed.

%s-ratio USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

# 5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by mgt LabMark Environmental Sydney, NATA accreditation No. 13542, unless indicated below.

B. The following test was conducted by mgt LabMark Environmental Melbourne, NATA accreditation No. 1645.: Metals. Please see attached report.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark <u>DOES NOT</u> report <u>NON-RELEVANT BATCH QA/QC</u> data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.



E050032 Laboratory Report No: Douglas Partners

Lindsay Rockett

plus cover page

**Page:** 1 of 2

Certificate

Final

of Analysis

Date: 15/09/10

This report supercedes reports issued on: N/A

)	lient I	Client Reference:	జ్ చ	Randwick, Spec and Stable Precinct Contam 71976.01	scinct This report supercedes reports issued on: N/A	
Laboratory Identification		277132	lcs	mb		
Sample Identification		BD2/03091	٥c	oc oc		
Depth (m)			1			
Sampling Date recorded on COC		3/9/10	:	-		
Laboratory Extraction (Preparation) Date		9/9/10	9/9/10	9/9/10		
Laboratory Analysis Date		10/9/10	10/9/10	10/6/10		<u> </u>
Method: E007.1 Polyoromatic Hydrocarbons (PAH)	FOL					
		7	%08			
Acenaphthylene		⊽	104%	\ \		
Acenaphthene	1	⊽	74%	<b></b>		
Fluorene	1	√	%91			
Phenanthrene	1	7	78%	< <u></u>		
Anthracene	1	7	85%		-	
Fluoranthene	1	$\nabla$	%62	<1		
Pyrene	1	∇	%9 <i>L</i>	\	-	
Benz(a)anthracene	1	7	%18			
Chrysene	7	$\forall$	. %9/			
Benzo(b)&(k)fluoranthene	7	\$	74%	4		
Benzo(a) pyrene	-	⊽	94%			
Indeno(1,2,3-c,d)pyrene	1	⊽	%08			
Dibenz(a,h)anthracene	1	∀,	77%			
Benzo(g,h,i)perylene	-	<u></u>	%86			
Sum of reported PAHs	l	1	ŀ	-		
2-FBP (Surr @ 250ug/l)	ŀ	82%	75%	78%		
TP-d14 (Surr @ 250ug/l)	ŀ	83%	%08	80%		
		•	•			

Results expressed in ug/l unless otherwise specified

Comments:

E007.1: Triple extraction with DCM. Analysis by GC/MS.



E050032 Laboratory Report No:

Douglas Partners

Randwick, Spec and Stable Precinct Lindsay Rockett

Client Reference:

plus cover page

Certificate

Final

Page: 2 of 2

of Analysis

Date: 15/09/10

This report supercedes reports issued on: N/A

ı			Č	Contam 71976.01	76.01
Laboratory Identification		277132	lcs	qw	
Sample Identification	н	BD2/03091	ЭÒ	ЭÒ	
Depth (m) Sampling Date recorded on COC	,	3/9/10	1 1	1 1	
Laboratory Extraction (Preparation) Date Laboratory Analysis Date		9/9/10	9/9/10 10/9/10	9/9/10	
	<b>EQL</b> 0.1	<0.1	94%	<0.1	

Results expressed in ug/l unless otherwise specified

Comments:

E026.1: Analysis by CV-ICP-MS or FIMS following BrCl pre-treatment.



mgt-LabMark Unit 1/8 Leighton Place Asquith NSW 2077

Attention: Ryan Hamilton

Project

Client Reference Received Date

E050032 DOUGLAS\_SY Sep 09, 2010

Client Sample ID			BD2/030910
Sample Matrix			Water
mgt-Labmark Sample No.			10-Se21395
Date Sampled			Sep 03, 2010
Test/Reference	PQL	Unit	
Metals (7) filtered			
Arsenic (filtered)	0.005	mg/L	< 0.005
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.005	mg/L	< 0.005
Copper (filtered)	0.005	mg/L	< 0.005
Lead (filtered)	0.005	mg/L	< 0.005
Nickel (filtered)	0.005	mg/L	< 0.005
Zinc (filtered)	0.005	mg/L	0.009

# Certificate of Analysis



NATA Accredited Laboratory Number 1645

The tests covered by this document have been performed in accordance with NATA and ISO/IES 17025 and are traceable to national standards of measurement.

This document shall not be reproduced, except in full.



# Sample History

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

Description
Metals (7) filtered
- Method: LM-LTM-MET-3100

Testing Site Clayton Extracted Sep 09, 2010 Analysed Sep 10, 2010



### mgt-Labmark Internal Quality Control Review 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. Result are uncorrected for matrix spikes or surrogate recoveries.
- 5. SVOC analysis on water are performed on homogenized, unfiltered sample, 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 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

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, suitability qualified results may still be reported.

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

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

### UNITS

mg/kg:milligrams per Kilogram

mg/l:milligrams per litre

ug/l: micrograms per litre ppb: Parts per billion

ppm: Parts per million %: Percentage

org/100ml; Organisms per 100 millilitres

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 RPD:

Addition of the analyte to the sample and reported as percentage recovery.

LCS:

Relative Percent Difference between two Duplicate pieces of analysis. 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.

A second piece of analysis from the same sample and reported in the same units as the result to show comparison. Batch Dupilicate: 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

# 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 LOR: RPD must lie between 0-50%

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

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

## OC 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.
- 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 a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- 3. Organochlorine Pesticide analysis where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- 4. Orgaonchlorine Pesticide analysis where reporting Spike data, Toxaphene 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. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- 7. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
- 8. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
- 9. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two two sets of data below the LOR with a positive RPD
- eg: LOR 0.1, Result A = <0.1 (raw data is 0.02) & Result B = <0.1 (raw data is 0.03) resulting in a RPD of 40% calculated from the raw data.

First Reported: Sen 13, 2010



# **Quality Control Results**

Sample, Test, Résult Reference	Units	Result 1			Acceptance Limits	Limits	Qualifying Codes
Method Blank			THE PARTY	學問題等。分解	<b>"我们是这个意思</b>	<b>的重要</b> 当	
Metals (7) filtered LM-LTM-MET-3100							
Arsenic (filtered)	mg/L	< 0.005			0.005	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.005			0.005	Pass	
Copper (filtered)	mg/L	< 0.005			0.005	Pass	
Lead (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery	est <sup>1</sup> /	1111	医闭锁套护环门			V.	
Metals (7) filtered LM-LTM-MET-3100		Result 1					
Arsenic (filtered)	%	95			70-130	Pass	
Cadmium (filtered)	%	98			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Copper (filtered)	%	95			70-130	Pass	
Lead (filtered)	%	94			70-130	Pass	
Nickel (filtered)	%	94			70-130	Pass	
Zinc (filtered)	%	94			70-130	Pass	
[Duplicate of 10-Se21423 - BATCH]				III 10 X		A COLUMN TO SERVICE STATE OF THE SERVICE STATE OF T	
Metals (7) filtered		Result 1	Result 2	RPD			
Arsenic (filtered)	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium (filtered)	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper (filtered)	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead (filtered)	mg/L	< 0.005	< 0.005	<1	30%	Pass	1
Nickel (filtered)	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	mg/L	0.013	0.013	1.0	30%	Pass	
[Spike of 10-Se21395] - % Recovery	. 35					17.20	X X
Metals (7) filtered		Result 1	1				
Arsenic (filtered)	%	98			70 - 130	Pass	
Cadmium (filtered)	%	107			70 - 130	Pass	
Chromium (filtered)	%	95			70 - 130	Pass	
Copper (filtered)	%	98			70 - 130	Pass	
Lead (filtered)	%	98			70 - 130	Pass	
Nickel (filtered)	%	97			70 - 130	Pass	
Zinc (filtered)	%	106			70 - 130	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

Organic samples had Teflon liners
Samples received with Zero Headspace
Samples received within HoldingTime
Some samples have been subcontracted

# Authorised By

Glenn Jackson NATA Signatory

Final report - this Report replaces any previously issued Report

- Indicates Not Requested
- \* Indicates NATA accreditation does not cover the performance of this service

mgt-Labmark shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall mgt-Labmark be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced oxcept in full and relates only to the Items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Yes

Yes

No

Report Number: 276075-W



Report Date: 7/09/2010 Report Time: 3:21:07PM

Sample Receipt



Quality, Service, Support

Notice (SRN) for E050032

Client Address: 96 Hermitage Road West Ryde NSW 2114  Project Name: Randwick, Spec and Stable Precinct Contam Project Number: 71976.01  CoC Serial Number: - Not provided - Purchase Order: - Not provided - No surcharge applied (results by 6:30pm on due date)  Laboratory Address: Unit 1, 8 Leighton Pl. Asquith NSW 2077  Phone: 61 2 9476 6533  Fax: 61 2 9476 8219  Sample Receipt Contact: Leanne Knowles  Email: leanne,knowles@labmark.com.au Reporting Contact: Leanne Knowles		Client Details	Laboratory	Reference Information
Contact Name: Lindsay Rockett Contact Email: rockettl@douglaspartners.com.au  Client Address: 96 Hermitage Road West Ryde NSW 2114  Project Name: Randwick, Spec and Stable Precinct Contam Project Number: 71976.01  CoC Serial Number: - Not provided - Purchase Order: - Not provided - Surcharge: No surcharge applied (results by 6:30pm on due date)  Sample Matrix: WATER  Date Sampled (earliest date): 03/09/2010 Date Sample Receipt Notice issued: 07/09/2010 Date Sample Receipt Notice issued: 07/09/2010 Date Preliminary Report Due: 16/09/2010  Date Preliminary Report Due: 16/09/2010  Laboratory Report: - Not provided, standard prices application - Not provided - Sample Receipt Not provided - Sample Receipt Contact: Leanne Knowles Email: Reporting Contact: Leanne Knowles Leann	- •	_		
Project Number: 71976.01  CoC Serial Number: - Not provided - Purchase Order: - Not provided - No surcharge applied (results by 6:30pm on due date)  Sample Matrix: WATER  Date Sampled (earliest date): 03/09/2010  Date Sample Receipt Notice issued: 07/09/2010  Date Preliminary Report Due: 16/09/2010  Fax: 61 2 9476 8219  Sample Receipt Contact: Leanne Knowles Email: leanne.knowles@labmark.com.au  Reporting Contact: Leanne Knowles@labmark.com.au  NATA Accreditation: 13542  AQIS Approval: NO356 (Sydney)  AQIS Entry Permit: 200521534 (Sydney)	Contact Name: Contact Email:	Lindsay Rockett rockettl@douglaspartners.com.au 96 Hermitage Road	Quotation Number:	<ul> <li>Not provided, standard prices apply Unit 1, 8 Leighton Pl.</li> </ul>
Date Sampled (earliest date): 03/09/2010 NATA Accreditation: 13542  Date Samples Received: 07/09/2010 AQIS Approval: NO356 (Sydney)  Date Sample Receipt Notice issued: 07/09/2010 AQIS Entry Permit: 200521534 (Sydney)  Date Preliminary Report Due: 16/09/2010	Project Number: CoC Serial Number Purchase Order: Surcharge:	71976.01 er: - Not provided - - Not provided - No surcharge applied (results by 6:30pm on due date)	Fax: Sample Receipt Contact Email: Reporting Contact:	61 2 9476 8219 ct: Leanne Knowles leanne.knowles@labmark.com.au
Reporting Requirements: Electronic Data Download required: No Invoice Number: 10EA11362	Date Sampled (ea Date Samples Re Date Sample Rec Date Preliminary	rliest date): 03/09/2010 ceived: 07/09/2010 cipt Notice issued: 07/09/2010 Report Due: 16/09/2010	AQIS Approval: AQIS Entry Permit:	NO356 (Sydney) 200521534 (Sydney)

Sample Condition:

COC received with samples. Report number and lab ID's defined on COC.

Samples received in good order.

Samples received with cooling media: Ice bricks .

Samples received chilled. Security seals not used .

Sample container & chemical preservation suitable.

Comments:

Metals - As, Cd, Cr, Cu, Pb, Ni, Zn (Dissolved to reflect sample preservation) by MGT Labmark

Melbourne - results may be delayed

**Holding Times:** 

Date received allows for sufficient time to meet Technical Holding Times.

Preservation:

Chemical preservation of samples satisfactory for requested analytes.

# Important Notes:

MGT LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of \$1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur \$5.00/ sample/ 3 months. Additional refrigerated storage shall incur \$30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from MGT LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

# Analysis comments:

# Subcontracted Analyses:

Reported by MGT LabMark Environmental Melbourne, NATA accreditation No. 1645.



Report Date: 7/09/2010 Report Time: 3:21:07PM

Sample

# Receipt



Quality, Service, Support

Notice (SRN) for E050032

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request (refer to SRN comments section on first page for external subcontracting method details). Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE	**						Re	quest	ted A	nalys	is			 	
No. Date Depth Client Sample ID	Filtered mercury	Filtered metals (M7)	Polyaromatic Hydrocarbons (PAH)	PREP Not Reported	External Analysis by MGT LabMark										
<b>277132 03/09</b> BD2/030910	•	•	•	•	•										L
Totals:	1	1	1	1	1										

<sup>&#</sup>x27;PREP Not Reported' refers to an internal laboratory instruction - client confirmation of this parameter is not required.



Report Date: 7/09/2010

Report Time: 3:21:07PM

Sample Receipt



Quality, Service, Support

Notice (SRN) for E050032

		Requested Analysis
No. Date Depth	Client Sample ID	M8 - M7-F_W
277132 03/09	BD2/030910	
	Totals:	



Project Name: Randwick, Spec and Stable Precinct Contam Assessment ...

Unit 16, Maddox Street, Alexandria

To: SGS Australia Pty Ltd

					-		ž	 	 	 				
	Notes				-> INGRIAB	SAMPLE . PUERSE	FORWARD TO LABORARK				(02) 9809 0666	(02) 9809 4095	Date & Time:	Date & Time: 7/3/10 1500
tes	OCPs/ OPPs/ PCBs PAH Phenois VOCs OSGB ON BOCS OSGB ON BOCS	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	<u> </u>					,		Phone: (02	Fax:	Wrr -Received By:	Received By:
Analytes	Cd Cr Cu Pb Hg Ni Zn FPH	7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7 7 7	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7	\$					96 Hermitage Road, West Ryde 2114	2	Date & Time:
Sampl	Container	7	7	7	3/4/10						E050032	Address:	Signed:	Signed:
	Sample Sample Lab ID Depth ID	242	7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	801 / K 09 m	RO210 200 2771238410	(5) (A) (S) (M)	87.04				l ab Report No.	5	Relinquished by: Nizam	

Page of



# ANALYTICAL REPORT

1 September 2010

**Douglas Partners Pty Ltd** 

96 Hermitage Road **WEST RYDE** NSW 2114

Attention:

Nizam Ahamed

Your Reference:

71976-01 - Randwick-Spectator and Stable Precincts

Our Reference:

SE80889

Samples: Received: 54 Soils

25/08/2010

Preliminary Report Sent:

31/08/10

These samples were analysed in accordance with your written instructions.

For and on Behalf of:

SGS ENVIRONMENTAL SERVICES

Sample Receipt:

Angela Mamalicos

AU.SampleReceipt.Sydney@sgs.com

Production Manager:

Huong Crawford

Huong.Crawford@sgs.com

Results Approved and/or Authorised by:

Dong Liang Quality Manager

Ravee Sivasubramaniam

Asbestos Signatory

Organics Signatory

Huong **E**rawford Metals Signatory

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Page 1 of 60

UNITS	SE80889-1	SE80889-2	SE80889-3	SE80889-4	SE80889-5
	BH1/	BH2/	BH2/	BH2/	BH3/
	0.3-0.5	0.3-0.6	0.7-1.0	4.1-4.5	0.3-0.6
••	Soil	Soil	Soil	Soil	Soil
	27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
	27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
%	73	66	71	68	67
	mg/kg mg/kg mg/kg mg/kg		BH1/ 0.3-0.5 Soil  27/08/2010 27/08/2010 27/08/2010 27/08/2010 27/08/2010  27/08/2010  mg/kg <0.1  mg/kg <0.1  mg/kg <0.1  column="2"><0.1  mg/kg <0.1  column="2"><0.1  mg/kg <0.3 <0.3	BH1/ 0.3-0.5 Soil         BH2/ 0.3-0.6 Soil         BH2/ 0.7-1.0 Soil           27/08/2010         27/08/2010         27/08/2010           27/08/2010         27/08/2010         27/08/2010           27/08/2010         27/08/2010         27/08/2010           mg/kg         <0.1	BH1/ 0.3-0.5 Soil         BH2/ 0.3-0.6 Soil         BH2/ 0.7-1.0 Soil         BH2/ 4.1-4.5 Soil           27/08/2010

MBTEX in Soil						
Our Reference:	UNITS	SE80889-6	SE80889-7	SE80889-8	SE80889-9	SE80889-1 0
Your Reference		BH4/ 0.4-0.6	BH5/ 0-0.3	BH5/ 3.4-3.9	BH6/ 0.3-0.6	BH6/ 0.6-1.0
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Benzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	72	64	70	60	69

MBTEX in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-1
		3	4	5	6	7
Your Reference		TP101/	TP102/	TP102/	TP110/	TP110/
		0-0.3	0-0.3	0.4-0.8	0-0.3	0.5-1.0
Sample Matrix		Soil	Soil	Soil	Soil	Şoil
Date Extracted (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Benzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	64	65	61	63	76



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MBTEX in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-2	SE80889-2	SE80889-2
Your Reference		8 TP110/ 1.5-2.0	9 TP109/ 0-0.3	0 TP109/ 0.6-1.1	1 TP108/ 0-0.3	2 TP108/ 0.6-1.1
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Benzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	90	87	76	70	72

MBTEX in Soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-2
Your Reference	***************************************	3 TP107/ 0.4-0.6	4 TP107/ 0.8-1.3	5 TP106/ 0-0.3	6 TP106/ 0.4-1.0	7 TP105/ 0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Benzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	65	66	73	73	67

MBTEX in Soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-3	SE80889-3	SE80889-3
		8	9	0	1	2
Your Reference		TP105/	TP104/	TP104/	TP104/	TP103/
		1-1.5	0-0.2	0.3-0.8	1-1.6	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Benzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	70	62	74	60	71



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MBTEX in Soil					
Our Reference:	UNITS	SE80889-3	SE80889-3	SE80889-5	SE80889-5
Your Reference		3 TP103/ 0.4-0.9	4 TP107/ 0-0.3	TB1/ 200810	3 TB/ 230810
Sample Matrix		Soil	Soil	Soil	Soil
Date Extracted (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (MBTEX)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Benzene	mg/kg	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	76	63	66	81

BTEX in Soil			
Our Reference:	UNITS	SE80889-5	SE80889-5
		2	4
Your Reference		TS/ 200810	TS/ 230810
Sample Matrix		Soil	Soil
Date Extracted (BTEX)	· · · · · · · · · · · · · · · · · · ·	27/08/2010	27/08/2010
Date Analysed (BTEX)		27/08/2010	27/08/2010
Benzene	mg/kg	60%	90%
Toluene	mg/kg	66%	83%
Ethylbenzene	mg/kg	84%	84%
Total Xylenes	mg/kg	84%	86%
BTEX Surrogate (%)	%	70	100

TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-1	SE80889-2	SE80889-3	SE80889-4	SE80889-5
Your Reference		BH1/	BH2/	BH2/	BH2/	BH3/
		0.3-0.5	0.3-0.6	0.7-1.0	4.1-4.5	0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	<50	<50	<50	<50	<50
TRH C29 - C36	mg/kg	<50	<50	<50	<50	<50

TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-6	SE80889-7	SE80889-8	SE80889-9	SE80889-1 0
Your Reference		BH4/	BH5/ 0-0.3	BH5/	BH6/	BH6/
		0.4-0.6		3.4-3.9	0.3-0.6	0.6-1.0
Sample Matrix	220222222	Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	<50	<50	<50	<50	<50
TRH C29 - C36	mg/kg	<50	<50	<50	<50	<50

TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-1
		1	2	3	4	5
Your Reference		BD1/	BD3/	TP101/	TP102/	TP102/
		200810	200810	0-0.3	0-0.3	0.4-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	<50	<50	120	61	<50
TRH C29 - C36	mg/kg	<50	<50	62	<50	<50



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TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-2
		6	7	8	9	0
Your Reference		TP110/	TP110/	TP110/	TP109/	TP109/
		0-0.3	0.5-1.0	1.5-2.0	0-0.3	0.6-1.1
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	<50	<50	62	160	460
TRH C29 - C36	mg/kg	57	<50	<50	140	370

TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-2
		1	2	3	4	5
Your Reference		TP108/	TP108/	TP107/	TP107/	TP106/
		0-0.3	0.6-1.1	0.4-0.6	0.8-1.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	<50	79	<50	<50	<50
TRH C29 - C36	mg/kg	<50	<50	<50	<50	<50

TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-3
		6	7	8	9	0
Your Reference		TP106/	TP105/	TP105/	TP104/	TP104/
		0.4-1.0	0.3-0.6	1-1.5	0-0.2	0.3-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH Ca - Ca P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	150	<50	<50	<50	<50
TRH C29 - C36	mg/kg	85	<50	<50	<50	<50



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TRH in soil with C6-C9 by P/T						
Our Reference:	UNITS	SE80889-3	SE80889-3	SE80889-3	SE80889-3	SE80889-5
		1	2	3	4	1
Your Reference		TP104/	TP103/	TP103/	TP107/	TB1/
		1-1.6	0-0.3	0.4-0.9	0-0.3	200810
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20	<20	<20
Date Extracted (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
TRH C10 - C14	mg/kg	<20	<20	<20	<20	<20
TRH C15 - C28	mg/kg	<50	<50	<50	<50	<50
TRH C29 - C36	mg/kg	<50	<50	<50	<50	<50

TRH in soil with C6-C9 by P/T		
Our Reference:	UNITS	SE80889-5
		3
Your Reference		TB/ 230810
Sample Matrix		Soil
Date Extracted (TRH C6-C9 PT)		27/08/2010
Date Analysed (TRH C6-C9 PT)		27/08/2010
TRH C6 - C9 P&T	mg/kg	<20
Date Extracted (TRH C10-C36)		27/08/2010
Date Analysed (TRH C10-C36)		27/08/2010
TRH C10 - C14	mg/kg	<20
TRH C15 - C28	mg/kg	<50
TRH C29 - C36	mg/kg	<50



PAHs in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-2	SE80889-3	SE80889-4	SE80889-
Your Reference	**********	BH1/	BH2/	BH2/	BH2/	BH3/
		0.3-0.5	0.3-0.6	0.7-1.0	4.1-4.5	0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/201
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/201
Naphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
2-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	mg/kg	<0.10	0.10	<0.10	<0.10	0.10
Pyrene	mg/kg	<0.10	0.10	<0.10	<0.10	0.10
Benzo[a]anthracene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo[b,k]fluoranthene	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo[a]pyrene	mg/kg	<0.05	0.07	<0.05	<0.05	0.07
Indeno[123-cd]pyrene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Dibenzo[ah]anthracene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo[ghi]perylene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Total PAHs (sum)	mg/kg	<1.7	<1.77	<1.7	<1.7	<1.77
Nitrobenzene-d5	%	94	93	93	90	92
2-Fluorobiphenyl	%	94	92	89	88	92
p -Terphenyl-d14	%	76	87	84	86	64

PAHs in Soil						
Our Reference:	UNITS	SE80889-6	SE80889-7	SE80889-8	SE80889-9	SE80889-1 0
Your Reference		BH4/ 0.4-0.6	BH5/ 0-0.3	BH5/ 3.4-3.9	BH6/ 0.3-0.6	BH6/ 0.6-1.0
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Naphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
2-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	mg/kg	<0.10	0.34	<0.10	<0.10	<0.10
Anthracene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	mg/kg	<0.10	0.50	<0.10	<0.10	<0.10
Pyrene	mg/kg	<0.10	0.54	<0.10	0.11	<0.10
Benzo[a]anthracene	mg/kg	<0.10	0.34	<0.10	<0.10	<0.10
Chrysene	mg/kg	<0.10	0.28	<0.10	<0.10	<0.10
Benzo[b,k]fluoranthene	mg/kg	<0.20	0.52	<0.20	<0.20	<0.20
Benzo[a]pyrene	mg/kg	<0.05	0.30	<0.05	0.10	<0.05
Indeno[123-cd]pyrene	mg/kg	<0.10	0.15	<0.10	<0.10	<0.10
Dibenzo[ah]anthracene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo[ghi]perylene	mg/kg	<0.10	0.13	<0.10	<0.10	<0.10
Total PAHs (sum)	mg/kg	<1.7	<3.90	<1.7	<1.81	<1.7
Nitrobenzene-d5	%	92	92	83	90	96
2-Fluorobiphenyl	%	94	92	80	90	92
p -Terphenyl-d14	%	74	72	80	72	87

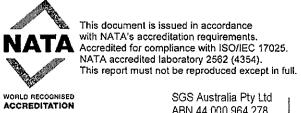
PAHs in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-1
		3	4	5	6	7
Your Reference		TP101/	TP102/	TP102/	TP110/	TP110/ 0.5-1.0
Comple Matrix		0-0.3 Soil	0-0.3 Soil	0.4-0.8 Soil	0-0.3 Soil	0.5-1.0 Soil
Sample Matrix		3011	3011	3011	3011	3011
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Naphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
2-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	mg/kg	0.43	0.23	<0.10	<0.10	<0.10
Acenaphthene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	mg/kg	0.19	0.11	<0.10	<0.10	<0.10
Phenanthrene	mg/kg	4.6	2.0	0.33	<0.10	0.32
Anthracene	mg/kg	0.93	0.43	0.11	<0.10	<0.10
Fluoranthene	mg/kg	8.2	2.5	1.1	0.59	1.1
Pyrene	mg/kg	8.4	1.9	1.1	0.64	1.2
Benzo[a]anthracene	mg/kg	5.0	1.2	0.62	0.34	0.79
Chrysene	mg/kg	3.5	1.0	0.54	0.32	0.71
Benzo[b,k]fluoranthene	mg/kg	5.7	1.6	1.1	0.74	1.5
Benzo[a]pyrene	mg/kg	3.6	1.0	0.66	0.43	0.87
Indeno[123-cd]pyrene	mg/kg	1.5	0.47	0.34	0.25	0.54
Dibenzo[ah]anthracene	mg/kg	0.30	<0.10	<0.10	<0.10	0.11
Benzo[ghi]perylene	mg/kg	1.2	0.39	0.46	0.23	0.46
Total PAHs (sum)	mg/kg	<44.04	<13.44	<7.14	<4.44	<8.35
Nitrobenzene-d5	%	106	88	89	96	96
2-Fluorobiphenyl	%	106	90	87	96	90
ρ -Terphenyl-d14	%	88	62	82	72	82

PAHs in Soil					· ·	
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-2	SE80889-2	SE80889-2
V 5.		8	9	0	1	2
Your Reference		TP110/ 1.5-2.0	TP109/ 0-0.3	TP109/ 0.6-1.1	TP108/ 0-0.3	TP108/ 0.6-1.1
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Naphthalene	mg/kg	<0.10	0.17	0.12	<0.10	0.15
2-Methylnaphthalene	mg/kg	<0.10	0.12	<0.10	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	0.13	<0.10	<0.10	<0.10
Acenaphthylene	mg/kg	0.29	0.95	1.4	<0.10	1.2
Acenaphthene	mg/kg	<0.10	<0.10	0.20	<0.10	<0.10
Fluorene	mg/kg	<0.10	0.47	0.39	<0.10	0.19
Phenanthrene	mg/kg	0.65	4.0	5.9	0.61	3.0
Anthracene	mg/kg	0.34	1.2	2.2	0.14	0.97
Fluoranthene	mg/kg	2.6	6.0	17	1.2	7.2
Pyrene	mg/kg	2.8	5.6	17	1.2	6.7
Benzo(a)anthracene	mg/kg	1.7	3.2	13	0.64	4.2
Chrysene	mg/kg	1.6	2.6	10	0.43	3.3
Benzo[ <i>b,k</i> ]fluoranthene	mg/kg	3.7	5.6	18	0.79	7.2
Benzo[a]pyrene	mg/kg	2.3	3.1	11	0.40	4.1
Indeno[123-cd]pyrene	mg/kg	1.4	2.0	6.4	0.19	2.5
Dibenzo[ah]anthracene	mg/kg	0.24	0.37	1.6	<0.10	0.63
Benzo[ <i>ghi</i> ]perylene	mg/kg	2.0	2.4	7.8	0.14	2.8
Total PAHs (sum)	mg/kg	<20.06	<38.08	<112.34	<6.47	<44.37
Nitrobenzene-d5	%	89	87	94	90	90
2-Fluorobiphenyl	%	88	85	91	92	87
p -Terphenyl-d14	%	85	82	85	80	85

PAHs in Soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-2
v		3	4	5	6	7
Your Reference		TP107/ 0.4-0.6	TP107/ 0.8-1.3	TP106/ 0-0.3	TP106/ 0.4-1.0	TP105/ 0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Naphthalene	mg/kg	0.10	<0.10	<0.10	0.27	<0.10
2-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Acenaphthylene	mg/kg	0.26	<0.10	<0.10	1.8	<0.10
Acenaphthene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	mg/kg	0.24	<0.10	<0.10	0.53	<0.10
Phenanthrene	mg/kg	2.5	<0.10	0.23	6,2	<0.10
Anthracene	mg/kg	0.54	<0.10	<0.10	1.9	<0.10
Fluoranthene	mg/kg	2.6	<0.10	0.56	12	<0.10
Pyrene	mg/kg	2.4	<0.10	0.55	11	<0.10
Benzo[a]anthracene	mg/kg	1.2	<0.10	0.32	6.1	<0.10
Chrysene	mg/kg	0.88	<0.10	0.29	4.6	<0.10
Benzo[b,k]fluoranthene	mg/kg	1.2	<0.20	0.42	10	<0.20
Benzo[a]pyrene	mg/kg	0.60	<0.05	0.18	5.9	<0.05
Indeno[123-cd]pyrene	mg/kg	0.23	<0.10	<0.10	3.4	<0.10
Dibenzo[ah]anthracene	mg/kg	<0.10	<0.10	<0.10	0.82	<0.10
Benzo[ghi]perylene	mg/kg	0.16	<0.10	<0.10	3.8	<0.10
Total PAHs (sum)	mg/kg	<13.21	<1.7	<3.55	<68.14	<1.7
Nitrobenzene-d5	%	94	100	94	88	90
2-Fluorobiphenyl	%	88	95	88	88	96
p -Terphenyl-d14	%	74	92	78	85	76

PAHs in Soil						
Our Reference:	UNITS	SE80889-2 8	SE80889-2 9	SE80889-3 0	SE80889-3 1	SE80889-3 2
Your Reference		TP105/ 1-1.5	TP104/ 0-0.2	TP104/ 0.3-0.8	TP104/ 1-1.6	TP103/ 0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Naphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
2-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Аселарhthylene	mg/kg	<0.10	0.21	<0.10	<0.10	<0.10
Acenaphthene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene	mg/kg	<0.10	1.2	0.10	<0.10	0.15
Anthracene	mg/kg	<0.10	0.36	<0.10	<0.10	<0.10
Fluoranthene	mg/kg	<0.10	2.2	0.30	<0.10	<0.10
Pyrene	mg/kg	<0.10	2.4	0.31	<0.10	<0.10
Benzo[a]anthracene	mg/kg	<0.10	1.2	0.17	<0.10	<0.10
Chrysene	mg/kg	<0.10	1.1	0.16	<0.10	<0.10
Benzo[b,k]fluoranthene	mg/kg	<0.20	2.0	0.41	<0.20	<0.20
Benzo[a]pyrene	mg/kg	<0.05	1.2	0.21	<0.05	0.05
Indeno[123-cd]pyrene	mg/kg	<0.10	0.57	0.13	<0.10	<0.10
Dibenzo[ah]anthracene	mg/kg	<0.10	0.11	<0.10	<0.10	<0.10
Benzo[ <i>ghi</i> ]perylene	mg/kg	<0.10	0.48	0.18	<0.10	<0.10
Total PAHs (sum)	mg/kg	<1.7	<13.54	<2.77	<1.7	<1.80
Nitrobenzene-d5	%	99	92	98	94	94
2-Fluorobiphenyl	%	97	98	95	91	100
p -Terphenyl-d14	%	89	70	87	84	74

PAHs in Soil			
Our Reference:	UNITS	SE80889-3 3	SE80889-3 4
Your Reference		TP103/ 0.4-0.9	TP107/ 0-0.3
Sample Matrix		Soil	Soil
Date Extracted		27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010
Naphthalene	mg/kg	<0.10	<0.10
2-Methylnaphthalene	mg/kg	<0.10	<0.10
1-Methylnaphthalene	mg/kg	<0.10	<0.10
Acenaphthylene	mg/kg	<0.10	<0.10
Acenaphthene	mg/kg	<0.10	<0.10
Fluorene	mg/kg	<0.10	<0.10
Phenanthrene	mg/kg	<0.10	<0.10
Anthracene	mg/kg	<0.10	<0.10
Fluoranthene	mg/kg	<0.10	<0.10
Pyrene	mg/kg	<0.10	<0.10
Benzo[a]anthracene	mg/kg	<0.10	<0.10
Chrysene	mg/kg	<0.10	<0.10
Benzo[b,k]fluoranthene	mg/kg	<0.20	<0.20
Benzo[a]pyrene	mg/kg	<0.05	0.05
Indeno[123-cd]pyrene	mg/kg	<0.10	<0.10
Dibenzo[ah]anthracene	mg/kg	<0.10	<0.10
Benzo[ghi]perylene	mg/kg	<0.10	<0.10
Total PAHs (sum)	mg/kg	<1.7	<1.7
Nitrobenzene-d5	%	93	90
2-Fluorobiphenyl	%	89	96
p -Terphenyl-d14	%	85	70



REPORT NO: SE80889

OC Pesticides in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-5	SE80889-6	SE80889-7	SE80889-9
Your Reference		BH1/	BH3/	BH4/	BH5/ 0-0.3	BH6/ 0.3-0.6
Comula Matrix		0.3-0.5	0.3-0.6	0.4-0.6	Cail	0.3-0.6 Soil
Sample Matrix		Soil	Soil	Soil	Soil	3011
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/201
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/201
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC (Lindane)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	· <0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Chlordane (gamma)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
cis-Chlordane (alpha)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
. Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5,6-Tetrachloro-m-xylene (Surrogate	%	101	99	100	102	85



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OC Pesticides in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-2
Varia Defenses		3	4 TD4004	6 TD4404	7	1
Your Reference		TP101/ 0-0.3	TP102/ 0-0.3	TP110/ 0-0.3	TP110/ 0.5-1.0	TP108/ 0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
НСВ	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC (Lindane)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Chlordane (gamma)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
cis-Chlordane (alpha)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
ρ,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5,6-Tetrachloro-m-xylene (Surrogate	%	106	109	107	109	106



OC Pesticides in Soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-3
Your Reference		3 TP107/	5 TP106/	7 TP105/	9 TP104/	2 TP103/
rour Neierence		0.4-0.6	0-0.3	0.3-0.6	0-0.2	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/201
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/201
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC (Lindane)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Chlordane (gamma)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
cis-Chlordane (alpha)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
o,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
p,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
ρ,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,5,6-Tetrachloro-m-xylene (Surrogate	%	101	88	97	97	99



OC Pesticides in Soil Our Reference:	UNITS	SE80889-3
Our Reference:	UNIIS	י יינטעעוועטנויי
		4
Your Reference	*******	TP107/
Tour Noteronie		0-0.3
Sample Matrix		Soil
Date Extracted		27/08/2010
Date Analysed		27/08/2010
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC (Lindane)	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
Aldrin	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
o,p-DDE	mg/kg	<0.1
alpha-Endosulfan	mg/kg	<0.1
trans-Chlordane (gamma)	mg/kg	<0.1
cis-Chlordane (alpha)	mg/kg	<0.1
trans-Nonachlor	mg/kg	<0.1
ρ,ρ-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
o,p-DDD	mg/kg	<0.1
o,p-DDT	mg/kg	<0.1
beta-Endosulfan	mg/kg	<0.1
p,p-DDD	mg/kg	<0.1
p,p-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Endrin Ketone	mg/kg	<0.1
2,4,5,6-Tetrachloro-m-xylene (Surrogate	%	104



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REPORT NO: SE80889

OP Pesticides in Soil by GCMS						
Our Reference:	UNITS	SE80889-1	SE80889-5	SE80889-6	SE80889-7	SE80889-9
Your Reference		BH1/	BH3/	BH4/	BH5/ 0-0.3	BH6/
		0.3-0.5	0.3-0.6	0.4-0.6		0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Dichlorvos	mg/kg	<1	<1	<1	<1	<1
Dimethoate	mg/kg	<1	<1	<1	<1	<1
Diazinon	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorpyrifos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Bromofos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
2-fluorobiphenyl (Surr)	%	94	92	94	92	90
d14-p-Terphenyl (Surr)	%	76	64	74	72	72

OP Pesticides in Soil by GCMS						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-2
		3	4	6	7	1
Your Reference		TP101/	TP102/	TP110/	TP110/	TP108/
0		0-0.3	0-0.3	0-0.3	0.5-1.0	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Dichlorvos	mg/kg	<1	<1	<1	<1	<1
Dimethoate	mg/kg	<1	<1	<1	<1	<1
Diazinon	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorpyrifos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Bromofos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
2-fluorobiphenyl (Surr)	%	106	90	96	90	92
d14-p-Terphenyl (Surr)	%	88	62	72	82	80



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OP Pesticides in Soil by GCMS						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-3
		3	5	7	9	2
Your Reference		TP107/	TP106/	TP105/	TP104/	TP103/
		0.4-0.6	0-0.3	0.3-0.6	0-0.2	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Dichlorvos	mg/kg	<1	<1	<1	<1	<1
Dimethoate	mg/kg	<1	<1	<1	<1	<1
Diazinon	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorpyrifos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Bromofos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
2-fluorobiphenyl (Surr)	%	88	88	96	98	100
d14-p-Terphenyl (Surr)	%	74	78	76	70	74

OP Pesticides in Soil by GCMS		
Our Reference:	UNITS	SE80889-3
		4
Your Reference		TP107/ 0-0.3
Sample Matrix		Soil
THE PROPERTY OF THE PROPERTY O		
Date Extracted		27/08/2010
Date Analysed		27/08/2010
Dichlorvos	mg/kg	<1
Dimethoate	mg/kg	<1
Diazinon	mg/kg	<0.5
Fenitrothion	mg/kg	<0.2
Malathion	mg/kg	<0.20
Chlorpyrifos-ethyl	mg/kg	<0.2
Parathion-ethyl	mg/kg	<0.2
Bromofos-ethyl	mg/kg	<0.2
Methidathion	mg/kg	<0.5
Ethion	mg/kg	<0.2
Azinphos-methyl	mg/kg	<0.20
2-fluorobiphenyl (Surr)	%	96
d14-p-Terphenyl (Surr)	%	70



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PCBs in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-5	SE80889-6	SE80889-7	SE80889-9
Your Reference		BH1/	BH3/	BH4/	BH5/ 0-0.3	BH6/
		0.3-0.5	0.3-0.6	0.4-0.6		0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1262	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1268	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive PCB	mg/kg	<0.90	<0.90	<0.90	<0.90	<0.90
PCB_Surrogate 1	%	101	99	100	102	85

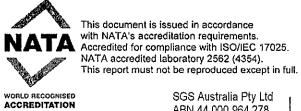
PCBs in Soil				U. 11/1		
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-2
		3	4	6	7	1
Your Reference		TP101/	TP102/	TP110/	TP110/	TP108/
		0-0.3	0-0.3	0-0.3	0.5-1.0	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1262	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1268	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive PCB	mg/kg	<0.90	<0.90	<0.90	<0.90	<0.90
PCB_Surrogate 1	%	106	109	107	109	106



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PCBs in Soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-3
		3	5	7	9	2
Your Reference		TP107/	TP106/	TP105/	TP104/	TP103/
		0.4-0.6	0-0.3	0.3-0.6	0-0.2	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1262	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1268	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive PCB	mg/kg	<0.90	<0.90	<0.90	<0.90	<0.90
PCB_Surrogate 1	%	101	88	97	97	99

PCBs in Soil		
Our Reference:	UNITS	·SE80889-3
		4
Your Reference		TP107/
		0-0.3
Sample Matrix		Soil
Date Extracted		27/08/2010
Date Analysed		27/08/2010
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochior 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Arochlor 1262	mg/kg	<0.1
Arochlor 1268	mg/kg	<0.1
Total Positive PCB	mg/kg	<0.90
PCB_Surrogate 1	%	104



Total Phenolics in Soil Our Reference:	UNITS	SE80889-1	SE80889-5	SE80889-6	SE80889-9	SE80889-1
Your Reference		BH1/ 0.3-0.5	BH3/ 0.3-0.6	BH4/ 0.4-0.6	BH6/ 0.3-0.6	TP101/ 0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Phenols)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Phenols)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Total Phenolics (as Phenol)	mg/kg	<0.1	<0.1	<0.1	<0.1	0.6

Total Phenolics in Soil						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-2	SE80889-2
		4	6	7	1	3
Your Reference		TP102/	TP110/	TP110/	TP108/	TP107/
		0-0.3	0-0.3	0.5-1.0	0-0.3	0.4-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Phenols)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Phenols)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Total Phenolics (as Phenol)	mg/kg	<0.1	0.4	0.8	0.7	<0.1

Total Phenolics in Soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-3	SE80889-3
		5	7	9	2	4
Your Reference		TP106/	TP105/	TP104/	TP103/	TP107/
		0-0.3	0.3-0.6	0-0.2	0-0.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Phenols)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Phenols)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Total Phenolics (as Phenol)	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1

Inorganics Our Reference:	UNITS	SE80889-2	SE80889-3	SE80889-7	SE80889-8	SE80889-3 6
Your Reference		BH2/ 0.3-0.6	BH2/ 0.7-1.0	BH5/ 0-0.3	BH5/ 3.4-3.9	BH2/ 1.1-1.5
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted- (pH 1:5 soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (pH 1:5 Soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
pH 1:5 soil:water	pH Units	9.1	7.0	7.2	5.5	6.5
Date Extracted (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Electrical Conductivity 1:5 soil:water	μS/cm	97	13	15	14	13

Inorganics						
Our Reference:	UNITS	SE80889-3	SE80889-3	SE80889-3	SE80889-4	SE80889-4
		7	8	9	0	1
Your Reference		BH2/	BH2/	BH2/	BH2/	BH2/
		1.6-2.0	2.1-2.5	2.6-3.0	3.1-3.5	3.6-4.0
Sample Matrix		Soil	Şoil	Soil	Soil	Soil
Date Extracted- (pH 1:5 soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (pH 1:5 Soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
pH 1:5 soil:water	pH Units	7.0	7.9	7.1	7.4	7.3
Date Extracted (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Electrical Conductivity 1:5 soil:water	µS/cm	18	27	77	40	38

Inorganics						
Our Reference:	UNITS	SE80889-4	SE80889-4	SE80889-4	SE80889-4	SE80889-4
		2	3	4	5	6
Your Reference		BH2/	BH2/	BH5/	BH5/	BH5/
		5.1-5.5	4.6-5.0	0.6-1.0	1.1-1.5	1.6-2.0
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted- (pH 1:5 soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (pH 1:5 Soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
pH 1:5 soil:water	pH Units	6.5	6.4	6.7	6.4	6.1
Date Extracted (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Electrical Conductivity 1:5 soil:water	μS/cm	23	26	6.0	7.2	5.5



Inorganics					
Our Reference:	UNITS	SE80889-4	SE80889-4	SE80889-4	SE80889-5
Your Reference		7 BH5/ 2.1-2.5	8 BH5/ 2.6-3.0	9 BH5/ 4-4.5	0 BH5/ 5.5-6.0
Sample Matrix		Soil	Soil	Soil	Soil
Date Extracted- (pH 1:5 soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (pH 1:5 Soil: Water)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
pH 1:5 soil:water	pH Units	6.0	6.1	5.3	6.5
Date Extracted (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Conductivity)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Electrical Conductivity 1:5 soil:water	μS/cm	10	9.3	21	30

Metals in Soil by ICP-OES						
Our Reference:	UNITS	SE80889-1	SE80889-2	SE80889-3	SE80889-4	SE80889-5
Your Reference		BH1/	BH2/	BH2/	BH2/	BH3/
		0.3-0.5	0.3-0.6	0.7-1.0	4.1-4.5	0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Metals)	****	27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	<3	<3	<3	<3	<3
Cadmium	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	2.7	3.8	<0.3	1.4	5.3
Copper	mg/kg	2.7	50	3.3	1.3	6.9
Lead	mg/kg	5	280	<1	<1	75
Nickel	mg/kg	1.2	1.5	<0.5	1.4	2.7
Zinc	mg/kg	16	92	15	3.3	33

Metals in Soil by ICP-OES						
Our Reference:	UNITS	SE80889-6	SE80889-7	SE80889-8	SE80889-9	SE80889-1 0
Your Reference		BH4/ 0.4-0.6	BH5/ 0-0.3	BH5/ 3.4-3.9	BH6/ 0.3-0.6	BH6/ 0.6-1.0
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	<3	<3	<3	<3	<3
Cadmium	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	<0.3	1.1	1.1	3.9	<0.3
Copper	mg/kg	0.6	9.8	<0.5	5.2	1.3
Lead	mg/kg	<1	26	<1	8	<1
Nickel	mg/kg	<0.5	0.7	<0.5	1.3	<0.5
Zinc	mg/kg	0.91	9.1	0.6	8.9	2.0



Metals in Soil by ICP-OES						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-1
		1	2	3	4	5
Your Reference		BD1/	BD3/	TP101/	TP102/	TP102/
		200810	200810	0-0.3	0-0.3	0.4-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	<3	<3	4	<3	<3
Cadmium	mg/kg	<0.3	<0.3	0.4	<0.3	<0.3
Chromium	mg/kg	1.8	<0.3	11	8.1	7.3
Copper	mg/kg	34	1.3	33	74	18
Lead	mg/kg	73	<1	69	71	120
Nickel	mg/kg	<0.5	<0.5	5.2	7.5	1.4
Zinc	mg/kg	58	2.2	75	83	94

Metals in Soil by ICP-OES						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-2
		6	7	8	9	0
Your Reference		TP110/	TP110/	TP110/	TP109/	TP109/
		0-0.3	0.5-1.0	1.5-2.0	0-0.3	0.6-1.1
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	<3	4	4	8	5
Cadmium	mg/kg	<0.3	0.4	0.4	2.5	0.9
Chromium	mg/kg	4.5	5.4	5.0	19	7.3
Copper	mg/kg	26	19	28	180	76
Lead	mg/kg	110	62	140	1,500	300
Nickel	mg/kg	7.4	10	14	19	6.8
Zinc	mg/kg	98	78	170	1,100	390



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Metals in Soil by ICP-OES						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-2
		1	2	3	4	5
Your Reference		TP108/	TP108/	TP107/	TP107/	TP106/
		0-0.3	0.6-1.1	0.4-0.6	0.8-1.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	<3	4	<3	<3	<3
Cadmium	mg/kg	0.4	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	4.7	11	4.6	<0.3	6.6
Copper	mg/kg	23	59	25	1.2	33
Lead	mg/kg	72	120	41	2	47
Nickel	mg/kg	15	3.1	13	<0.5	22
Zinc	mg/kg	120	120	39	1.7	75

Metals in Soil by ICP-OES						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-3
		6	7	8	9	0
Your Reference		TP106/	TP105/	TP105/	TP104/	TP104/
		0.4-1.0	0.3-0.6	1-1.5	0-0.2	0.3-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	4	<3	<3	<3	<3
Cadmium	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	8.8	1.1	<0.3	3.0	3.8
Copper	mg/kg	43	6.3	<0.5	9.5	20
Lead	mg/kg	120	11	<1	30	44
Nickel	mg/kg	2.7	21	<0.5	7.0	12
Zinc	mg/kg	97	24	0.8	30	46



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Metals in Soil by ICP-OES				·	
Our Reference:	UNITS	SE80889-3	SE80889-3	SE80889-3	SE80889-3
		1	2	3	4
Your Reference		TP104/	TP103/	TP103/	TP107/
		1-1.6	0-0.3	0.4-0.9	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil
Date Extracted (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Metals)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Arsenic	mg/kg	<3	<3	<3	<3
Cadmium	mg/kg	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	<0.3	7.8	2.6	3.8
Copper	mg/kg	<0.5	34	0.6	17
Lead	mg/kg	<1	12	2	39
Nickel	mg/kg	<0.5	51	1.2	11
Zinc	mg/kg	<0.5	45	1.2	42

Mercury Cold Vapor/Hg Analyser						
Our Reference:	UNITS	SE80889-1	SE80889-2	SE80889-3	SE80889-4	SE80889-5
Your Reference		BH1/	BH2/	BH2/	BH2/	BH3/
		0.3-0.5	0.3-0.6	0.7-1.0	4.1-4.5	0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Mercury	mg/kg	<0.05	0.22	<0.05	<0.05	0.24

Date Analysed (Mercury)  Mercury	mg/kg	27/08/2010 <0.05	27/08/2010 0.07	27/08/2010 <0.05	27/08/2010 <0.05	27/08/2010 <0.05
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Your Reference		BH4/ 0.4-0.6	BH5/ 0-0.3	BH5/ 3.4-3.9	BH6/ 0.3-0.6	0 BH6/ 0.6-1.0
Mercury Cold Vapor/Hg Analyser Our Reference:	UNITS	SE80889-6	SE80889-7	SE80889-8	SE80889-9	SE80889-1

Mercury Cold Vapor/Hg Analyser					,	
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-1
		1	2	3	4	5
Your Reference		BD1/	BD3/	TP101/	TP102/	TP102/
		200810	200810	0-0.3	0-0.3	0.4-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Mercury	mg/kg	0.10	<0.05	0.21	0.10	0.07

Mercury Cold Vapor/Hg Analyser				,		
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-1	SE80889-2
		6	7	8	9	0
Your Reference		TP110/	TP110/	TP110/	TP109/	TP109/
		0-0.3	0.5-1.0	1.5-2.0	0-0.3	0.6-1.1
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Mercury	mg/kg	0.08	0.07	<0.05	0.57	0.12

Mercury Cold Vapor/Hg Analyser						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-2
		1	2	3	4	5
Your Reference		TP108/	TP108/	TP107/	TP107/	TP106/
	İ	0-0.3	0.6-1.1	0.4-0.6	0.8-1.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Mercury	mg/kg	0.10	0.35	<0.05	<0.05	0.06

Mercury Cold Vapor/Hg Analyser						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-3
Your Reference		6 TP106/ 0.4-1.0	7 TP105/ 0.3-0.6	TP105/ 1-1.5	9 TP104/ 0-0.2	TP104/ 0.3-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010	27/08/2010
Mercury	mg/kg	0.62	0.07	<0.05	0.06	<0.05

Mercury Cold Vapor/Hg Analyser					
Our Reference:	UNITS	SE80889-3	SE80889-3	SE80889-3	SE80889-3
		1	2	3	4
Your Reference		TP104/	TP103/	TP103/	TP107/
		1-1.6	0-0.3	0.4-0.9	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil
Date Extracted (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Date Analysed (Mercury)		27/08/2010	27/08/2010	27/08/2010	27/08/2010
Mercury	mg/kg	<0.05	<0.05	<0.05	<0.05

Asbestos ID in soil						
Our Reference:	UNITS	SE80889-1	SE80889-2	SE80889-5	SE80889-6	SE80889-7
Your Reference		BH1/	BH2/	BH3/	BH4/	BH5/ 0-0.3
		0.3-0.5	0.3-0.6	0.3-0.6	0.4-0.6	
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed	- ,,	30/08/2010	1/09/2010	30/08/2010	30/08/2010	30/08/2010
Sample Description		167g sand, soil	120g Sand	207g sand, soil	172g sand	198g soil, sand
Asbestos ID in soil	-	No	No	No	No	No
		asbestos	asbestos	asbestos	asbestos	asbestos
		detected	detected	detected	detected	detected

Asbestos ID in soil						
Our Reference:	UNITS	SE80889-9	SE80889-1	SE80889-1	SE80889-1	SE80889-1
			3	4	5	6
Your Reference		BH6/	TP101/	TP102/	TP102/	TP110/
		0.3-0.6	0-0.3	0-0.3	0.4-0.8	0-0.3
Sample Matrix		Soil	Şoil	Soil	Soil	Soil
Date Analysed		30/08/2010	30/08/2010	30/08/2010	30/08/2010	30/08/2010
Sample Description		274g sand,	186g sand,	215g sand,	189g sand,	145g sand,
		soil, rocks	soil	soil, rocks	soil, rocks	soil, rocks
Asbestos ID in soil	-	No	, No	No	Chrysotile	No
		asbestos	asbestos	asbestos	asbestos	asbestos
		detected	detected	detected	detected	detected
		Organic	Organic			Organic
		fibres	fibres			fibres
		detected*	detected*		-	detected*

Asbestos ID in soil						
Our Reference:	UNITS	SE80889-1	SE80889-1	SE80889-1	SE80889-2	SE80889-2
		7	8	9	1	5
Your Reference		TP110/	TP110/	TP109/	TP108/	TP106/
		0.5-1.0	1.5-2.0	0-0.3	0-0.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed	<del></del>	30/08/2010	30/08/2010	30/08/2010	30/08/2010	30/08/2010
Sample Description		192g sand,	237g sand,	205g soil,	120g soil,	95g soil,
		soil, rocks	soil, rocks	plant matter	rocks	rocks
Asbestos ID in soil	-	No	Chrysotile	No	No	No
		asbestos	asbestos	asbestos	asbestos	asbestos
		detected	detected	detected	detected	detected
		Organic	Amosite	Organic	Organic	Organic
		fibres	asbestos	fibres	fibres	fibres
		detected*	detected	detected*	detected*	detected*
			Crocidolite			
			asbestos			!
			detected			
			Organic			
			fibres	İ		
			detected*	<u> </u>		



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Asbestos ID in soil						
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-3	SE80889-3	SE80889-3
		7	9	0	2	4
Your Reference		TP105/	TP104/	TP104/	TP103/	TP107/
		0.3-0.6	0-0.2	0.3-0.8	0-0.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed	-	30/08/2010	30/08/2010	30/08/2010	30/08/2010	30/08/2010
Sample Description		106g soil, rocks	237g soil, rocks	138g soil, rocks	189g soil, rocks	115g soil, rocks
Asbestos ID in soil	-	No asbestos detected Organic fibres detected*	No asbestos detected Organic fibres detected*	No asbestos detected Organic fibres detected*	No asbestos detected Organic fibres detected*	No asbestos detected Organic fibres detected*

Moisture						
Our Reference:	UNITS	SE80889-1	SE80889-2	SE80889-3	SE80889-4	SE80889-5
Your Reference		BH1/	BH2/	BH2/	BH2/	BH3/
		0.3-0.5	0.3-0.6	0.7-1.0	4.1-4.5	0.3-0.6
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	6	6	5	19	5

Moisture Our Reference:	UNITS	SE80889-6	SE80889-7	SE80889-8	SE80889-9	SE80889-1 0
Your Reference		BH4/ 0.4-0.6	BH5/ 0-0.3	BH5/ 3.4-3.9	BH6/ 0.3-0.6	BH6/ 0.6-1.0
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	2	6	15	8	4

Moisture Our Reference:	UNITS	SE80889-1 1	SE80889-1 2	SE80889-1	SE80889-1 4	SE80889-1 5
Your Reference		BD1/ 200810	BD3/ 200810	TP101/ 0-0.3	TP102/ 0-0.3	TP102/ 0.4-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	6	4	10	9	6

Moisture						
Our Reference:	UNITS	SE80889-1 6	SE80889-1 7	SE80889-1 8	SE80889-1 9	SE80889-2 0
Your Reference		TP110/ 0-0.3	TP110/ 0.5-1.0	TP110/ 1.5-2.0	TP109/ 0-0.3	TP109/ 0.6-1.1
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	8	21	6	15	8

Moisture	·					
Our Reference:	UNITS	SE80889-2	SE80889-2	SE80889-2	SE80889-2	SE80889-2
		1	2	3	4	5
Your Reference		TP108/	TP108/	TP107/	TP107/	TP106/
		0-0.3	0.6-1.1	0.4-0.6	0.8-1.3	0-0.3
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)	·	26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	23	10	24	4	15



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Moisture Our Reference:	UNITS	SE80889-2 6	SE80889-2 7	SE80889-2 8	SE80889-2 9	SE80889-3 0
Your Reference	***************************************	TP106/ 0.4-1.0	TP105/ 0.3-0.6	TP105/ 1-1.5	TP104/ 0-0.2	TP104/ 0.3-0.8
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	12	24	2	8	12

Moisture Our Reference:	UNITS	SE80889-3	SE80889-3 2	SE80889-3	SE80889-3 4	SE80889-3
Your Reference		TP104/ 1-1.6	TP103/ 0-0.3	TP103/ 0.4-0.9	TP107/ 0-0.3	BH2/ 1.1-1.5
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	4	7	3	27	4

Moisture						
Our Reference:	UNITS	SE80889-3	SE80889-3	SE80889-3	SE80889-4	SE80889-4
		7	8	9	0	1
Your Reference		BH2/	BH2/	BH2/	BH2/	BH2/
		1.6-2.0	2.1-2.5	2.6-3.0	3.1-3.5	3.6-4.0
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	4	5	9	3	4

Our Reference: Your Reference	UNITS	SE80889-4 2 BH2/	SE80889-4 3 BH2/	SE80889-4 4 BH5/	SE80889-4 5 BH5/	SE80889-4 6 BH5/
Sample Matrix		5.1-5.5 Soil	4.6-5.0 Soil	0.6-1.0 Soil	1.1-1.5 Soil	1.6-2.0 Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	12	21	3	5	3

Moisture Our Reference:	UNITS	SE80889-4 7	SE80889-4 8	SE80889-4 9	SE80889-5 0	SE80889-5 1
Your Reference		BH5/ 2.1-2.5	BH5/ 2.6-3.0	BH5/ 4-4.5	BH5/ 5.5-6.0	TB1/ 200810
Sample Matrix		Soil	Soil	Soil	Soil	Soil
Date Analysed (moisture)		26/08/2010	26/08/2010	26/08/2010	26/08/2010	26/08/2010
Moisture	%	6	6	20	20	<1



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Moisture Our Reference: Your Reference Sample Matrix	UNITS	SE80889-5 3 TB/ 230810 Soil
Date Analysed (moisture)		26/08/2010
Moisture	%	<1

PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts REPORT NO: SE80889

Method ID	Methodology Summary
SEO-018	BTEX / C6-C9 Hydrocarbons - Soil samples are extracted with methanol, purged and concentrated by a purge and trap apparatus, and then analysed using GC/MS technique. Water samples undergo the same analysis without the extraction step. Based on USEPA 5030B and 8260B.
SEO-020	Total Recoverable Hydrocarbons - determined by solvent extraction with dichloromethane / acetone for soils and dichloromethane for waters, followed by instrumentation analysis using GC/FID.  Where applicable Solid Phase Extraction Manifold technique is used for aliphatic / aromatic fractionation.
SEO-030	Polynuclear Aromatic Hydrocarbons - determined by solvent extraction with dichloromethane / acetone for soils and dichloromethane for waters, followed by instrumentation analysis using GC/MS SIM mode.
SEO-005	OC/OP/PCB - Determination of a suite of Organchlorine Pesticides, Chlorinated Organo-phosphorus Pesticides and Polychlorinated Biphenyls (PCB's) by liquid-liquid extraction using dichloromethane for waters, or mechanical extraction using acetone / hexane for soils, followed by instrumentation analysis using GC/ECD. Based on USEPA 8081/8082.
AN420	Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates, and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD/FID technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN289	Total Phenols - Determined by colourimetric method using Discrete Analyser, following distillation of the sample. Based on APHA 21st Edition 5530B and 5530D.
AN101	pH - Measured using pH meter and electrode based on APHA 21st Edition, 4500-H+. For water analyses the results reported are indicative only as the sample holding time requirement specified in APHA was not met (APHA requires that the pH of the samples are to be measured within 15 minutes after sampling).
SEI-037	Ammonia - Determined by salicylate colourimetric method using Discrete Analyser.
AN106	Conductivity and TDS by Calculation (cTDS) - Conductivity is measured using a conductivity cell and dedicated meter, in accordance with APHA 21st Edition, 2510. TDS is calculated by TDS(mg/L)=0.6 x Conductivity(µS/cm).
SEM-010	Determination of elements by ICP-OES following appropriate sample preparation / digestion process. Based on USEPA 6010C / APHA 21st Edition, 3120B.
SEM-005	Mercury - determined by Cold-Vapour AAS following appropriate sample preparation or digestion process. Based on APHA 21st Edition, 3112B.
AN602	Analysed using in house method AN602 - Qualitative identification of Asbestos Fibres, Synthetic Mineral Fibres and Organic Fibres in bulk samples (including building materials and soils) using Polarised Light Microscopy and Dispersion Staining Techniques. Our NATA Accreditation does not currently cover the identification of Synthetic Mineral Fibres and Organic Fibres, however, according to new NATA requirements, the reporting of these fibres is compulsory if detected.



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PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts REPORT NO: SE80889

Method ID	Methodology Summary
AN002	Preparation of soils, sediments and sludges undergo analysis by either air drying, compositing, subsampling and 1:5 soil water extraction where required. Moisture content is determined by drying the sample at 105 ± 5°C.



QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate
MBTEX in Soil						Base + Duplicate + %RPD
Date Extracted (MBTEX)				27/08/1	SE80889-2 1	27/08/2010    27/08/2010
Date Analysed (MBTEX)				27/08/1 0	SE80889-2 1	27/08/2010    27/08/2010
Benzene	mg/kg	0.1	SEO-018	<0.1	SE80889-2 1	<0.1    <0.1
Toluene	mg/kg	0.1	SEO-018	<0.1	SE80889-2 1	<0.1 ]  <0.1
Ethylbenzene	mg/kg	0.1	SEO-018	<0.1	SE80889-2 1	<0.1    <0.1
Total Xylenes	mg/kg	0.3	SEO-018	<0.3	SE80889-2 1	<0.3    <0.3
BTEX Surrogate (%)	%	0	SEO-018	72	SE80889-2 1	70    68    RPD: 3

QUALITY CONTROL BTEX in Soil	UNITS	LOR	METHOD	Blank
Date Extracted (BTEX)				27/08/1 0
Date Analysed (BTEX)				27/08/1 0
Benzene	mg/kg	0.1	SEO-018	<0.1
Toluene	mg/kg	0.1	SEO-018	<0.1
Ethylbenzene	mg/kg	0.1	SEO-018	<0.1
Total Xylenes	mg/kg	0.3	SEO-018	<0.3
BTEX Surrogate (%)	%	0	SEO-018	72

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
RH in soil with C6-C9 by P/T						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)				27/08/1 0	SE80889-2 1	27/08/2010    27/08/2010	[NR]	[NR]
Date Analysed (TRH C6-C9 PT)				27/08/1 0	SE80889-2 1	27/08/2010    27/08/2010	[NR]	[NR]
TRH C6 - C9 P&T	mg/kg	20	SEO-018	<20	SE80889-2 1	<20    <20	[NR]	[NR]
Date Extracted (TRH C10-C36)				27/08/2 010	SE80889-2 1	27/08/2010    27/08/2010	SE80889-2	27/08/10
Date Analysed (TRH C10-C36)				28/08/2 010	SE80889-2 1	27/08/2010    27/08/2010	SE80889-2	28/08/10
TRH C10 - C14	mg/kg	20	SEO-020	<20	SE80889-2 1	<20    [N/T]	SE80889-2	111%



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
TRH in soil with C6-C9 by P/T						Base + Duplicate + %RPD		Duplicate + %RPD
TRH C15 - C28	mg/kg	50	SEO-020	<50	SE80889-2 1	<50   [N/T]	SE80889-2	104%
TRH C29 - C36	mg/kg	50	SEO-020	<50	SE80889-2 1	<50  ] [N/T]	SE80889-2	96%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
PAHs in Soil						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted				27/08/2 010	SE80889-2 4	27/08/2010    27/08/2010	SE80889-3	27/08/2010
Date Analysed				27/08/2 010	SE80889-2 4	27/08/2010    27/08/2010	SE80889-3	27/08/2010
Naphthalene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	SE80889-3	109%
2-Methylnaphthalene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
1-Methylnaphthalene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
Acenaphthylene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	SE80889-3	96%
Acenaphthene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	SE80889-3	112%
Fluorene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
Phenanthrene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	SE80889-3	109%
Anthracene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	SE80889-3	105%
Fluoranthene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10  ] <0.10	SE80889-3	102%
Ругеле	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	SE80889-3	108%
Benzo[a]anthracene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
Chrysene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
Benzo[b,k]fluoranthe ne	mg/kg	0.2	SEO-030	<0.20	SE80889-2 4	<0.20    <0.20	[NR]	[NR]
Benzo[a]pyrene	mg/kg	0.05	SEO-030	<0.05	SE80889-2 4	<0.05    <0.05	SE80889-3	93%
Indeno[123-cd]pyren e	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
Dibenzo[ah]anthrace ne	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]
Benzo[ghi]perylene	mg/kg	0.1	SEO-030	<0.10	SE80889-2 4	<0.10    <0.10	[NR]	[NR]



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### PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts REPORT NO: SE80889

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
PAHs in Soil						Base + Duplicate + %RPD		Duplicate + %RPD
Total PAHs (sum)	mg/kg	1.75	SEO-030	<1.7	SE80889-2 4	<1.7    <1.7	[NR]	[NR]
Nitrobenzene-d5	%	0	SEO-030	96	SE80889-2 4	100  [ 94    RPD: 6	SE80889-3	95%
2-Fluorobiphenyl	%	0	SEO-030	94	SE80889-2 4	95    91    RPD: 4	SE80889-3	92%
p -Terphenyl-d 14	%	0	SEO-030	92	SE80889-2 4	92    86    RPD: 7	SE80889-3	89%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
OC Pesticides in Soil						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted				27/08/2 010	SE80889-6	27/08/2010 [] 27/08/2010	SE80889-7	27/08/2010
Date Analysed				27/08/2 010	SE80889-6	27/08/2010    27/08/2010	SE80889-7	27/08/2010
HCB	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
gamma-BHC (Lindane)	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Heptachlor	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1 j  <0.1	SE80889-7	138%
Aldrin	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	SE80889-7	128%
beta-BHC	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1  ] <0.1	[NR]	[NR]
delta-BHC	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	SE80889-7	117%
Heptachlor Epoxide	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
o,p-DDE	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
alpha-Endosulfan	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
trans-Chlordane (gamma)	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
cis-Chlordane (alpha)	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
trans-Nonachlor	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
p,p-DDE	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Dieldrin	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	SE80889-7	130%
Endrin	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1  j <0.1	SE80889-7	137%
o,p-DDD	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
o,p-DDT	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
beta-Endosulfan	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
p,p-DDD	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
ρ,ρ-DDT	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	SE80889-7	130%
Endosulfan Sulphate	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Methoxychlor	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]



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### REPORT NO: SE80889 PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
OC Pesticídes in Soil						Base + Duplicate + %RPD		Duplicate + %RPD
Endrin Ketone	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
2,4,5,6-Tetrachloro-m-xy lene (Surrogate	%	0	SEO-005	88	SE80889-6	100    100    RPD: 0	SE80889-7	99%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
OP Pesticides in Soil by GCMS						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted				27/08/1 0	[NT]	[NT]	SE80889-5	28/08/10
Date Analysed				27/08/1 0	[NT]	[NT]	SE80889-5	28/08/10
Dichlorvos	mg/kg	1	AN420	<1	[TN]	[NT]	SE80889-5	112%
Dimethoate	mg/kg	1	AN420	<1	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	0.5	AN420	<0.5	[NT]	[NT]	SE80889-5	114%
Fenitrothion	mg/kg	0.2	AN420	<0.2	[NT]	[NT]	[NR]	[NR]
Malathion	mg/kg	0.2	AN420	<0.20	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-ethyl	mg/kg	0.2	AN420	<0.2	[NT]	[NT]	SE80889-5	123%
Parathion-ethyl	mg/kg	0.2	AN420	<0.2	[TN]	[NT]	[NR]	[NR]
Bromofos-ethyl	mg/kg	0.2	AN420	<0.2	[NT]	[TN]	[NR]	[NR]
Methidathion	mg/kg	0.5	AN420	<0.5	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.2	AN420	<0.2	[NT]	[NT]	SE80889-5	99%
Azinphos-methyl	mg/kg	0.2	AN420	<0.20	[NT]	[NT]	[NR]	[NR]
2-fluorobiphenyl (Surr)	%	0	AN420	98	[NT]	[NT]	SE80889-5	112%
d14-p-Terphenyl (Surr)	%	0	AN420	78	[NT]	[NT]	SE80889-5	104%

# PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts REPORT NO: SE80889

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
PCBs in Soil						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted				27/08/2 010	SE80889-6	27/08/2010    27/08/2010	SE80889-9	27/08/2010
Date Analysed				27/08/2 010	SE80889-6	27/08/2010    27/08/2010	SE80889-9	27/08/2010
Arochlor 1016	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Arochlor 1260	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	SE80889-9	120%
Arochlor 1262	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1  ] <0.1	[NR]	[NR]
Arochlor 1268	mg/kg	0.1	SEO-005	<0.1	SE80889-6	<0.1    <0.1	[NR]	[NR]
Total Positive PCB	mg/kg	0.9	SEO-005	<0.90	SE80889-6	<0.90    <0.90	[NR]	[NR]
PCB_Surrogate 1	%	0	SEO-005	88	SE80889-6	100    100    RPD: 0	SE80889-9	95%

QUALITY CONTROL  Total Phenolics in Soil	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (Phenols)				27/08/1 0	SE80889-1	27/08/2010    27/08/2010	SE80889-5	27/08/10
Date Analysed (Phenols)				27/08/1 0	SE80889-1	27/08/2010    27/08/2010	SE80889-5	27/08/10
Total Phenolics (as Phenol)	mg/kg	0.1	AN289	<0.1	SE80889-1	<0.1    <0.1	SE80889-5	84%

QUALITY CONTROL Inorganics	UNITS	LOR	METHOD	Blank
Date Extracted- (pH 1:5 soil: Water)				[NT]
Date Analysed (pH 1:5 Soil: Water)				[NT]
pH 1:5 soil:water	pH Units	0	AN101	[NT]
Electrical Conductivity 1:5 soil:water	μS/cm	1	AN106	[NT]



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## PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts REPORT NO: SE80889

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
Metals in Soil by ICP-OES						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (Metals)				27/08/2 010	SE80889-1	27/08/2010    27/08/2010	SE80889-2 3	27/08/2010
Date Analysed (Metals)				27/08/2 010	SE80889-1	27/08/2010    27/08/2010	SE80889-2 3	27/08/2010
Arsenic	mg/kg	3	SEM-010	<3	SE80889-1	<3    <3	SE80889-2 3	114%
Cadmium	mg/kg	0.3	SEM-010	<0.3	SE80889-1	<0.3 [] <0.3	SE80889-2 3	121%
Chromium	mg/kg	0.3	SEM-010	<0.3	SE80889-1	2.7    2.8    RPD: 4	SE80889-2 3	104%
Соррег	mg/kg	0.5	SEM-010	<0.5	SE80889-1	2.7  ] 2.8    RPD: 4	SE80889-2 3	112%
Lead	mg/kg	1	SEM-010	<1	SE80889-1	5    6    RPD: 18	SE80889-2 3	125%
Nickel	mg/kg	0.5	SEM-010	<0.5	SE80889-1	1.2    1.2    RPD: 0	SE80889-2 3	124%
Zinc	mg/kg	0.5	SEM-010	<0.5	SE80889-1	16    17    RPD: 6	SE80889-2 3	123%

QUALITY CONTROL Mercury Cold Vapor/Hg Analyser	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (Mercury)				27/08/2 010	SE80889-1	27/08/2010    27/08/2010	LCS	27/08/2010
Date Analysed (Mercury)				27/08/2 010	SE80889-1	27/08/2010 [  27/08/2010	LCS	27/08/2010
Mercury	mg/kg	0.05	SEM-005	<0.05	SE80889-1	<0.05    <0.05	LCS	100%

QUALITY CONTROL Asbestos ID in soil	UNITS	LOR	METHOD	Blank
Date Analysed				[NT]

QUALITY CONTROL Moisture	UNITS	LOR	METHOD	Blank
Date Analysed (moisture)				[NT]
Moisture	%	1	AN002	<1



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QUALITY CONTROL  MBTEX in Soil	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (MBTEX)		SE80889-3 1	27/08/2010    27/08/2010	SE80889-3 2	27/08/10
Date Analysed (MBTEX)		SE80889-3 1	27/08/2010    27/08/2010	SE80889-3 2	27/08/10
Benzene	mg/kg	SE80889-3 1	<0.1    <0.1	SE80889-3 2	60%
Toluene	mg/kg	SE80889-3 1	<0.1    <0.1	SE80889-3 2	62%
Ethylbenzene	mg/kg	SE80889-3 1	<0.1    <0.1	SE80889-3 2	64%
Total Xylenes	mg/kg	SE80889-3 1	<0.3    <0.3	SE80889-3 2	69%
BTEX Surrogate (%)	%	SE80889-3 1	60    62    RPD: 3	SE80889-3 2	76%

QUALITY CONTROL  TRH in soil with C6-C9 by P/T	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		SE80889-3	27/08/2010    27/08/2010	SE80889-3 2	27/08/10
Date Analysed (TRH C6-C9 PT)		SE80889-3 1	27/08/2010 [[ 27/08/2010	SE80889-3 2	27/08/10
TRH Cs - C9 P&T	mg/kg	SE80889-3 1	<20    <20	SE80889-3 2	71%
Date Extracted (TRH C10-C36)		SE80889-3 1	27/08/2010 [[ 27/08/2010	[NR]	[NR]
Date Analysed (TRH C10-C36)		SE80889-3 1	27/08/2010  ] 27/08/2010	[NR]	[NR]



QUALITY CONTROL  PAHs in Soil	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
			%RPD		
Date Extracted		SE80889-1	27/08/2010    27/08/2010	SE80889-2 6	27/08/10
Date Analysed		SE80889-1	27/08/2010    27/08/2010	SE80889-2 6	27/08/10
Naphthalene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	126%
2-Methylnaphthalene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
1-Methylnaphthalene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Acenaphthylene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	97%
Acenaphthene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	135%
Fluorene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Phenanthrene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	66%
Anthracene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	98%
Fluoranthene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	#
Pyrene	mg/kg	SE80889-1	<0.10    <0.10	SE80889-2 6	#
Benzo[a]anthracene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Chrysene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Benzo[b,k]fluoranthene	mg/kg	SE80889-1	<0.20    <0.20	[NR]	[NR]
Benzo[a]pyrene	mg/kg	SE80889-1	<0.05    <0.05	SE80889-2 6	#
Indeno[123-cd]pyrene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Dibenzo[ah]anthracene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Benzo[ghi]perylene	mg/kg	SE80889-1	<0.10    <0.10	[NR]	[NR]
Total PAHs (sum)	mg/kg	SE80889-1	<1.7    <1.7	[NR]	[NR]
Nitrobenzene-d5	%	SE80889-1	94    96    RPD: 2	SE80889-2 6	106%
2-Fluorobiphenyl	%	SE80889-1	94    94    RPD: 0	SE80889-2 6	103%
p -Terphenyl-d14	%	SE80889-1	76    74    RPD: 3	SE80889-2 6	102%



QUALITY CONTROL OC Pesticides in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate +
			%RPD
Date Extracted	,	SE80889-2 7	27/08/2010    27/08/2010
Date Analysed		SE80889-2 7	27/08/2010    27/08/2010
HCB	mg/kg	SE80889-2 7	<0.1    <0.1
alpha-BHC	mg/kg	SE80889-2 7	<0.1  ] <0.1
gamma-BHC (Lindane)	mg/kg	SE80889-2 7	<0.1  ] <0.1
Heptachlor	mg/kg	SE80889-2 7	<0.1    <0.1
Aldrin	mg/kg	SE80889-2 7	<0.1    <0.1
beta-BHC	mg/kg	SE80889-2 7	<0.1    <0.1
delta-BHC	mg/kg	SE80889-2 7	<0.1    <0.1
Heptachlor Epoxide	mg/kg	SE80889-2 7	<0.1  j <0.1
o,p-DDE	mg/kg	SE80889-2 7	<0.1    <0.1
alpha-Endosulfan	mg/kg	SE80889-2 7	<0.1    <0.1
trans-Chlordane (gamma)	mg/kg	SE80889-2 7	<0.1    <0.1
cis-Chlordane (alpha)	mg/kg	SE80889-2 7	<0.1    <0.1
trans-Nonachlor	mg/kg	SE80889-2 7	<0.1    <0.1
ρ,ρ-DDE	mg/kg	SE80889-2 7	<0.1    <0.1
Dieldrin	mg/kg	SE80889-2 7	<0.1    <0.1
Endrin	mg/kg	SE80889-2 7	<0.1    <0.1
o,p-DDD	mg/kg	SE80889-2 7	<0.1    <0.1
o,p-DDT	mg/kg	SE80889-2 7	<0.1    <0.1
beta-Endosulfan	mg/kg	SE80889-2 7	<0.1    <0.1
ho, ho-DDD	mg/kg	SE80889-2 7	<0.1 [  <0.1



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QUALITY CONTROL OC Pesticides in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
p,p-DDT	mg/kg	SE80889-2 7	<0.1    <0.1
Endosulfan Sulphate	mg/kg	SE80889-2 7	<0.1    <0.1
Endrin Aldehyde	mg/kg	SE80889-2 7	<0.1    <0.1
Methoxychlor	mg/kg	SE80889-2 7	<0.1    <0.1
Endrin Ketone	mg/kg	SE80889-2 7	<0.1    <0.1
2,4,5,6-Tetrachloro-m-xylen e (Surrogate	%	SE80889-2 7	97    102    RPD: 5

QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate
OP Pesticides in Soil by GCMS			Base + Duplicate + %RPD
Date Extracted		SE80889-1	27/08/2010    27/08/2010
Date Analysed		SE80889-1	27/08/2010    27/08/2010
Dichlorvos	mg/kg	SE80889-1	<1    <1
Dimethoate	mg/kg	SE80889-1	<1    <1
Diazinon	mg/kg	SE80889-1	<0.5    <0.5
Fenitrothion	mg/kg	SE80889-1	<0.2    <0.2
Malathion	mg/kg	SE80889-1	<0.20    <0.20
Chlorpyrifos-ethyl	mg/kg	SE80889-1	<0.2   <0.2
Parathion-ethyl	mg/kg	SE80889-1	<0.2    <0.2
Bromofos-ethyl	mg/kg	SE80889-1	<0.2    <0.2
Methidathion	mg/kg	SE80889-1	<0.5    <0.5
Ethion	mg/kg	SE80889-1	<0.2   <0.2
Azinphos-methyl	mg/kg	SE80889-1	<0.20    <0.20
2-fluorobiphenyl (Surr)	%	SE80889-1	94    94    RPD: 0
d14-p-Terphenyl (Surr)	%	\$E80889-1	76   74   RPD: 3



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QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate
PCBs in Soil			Base + Duplicate + %RPD
Date Extracted		SE80889-2 7	27/08/2010    27/08/2010
Date Analysed		SE80889-2 7	27/08/2010    27/08/2010
Arochlor 1016	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1221	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1232	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1242	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1248	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1254	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1260	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1262	mg/kg	SE80889-2 7	<0.1    <0.1
Arochlor 1268	mg/kg	SE80889-2 7	<0.1    <0.1
Total Positive PCB	mg/kg	SE80889-2 7	<0.90    <0.90
PCB_Surrogate 1	%	SE80889-2 7	97    102    RPD: 5

QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate
Total Phenolics in Soil			Base + Duplicate + %RPD
Date Extracted (Phenols)		SE80889-2 1	27/08/2010    27/08/2010
Date Analysed (Phenols)		SE80889-2 1	27/08/2010    27/08/2010
Total Phenolics (as Phenol)	mg/kg	SE80889-2 1	0.7    0.4    RPD: 55

QUALITY CONTROL  Metals in Soil by ICP-OES	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
			%RPD	**************************************	
Date Extracted (Metals)		SE80889-1	27/08/2010    27/08/2010	SE80889-2	27/08/2010
Date Analysed (Metals)		SE80889-1 1	27/08/2010  [ 27/08/2010	SE80889-2	27/08/2010
Arsenic	mg/kg	SE80889-1 1	<3    <3	SE80889-2	113%
Cadmium	mg/kg	SE80889-1 1	<0.3    <0.3	SE80889-2	113%
Chromium	mg/kg	SE80889-1 1	1.8    1.6    RPD: 12	SE80889-2	102%
Copper	mg/kg	SE80889-1 1	34    36    RPD: 6	SE80889-2	94%
Lead	mg/kg	SE80889-1 1	73    62    RPD: 16	SE80889-2	115%
Nickel	mg/kg	SE80889-1 1	<0.5    <0.5	SE80889-2	109%
Zinc	mg/kg	SE80889-1 1	58  [ 60    RPD: 3	SE80889-2	106%

QUALITY CONTROL  Mercury Cold Vapor/Hg  Analyser	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (Mercury)		SE80889-1	27/08/2010    27/08/2010	SE80889-2 3	27/08/2010
Date Analysed (Mercury)		SE80889-1 1	27/08/2010    27/08/2010	SE80889-2 3	27/08/2010
Mercury	mg/kg	SE80889-1 1	0.10    0.21    RPD: 71	SE80889-2 3	95%

QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
MBTEX in Soil			Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (MBTEX)		SE80889-1	27/08/2010    27/08/2010	[NR]	[NR]
Date Analysed (MBTEX)		SE80889-1	27/08/2010    27/08/2010	[NR]	[NR]
Велгее	mg/kg	SE80889-1	<0.1    <0.1	[NR]	[NR]
Toluene	mg/kg	SE80889-1	<0.1    <0.1	[NR]	[NR]
Ethylbenzene	mg/kg	SE80889-1	<0.1    <0.1	[NR]	[NR]
Total Xylenes	mg/kg	SE80889-1	<0.3    <0.3	[NR]	[NR]
BTEX Surrogate (%)	%	SE80889-1	73    81    RPD: 10	[NR]	[NR]

QUALITY CONTROL  TRH in soil with C6-C9 by P/T	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		SE80889-1	27/08/2010    27/08/2010	SE80889-1 2	27/08/10
Date Analysed (TRH C6-C9 PT)		SE80889-1	27/08/2010    27/08/2010	SE80889-1 2	27/08/10
TRH Cs - Cs P&T	mg/kg	SE80889-1	<20    <20	SE80889-1 2	77%
Date Extracted (TRH C10-C36)		SE80889-1	27/08/2010 [[ 27/08/2010	[NR]	[NR]
Date Analysed (TRH C10-C36)		SE80889-1	27/08/2010  ] 27/08/2010	[NR]	[NR]
TRH C10 - C14	mg/kg	SE80889-1	<20    <20	[NR]	[NR]
TRH C15 - C28	mg/kg	SE80889-1	<50    <50	[NR]	[NR]
TRH C29 - C36	mg/kg	SE80889-1	<50  \ <50	[NR]	[NR]



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QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
PAHs in Soil			Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted		SE80889-1	27/08/2010    27/08/2010	LCS	27/08/10
Date Analysed		SE80889-1 3	27/08/2010    27/08/2010	LCS	27/08/10
Naphthalene	mg/kg	SE80889-1 3	<0.10    <0.10	LCS	116%
2-Methylnaphthalene	mg/kg	SE80889-1 3	<0.10    <0.10	[NR]	[NR]
1-Methylnaphthalene	mg/kg	SE80889-1 3	<0.10    <0.10	[NR]	[NR]
Acenaphthylene	mg/kg	SE80889-1 3	0.43    0.38    RPD: 12	LCS	106%
Acenaphthene	mg/kg	SE80889-1 3	<0.10    <0.10	LCS	121%
Fluorene	mg/kg	SE80889-1 3	0.19    0.16    RPD: 17	[NR]	[NR]
Phenanthrene	mg/kg	SE80889-1	4.6    4.1    RPD: 11	LCS	118%
Anthracene	mg/kg	SE80889-1 3	0.93    0.84    RPD: 10	LCS	112%
Fluoranthene	mg/kg	SE80889-1 3	8.2    7.2    RPD: 13	LCS	110%
Pyrene	mg/kg	SE80889-1 3	8.4    7.3    RPD: 14	LCS	115%
Benzo[a]anthracene	mg/kg	SE80889-1 3	5.0    4.5    RPD: 11	[NR]	[NR]
Chrysene	mg/kg	SE80889-1 3	3.5    3.1    RPD: 12	[NR]	[NR]
Benzo[b,k]fluoranthene	mg/kg	SE80889-1 3	5.7    5.2    RPD: 9	[NR]	[NR]
Benzo[a]pýrene	mg/kg	SE80889-1 3	3.6  [ 3.3    RPD: 9	LCS	98%
Indeno[123-cd]pyrene	mg/kg	SE80889-1 3	1.5    1.4    RPD: 7	[NR]	[NR]
Dibenzo[ah]anthracene	mg/kg	SE80889-1 3	0.30    0.29    RPD: 3	[NR]	[NR]
Benzo[ghi]perylene	mg/kg	SE80889-1 3	1.2    1.1    RPD: 9	[NR]	[NR]
Total PAHs (sum)	mg/kg	SE80889-1 3	<44.04    <39.33	[NR]	[NR]
Nitrobenzene-d5	%	SE80889-1 3	106    88    RPD: 19	LCS	92%
2-Fluorobiphenyl	%	SE80889-1 3	106    90    RPD: 16	LCS	89%
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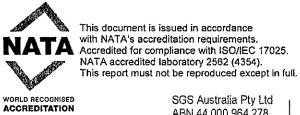


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QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
PAHs in Soil			Base + Duplicate + %RPD		Duplicate + %RPD
p -Terphenyl-d14	%	SE80889-1	88    62    RPD: 35	LCS	87%

QUALITY CONTROL OP Pesticides in Soil by GCMS	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD
Date Extracted		SE80889-1 3	27/08/2010    27/08/2010
Date Analysed		SE80889-1 3	27/08/2010    27/08/2010
Dichlorvos	mg/kg	SE80889-1 3	<1    <1
Dimethoate	mg/kg	SE80889-1 3	<1    <1
Diazinon	mg/kg	SE80889-1 3	<0.5    <0.5
Fenitrothion	mg/kg	SE80889-1 3	<0.2    <0.2
Malathion	mg/kg	SE80889-1 3	<0.20    <0.20
Chlorpyrifos-ethyl	mg/kg	SE80889-1 3	<0.2    <0.2
Parathion-ethyl	mg/kg	SE80889-1 3	<0.2 [  <0.2
Bromofos-ethyl	mg/kg	SE80889-1 3	<0.2    <0.2
Methidathion	mg/kg	SE80889-1 3	<0.5    <0.5
Ethion	mg/kg	SE80889-1 3	<0.2    <0.2
Azinphos-methyl	mg/kg	SE80889-1 3	<0.20    <0.20
2-fluorobiphenyl (Surr)	%	SE80889-1 3	106    94    RPD: 12
d14-p-Terphenyl (Surr)	%	SE80889-1 3	88    74    RPD: 17



QUALITY CONTROL Metals in Soil by ICP-OES	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date Extracted (Metals)		SE80889-2 2	27/08/2010    27/08/2010
Date Analysed (Metals)		SE80889-2 2	27/08/2010    27/08/2010
Arsenic	mg/kg	SE80889-2 2	4    5    RPD: 22
Cadmium	mg/kg	SE80889-2 2	<0.3    <0.3
Chromium	mg/kg	SE80889-2 2	11    12    RPD: 9
Copper	mg/kg	SE80889-2 2	59    74    RPD: 23
Lead ~	mg/kg	SE80889-2 2	120    140    RPD: 15
Nickel	mg/kg	SE80889-2 2	3.1    3.5    RPD: 12
Zinc	mg/kg	SE80889-2 2	120    140    RPD: 15

QUALITY CONTROL Mercury Cold Vapor/Hg	UNITS	Dup. Sm#	Duplicate Base + Duplicate +
Analyser			%RPD
Date Extracted (Mercury)		SE80889-2 2	27/08/2010    27/08/2010
Date Analysed (Mercury)		SE80889-2 2	27/08/2010    27/08/2010
Mercury	mg/kg	SE80889-2 2	0.35    0.45    RPD: 25

QUALITY CONTROL  TRH in soil with C6-C9 by P/T	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		SE80889-1	27/08/2010 [  27/08/2010	[NR]	[NR]
Date Analysed (TRH C6-C9 PT)		SE80889-1 1	27/08/2010    27/08/2010	[NR]	[NR]
TRH C6 - C9 P&T	mg/kg	SE80889-1 1	<20    <20	[NR]	[NR]
Date Extracted (TRH C10-C36)		SE80889-1 1	27/08/2010    27/08/2010	SE80889-2 5	27/08/2010
Date Analysed (TRH C10-C36)		SE80889-1 1	27/08/2010    27/08/2010	SE80889-2 5	28/08/2010



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#### PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts SE80889 REPORT NO:

QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
TRH in soil with C6-C9 by P/T			Base + Duplicate + %RPD		Duplicate + %RPD
TRH C10 - C14	mg/kg	SE80889-1 1	<20    [N/T]	SE80889-2 5	112%
TRH C15 - C28	mg/kg	SE80889-1 1	<50    [N/T]	SE80889-2 5	103%
TRH C29 - C36	mg/kg	SE80889-1 1	<50    [N/T]	SE80889-2 5	98%

QUALITY CONTROL Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date Extracted- (pH 1:5 soil: Water)		SE80889-3	27/08/2010    27/08/2010
Date Analysed (pH 1:5 Soil: Water)		SE80889-3 8	27/08/2010    27/08/2010
pH 1:5 soil:water	pH Units	SE80889-3 8	7.9    8.0    RPD: 1
Electrical Conductivity 1:5 soil:water	μS/cm	SE80889-3 8	27    27    RPD: 0

QUALITY CONTROL Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date Extracted- (pH 1:5 soil: Water)		SE80889-4 8	27/08/2010    27/08/2010
Date Analysed (pH 1:5 Soil: Water)		SE80889-4 8	27/08/2010    27/08/2010
pH 1:5 soil:water	pH Units	SE80889-4 8	6.1    6.1    RPD: 0
Electrical Conductivity 1:5 soil:water	μS/cm	SE80889-4 8	9.3    9.1    RPD: 2

QUALITY CONTROL TRH in soil with C6-C9 by P/T	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		SE80889-1	27/08/2010    27/08/2010
Date Analysed (TRH C6-C9 PT)		SE80889-1 3	27/08/2010    27/08/2010
TRH C6 - C9 P&T	mg/kg	SE80889-1 3	<20    [N/T]
Date Extracted (TRH C10-C36)		SE80889-1 3	27/08/2010    27/08/2010
Date Analysed (TRH C10-C36)		SE80889-1 3	27/08/2010    27/08/2010
TRH C10 - C14	mg/kg	SE80889-1 3	<20    <20
TRH C15 - C28	mg/kg	SE80889-1 3	120    120    RPD: 0
TRH C29 - C36	mg/kg	SE80889-1 3	62    60    RPD: 3

QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate
TRH in soil with C6-C9 by P/T			Base + Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		SE80889-2 4	27/08/2010    27/08/2010
Date Analysed (TRH C6-C9 PT)		SE80889-2 4	27/08/2010    27/08/2010
TRH C6 - C9 P&T	mg/kg	SE80889-2 4	<20 [  [N/T]
Date Extracted (TRH C10-C36)		SE80889-2 4	27/08/2010    27/08/2010
Date Analysed (TRH C10-C36)		SE80889-2 4	27/08/2010 [  27/08/2010
TRH C10 - C14	mg/kg	SE80889-2 4	<20    <20
TRH C15 - C28	mg/kg	SE80889-2 4	<50    <50
TRH C29 - C36	mg/kg	SE80889-2 4	<50    <50



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QUALITY CONTROL TRH in soil with C6-C9 by P/T	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		SE80889-3 4	27/08/2010    27/08/2010
Date Analysed (TRH C6-C9 PT)		SE80889-3 4	27/08/2010    27/08/2010
TRH C6 - C9 P&T	mg/kg	SE80889-3 4	<20    [N/T]
Date Extracted (TRH C10-C36)		SE80889-3 4	27/08/2010 [[ 27/08/2010
Date Analysed (TRH C10-C36)		SE80889-3 4	27/08/2010    27/08/2010
TRH C10 - C14	mg/kg	SE80889-3 4	<20  ] <20
TRH C15 - C28	mg/kg	SE80889-3 4	<50    <50
TRH C29 - C36	mg/kg	SE80889-3 4	<50    <50

PROJECT: 71976-01 - Randwick-Spectator and Stable Precincts REPORT NO: SE80889

Result Codes

[INS] : Insufficient Sample for this test [RPD] : Relative Percentage Difference
[NR] : Not Requested \* : Not part of NATA Accreditation

[NT] : Not tested [N/A] : Not Applicable

[LOR] : Limit of reporting

Report Comments

#PAH - #26 Spikes not reported due to sample matrix interference. LCS reported.

Sampled by the client

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy.

This is due to the low grade or small length or diameter of asbestos fibres present in the material,

This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

No respirable fibres detected using trace analysis technique.

Sample # 15: 2 mm length fibre bundle hand picked and found loose in sample

Sample # 18: 1-2mm length fibre bundles found in 5x3 mm cement sheet fragment.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam.

Samples analysed as received. Solid samples expressed on a dry weight basis.

Date Organics extraction commenced:

NATA Corporate Accreditation No. 2562, Site No 4354

Note: Test results are not corrected for recovery (excluding Air-toxics and Dioxins/Furans\*) This document is issued by the Company subject to its General Conditions of Service (www.sgs.com/terms\_and\_conditions.htm). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein.

This document is to be treated as an original within the meaning of UCP 600. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

### **Quality Control Protocol**

**Method Blank**: An analyte free matrix to which all reagents are added in the same volume or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. A method blank is prepared every 20 samples.

**Duplicate**: A separate portion of a sample being analysed that is treated the same as the other samples in the batch. One duplicate is processed at least every 10 samples.

**Surrogate Spike**: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are added to samples before extraction to monitor extraction efficiency and percent recovery in each sample.

Internal Standard: Added to all samples requiring analysis for organics (where relevant) or metals by ICP after the extraction/digestion process; the compounds/elements serve to give a standard of retention time and/or response, which is invariant from run-to-run with the instruments.

Laboratory Control Sample: A known matrix spiked with compound(s) representative of the target analytes. It is used to document laboratory performance. When the results of the matrix spike analysis indicates a potential problem due to the sample matrix itself, the LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

Matrix Spike: An aliquot of sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.



ACCREDITATION

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SGS Australia Pty Ltd ABN 44 000 964 278 Environmental Services Unit 16/33 Maddox Street Alexandria NSW 2015 Australia t +61 (0)2 8594 0400 f + 61 (0)2 8594 0499 www.au.sgs.com

REPORT NO: SE80889

Quality Acceptance Criteria

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf



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CLIENT DETAILS -

LABORATORY DETAILS -

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Lindsay Rockett

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71976.01-Randwick, Spec& Stable (SE81160)

Project Order Number

(Not specified)

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Manager

Laboratory

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SGS Reference Report Number

Date Reported

0000006306 17 Sep 2010

COMMENTS

The document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(898).

SVOC surrogate recoveries were low on samples "BH2" and "BH5" due to sample emulsification during extraction.

SIGNATORIES

Dave Williams

National Organic Manager

David Will.

Jeremy Truong

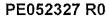
Inorganics Co-ordinator

Pamela Adams

Organic Team Leader



		ple Number mple Matrix	PE052327,001 Water	Water
	(2) (2) (2) (3) (3) (4) (5) (4) (5)	imple Name	BH2	<b>灣                                    </b>
	7.72	rede		
Parameter	Units	LOR	94 V 10 ( V 10 )	
Low Level PCBs in Water Method: AN400/AN4	420			
PCB Congener C28	μg/L	0.02	<0.02	<0.02
PCB Congener C52	μg/L	0.01	<0.01	<0.01
PCB Congener C101	µg/L	0.004	<0,004	<0.004
PCB Congener C118	μg/L	0.004	<0.004	<0.004
PGB Congener C138	μg/L	0.004	<0.004	<0.004
PGB Congener C153	μg/L	0.004	<0.004	<0.004
CB Congener C180	ha\r	0.004	<0.004	<0.004
Surrogates				
114-p-terphenyl (Surrogate)	%	<u> </u>	26.0	10.0
AND AND AND AND AND AND AND AND AND AND	N400/AN420	1 000	-0.05	40 AC
indane (gamma BHC)	μg/L	0.05	<0.05	<0.05
Aldrin	μg/L	0.01	<0.01	<0.01
o,p'-DDE	pg/L	0.01	<0.01	<0.01
o,p*-DDD	μg/L	0.01	<0.01	<0.01
Methoxychlor	μg/L	0.1	<0.1	<0.1
-lexachlorobenzene	µg/L	0.01	<0.01	<0,01
Npha BHC	µg/L	0.05	<0.05	<0.05
Beta BHC	μg/L	0.05	<0.05	<0.05
Delta BHC	μg/L.	0,05	<0.05	<0.05
		0.05	<0.05	<0,05
ALICENSE DE VALUE : PRINCIPA DE PRINCIPA D	µg/L			
ALICENSE DE VALUE : PRINCIPA DE PRINCIPA D	hâ\r hâ\r	0.02	<0.02	<0.02
Endrin Kelone Heptachlor epoxide Surrogates				
Heptachlor epoxide Surrogates				
Heptachfor epoxide Surrogates d14-p-terphenyl (Surrogate)	µg/∟	0.02	<0.02	<0.02
Heptachlor epoxide Surrogates d14-p-terphenyl (Surrogate) Ultra Low Level OC Pesticides in Water Meth-	µg/L %	0.02	<0.02	<0.02
Heptachlor epoxide Surrogates 114-p-terphenyl (Surrogate) Ultra Low Level OC Pesticides in Water Meth- Heptachlor	μg/L % od: AN400/AN420	0.02	<0.02 26.0	<0.02 10.0
Heptachlor epoxide Surrogates  114-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methologian Heptachlor Gamma Chlordane	μg/L % od: AN400/AN420 μg/L μg/L	0.02	<0.02 26.0 <0.01	<0.02 10.0 <0.01
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor  Gamma Chlordane  Alpha Chlordane	μg/L  % od: AN400/AN420  μg/L μg/L μg/L	0.02	<0.02 26.0 <0.01 <0.002	<0.02 10.0 40.01 <0.002
Heptachtor epoxide Surrogates d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor Gamma Chlordane Alpha Endosulfan	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L	0.02 - 0.01 0.002 0.002	<0.02 26.0 <0.01 <0.002 <0.002	<0.02 10.0 40.01 <0.002 <0.002
Heptachtor epoxide Surrogates d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor Gamma Chlordane Alpha Chlordane Alpha Endosulfan  Dieldrin	μg/L  %  od: AN400/AN420  μg/L  μg/L  μg/L  μg/L  μg/L  μg/L  μg/L	0.02 - 0.01 0.002 0.002 0.002	<0.02  26.0  <0.01 <0.002 <0.002 <0.005	<0.02 10.0 10.0 <0.01 <0.002 <0.002 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor  Gamma Chlordane  Alpha Chlordane  Alpha Endosulfan  Dieldrin  Endrin	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02 - 0.01 0.002 0.002 0.002 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.002	<0.02 10.0 40.01 <0.002 <0.002 <0.005 <0.002
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor  Gamma Chlordane  Alpha Chlordane  Alpha Endosulfan  Dieldrin  Endrin  Beta Endosulfan	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02 - 0.01 0.002 0.002 0.005 0.002 0.002	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.002 <0.004	<0.02 10.0 <0.01 <0.002 <0.005 <0.002 <0.004 <0.004
teptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methologament	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02 - 0.01 0.002 0.002 0.005 0.002 0.004 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.002 <0.004 <0.005	<0.02 10.0 <0.01 <0.002 <0.005 <0.004 <0.005 <0.005
Heptachlor epoxide Surrogates  114-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methologian Water Methologian Chlordane Alpha Chlordane Alpha Endosulfan Dieldrin Endrin Beta Endosulfan Endosulfan Sulphate p.p'-DDT	μg/L  % od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02 - 0.01 0.002 0.002 0.005 0.002 0.004 0.005 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.004 <0.005 <0.005	<0.02 10.0 <0.01 <0.002 <0.005 <0.004 <0.005 <0.005
Heptachlor epoxide  Surrogates  114-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methods and Chlordane Alpha Chlordane Alpha Chlordane Alpha Endosulfan Dieldrin Endrin Beta Endosulfan Endosulfan Endosulfan Endosulfan Endosulfan Endosulfan Endosulfan Endosulfan Endosulfan Sulphate p.p'-DDT  Low Level OP Pesticides in Water Method: A	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02 - 0.01 0.002 0.002 0.005 0.002 0.004 0.005 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.004 <0.005 <0.005	<0.02 10.0 <0.01 <0.002 <0.005 <0.004 <0.005 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methods and Chlordane  Alpha Chlordane  Alpha Chlordane  Alpha Endosulfan  Dieldrin  Endosulfan Sulphate  p.p-DDT  Low Level OP Pesticides in Water Method: A  Azinphos-methyl (Guthlon)	уд/L  %  od: AN400/AN420  уд/L	0.02 0.01 0.002 0.002 0.005 0.002 0.005 0.005 0.005 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.002 <0.004 <0.006 <0.005 <0.002	<0.02 10.0 <0.01 <0.002 <0.002 <0.005 <0.002 <0.005 <0.005 <0.005 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methodiana Chlordana Alpha Chlordana Alpha Chlordana Alpha Endosulfan Dieldrin Endrin Beta Endosulfan Endosulfan Sulphate p.p-DDT  Low Level OP Pesticides in Water Method: A Azinphos-methyl (Guthlon) Bromophos Ethyl	уд/L  %  od: AN400/AN420  µд/L	0.02 0.01 0.002 0.002 0.005 0.002 0.005 0.005 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.004 <0.006 <0.006 <0.002 <0.005	<0.02 10.0 40.01 <0.002 <0.002 <0.005 <0.004 <0.005 <0.005 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methodiane Heptachtor  Gamma Chlordane Alpha Chlordane Alpha Endosulfan  Dietdrin  Endrin Beta Endosulfan  Endosulfan Sulphate p.p'-DDT  Low Level OP Pesticides in Water Method: A  Azinphos-methyl (Guthion)  Bromophos Ethyl  Diazinon (Dimpylate)	уд/L  %  od: AN400/AN420	0.02   0.01  0.002  0.002  0.005  0.005  0.005  0.005  0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.004 <0.006 <0.005 <0.002 <0.005 <0.005 <0.005	<0.02 10.0 10.0 <0.01 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methodiane Alpha Endosulfan  Dietdrin  Endrin  Beta Endosulfan  Endosulfan Sulphate  p.p'-DDT  Low Level OP Pesticides in Water Method: A  Azinphos-methyl (Guthion)  Bromophos Ethyl  Diazinon (Dimpylate)  Dichlorvos	руд/L  %  od: AN400/AN420  руд/L   0.02   0.01  0.002  0.002  0.005  0.005  0.005  0.005  0.005  0.005  0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.004 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.001	<0.02 10.0 40.01 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005	
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Methodiane Heptachtor  Gamma Chlordane Alpha Chlordane Alpha Endosulfan  Dietdrin Endrin Beta Endosulfan Endosulfan Sulphate p.p'-DDT  Low Level OP Pesticides in Water Method: A  Azinphos-methyl (Guthlon)  Bromophos Ethyl  Diazinon (Dimpylate)  Dichlorvos Ethion	руд/L  %  od: AN400/AN420  руд/L	0.02   0.01  0.002  0.002  0.005  0.005  0.005  0.005  0.005  0.005  0.005  0.05  0.05	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.004 <0.005 <0.005 <0.005 <0.005 <0.001 <0.5	<0.02 10.0 40.01 <0.002 <0.002 <0.005 <0.004 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor  Gamma Chlordane  Alpha Chlordane  Alpha Endosulfan  Dietdrin  Endrin  Beta Endosulfan  Endosulfan Sulphate  p.p'-DOT	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02  0.01 0.002 0.002 0.005 0.005 0.005 0.005 0.005 0.005 0.05 0.05 0.05	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.05 <0.05 <0.05 <0.05 <0.05	<0.02 10.0 10.0 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005
Heptachtor epoxide  Surrogates  d14-p-terphenyl (Surrogate)  Ultra Low Level OC Pesticides in Water Meth- Heptachtor  Gamma Chlordane Alpha Chlordane Alpha Endosulfan  Dietdrin  Endrin Beta Endosulfan  Endosulfan Sulphate p.p'-DOT  Low Level OP Pesticides in Water Method: A  Azinphos-methyl (Guthlon)  Bromophos Ethyl  Diazinon (Dimpytate)  Dichlorvos  Ethion  Fonttrothion	μg/L  %  od: AN400/AN420  μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.02  0.01 0.002 0.002 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	<0.02  26.0  <0.01 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.0	<0.02 10.0 10.0 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05





Samula Matrix Water	
一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	Water
Sample Name BH2	BH5

Ultra Low Level OP Pesticides in Water Method: AN400/AN420

Chlorpyrifos (Chlorpyrifos Ethyl)	μg/L	0.009	<0.009	<0.009
Parathion-ethyl (Parathion)	µg/L	0.004	<0,004	<0.004

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## **QC SUMMARY**

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

Low Level OC Pesticides in Water Method: ME-(AU)-[ENV]AN400/AN420

Parameter (%)	QC Reference	Units	LOR	MB	LCS %Recovery
Lindane (gamma BHC)	LB006052	μg/L	0.05	<0.05	82%
Aldrin	LB006052	µg/L	0.01	<0.01	112%
p.p'-DDE	LB006052	μg/L	0.01	<0.01	94%
p.p'-DDD	LB006052	μg/L	0.01	<0.01	
Methoxychior	LB006052	µg/L	0.1	<0.1	
Hexachlorobenzene	LB006052	μg/L	0.01	<0.01	91%
Alpha BHC	LB006052	μg/L	0.05	<0,05	
Beta BHC	LB006052	pg/L	0,05	<0.05	
Delta BHC	LB006052	µg/L	0.05	<0.05	
Endrin Ketone	LB006052	μg/L	0.05	<0.05	1964 1971
Heplachlor epoxide	LB006052	μg/L	0.02	<0.02	

Surrogates

Parameter	QС Reference	Units	LOR	MB	LCS %Recovery
d14-p-terphenyl (Surrogate)	LB006052	%	-	94.0	92%

Low Level OP Pesticides in Water Method: ME-(AU)-[ENV]AN400/AN420

Parameter p 1986	QC Reference	Units	LÓR	MB (	LCS %Recovery
Azinphos-methyl (Guthion)	LB006052	µg/L	0.05	<0.05	
Bromophos Ethyl	LB006052	µg/L	0.05	<0.05	
Diazinon (Dimpylale)	LB006052	µg/L	0.01	<0.01	84%
Dichlorvos	LB006052	pg/L	0.5	<0.5	
Ethion	LB006052	µg/L	0.05	<0.05	
Fenitrothion	LB006052	μg/L	0,2	<0.2	
Malathion	LB006052	μg/L	0.05	<0.05	
Methidathion	LB006052	µg/L	0.05	<0.05	NA

Surrogates

Parameter August 1994	QC Reference	Units	LOR	MB	LCS %Recovery
d14-p-terphenyl (Surrogate)	LB006052	%	i	94.0	92%

Low Level PCBs in Water Method: ME-(AU)-[ENV]AN400/AN420

Parameter	QC Reference	Units	LOR	MB;	LCS %Recovery
PCB Congener C28	LB006052	μg/L	0.02	<0.02	
PCB Congener C52	LB006052	μg/L	0.01	<0.01	
PCB Congener C101	LB006052	μg/L	0.004	<0.004	
PCB Congener C118	LB006052	μg/L	0.004	<0.004	
PCB Congener C138	LB006052	µg/L	0.004	<0.004	
PCB Congener C153	LB006052	μg/L	0.004	<0.004	4.4
PGB Congener C180	LB006052	μg/L	0.004	<0.004	118%

Surrogates

arameter.	QC Reference	Units	LOR	MB	LCS %Recovery
114-p-terphenyl (Surrogate)	LB006052	%	-	94.0	92%

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## **QC SUMMARY**

MB blank results are compared to the Limit of Reporting LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

Ultra Low Level OC Pesticides in Water Method: ME-(AU)-[ENV]AN400/AN420

Parameter.	QC Reference	Units	LOR	MB	LCS %Recovery
Heptachlor	LB006052	μg/L	0.01	<0.01	107%
Gamma Chiordane	LB006052	μg/L	0.002	<0.002	111%
Alpha Chlordane	LB006052	µg/L	0.002	<0.002	A HARA
Alpha Endosulfan	L8006052	μg/L	0.005	<0.005	
Dieldrin	LB006052	µg/L	0.002	<0.002	107%
Endrin	LB006052	μg/L	0.004	<0.004	109%
Beta Endosulfan	LB006052	µg/L	0.005	<0.005	
Endosulfan Sulphate	LB006052	μg/L	0.005	<0.005	
p,p'-DDT	LB006052	µg/L	0.002	<0.002	

Ultra Low Level OP Posticides in Water Method: ME-(AU)-[ENV]AN400/AN420

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chlorpyrifos (Chlorpyrifos Ethyl)	LB006052	μg/L	0.009	<0.009	73%
Parathion-ethyl (Parathion)	LB006052	µg/L	0.004	<0.004	110%





### **METHOD SUMMARY**

METHOD --METHODOLÓGY SUMMARY AN083 Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples. AN400 OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.) AN400 OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.) AN420 SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). AN420 SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

Insufficient sample for analysis. IS LNR Sample listed, but not received.

This analysis is not covered by the scope of accreditation.

Performed by outside laboratory.

LOR Limit of Reporting

Raised or Lowered Limit of Reporting 11

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QFH QC result is above the upper tolerance QFL QC result is below the lower tolerance NA

The sample was not analysed for this analyte

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-p!an-en-09.pdf

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17 September 2010

**Douglas Partners Pty Ltd** 

96 Hermitage Road WEST RYDE NSW 2114

Attention:

Lindsay Rockett

Your Reference:

71976-01-Randwick Spec-Stable Precinct Cont Asses

Our Reference:

SE81160

Samples: Received: 5 Waters 6/09/2010

17/09/2010

These samples were analysed in accordance with your written instructions.

For and on Behalf of:

Preliminary Report Sent:

SGS ENVIRONMENTAL SERVICES

Sample Receipt:

Angela Mamalicos

AU.SampleReceipt.Sydney@sgs.com

Production Manager:

**Huong Crawford** 

Huong.Crawford@sgs.com

Results Approved and/or Authorised by:

Dong Liang Quality Manager

Organics Signatory

Huong **E**rawford

Metals Signatory



ACCREDITATION

This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562 (4354). This report must not be reproduced except in full.

Page 1 of 24

MBTEX in Water (μg/L)				
Our Reference:	UNITS	SE81160-1	SE81160-2	SE81160-5
Your Reference		BH2	BH5	TB1
Sample Matrix		Water	Water	Water
Date Extracted (MBTEX)		9/09/2010	9/09/2010	9/09/2010
Date Analysed (MBTEX)		9/09/2010	9/09/2010	9/09/2010
Methyl-tert-butyl ether (MtBE)	μg/L	<1	<1	<1
Benzene	µg/L	<0.5	<0.5	<0.5
Toluene	µg/L	<0.5	<0.5	<0.5
Ethylbenzene	μg/L	<0.5	<0.5	<0.5
Total Xylenes	µg/L	<1.5	<1.5	<1.5
Surrogate	%	107	93	101

REPORT NO: SE81160 PROJECT: 71976-01-Randwick Spec-Stable Precinct Cont Asses

BTEX in Water (µg/L)		
Our Reference:	UNITS	SE81160-4
Your Reference		TS1
Sample Matrix		Water
Date Extracted (BTEX)		9/09/2010
Date Analysed (BTEX)		9/09/2010
Benzene	μg/L	101%
Toluene	μg/L	104%
Ethylbenzene	μg/L	99%
Total Xylenes	μg/L	96%
Surrogate	%	94

PROJECT: 71976-01-Randwick Spec-Stable Precinct Cont Asses REPORT NO: SE81160

TRH C6-C9 by P/T ONLY-in water		
Our Reference:	UNITS	SE81160-5
Your Reference		TB1
Sample Matrix		Water
Date Extracted (TRH C6-C9 PT)	-	9/09/2010
Date Analysed (TRH C6-C9 PT)		9/09/2010
TRH Cs - Ce P&T in µg/L	μg/L	<40

### PROJECT: 71976-01-Randwick Spec-Stable Precinct Cont Asses REPORT NO: SE81160

TRH in water with C6-C9 by P/T			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
Date Extracted (TRH C6-C9 PT)		9/09/2010	9/09/2010
Date Analysed (TRH C6-C9 PT)		9/09/2010	9/09/2010
TRH C6 - C9 P&T in µg/L	μg/L	<40	<40
Date Extracted (TRH C10-C36)		9/09/2010	9/09/2010
Date Analysed (TRH C10-C36)		9/09/2010	9/09/2010
TRH C10 - C14	μg/L	<100	<100
TRH C15 - C28	μg/L	<200	<200
TRH C29 - C36	µg/L	<200	<200

PAHs in Water				
Our Reference:	UNITS	SE81160-1	SE81160-2	SE81160-3
Your Reference		BH2	BH5	BD1/03091 0
Sample Matrix		Water	Water	Water
Date Extracted		9/09/2010	9/09/2010	9/09/2010
Date Analysed		9/09/2010	9/09/2010	9/09/2010
Naphthalene	μg/L	<0.50	<0.50	<0.50
2-Methylnaphthalene	μg/L	<0.5	<0.5	<0.5
1-Methylnaphthalene	μg/L	<0.5	<0.5	<0.5
Acenaphthylene	μg/L	<0.50	<0.50	<0.50
Acenaphthene	μg/L	<0.50	<0.50	<0.50
Fluorene	μg/L	<0.50	<0.50	<0.50
Phenanthrene	μg/L	<0.50	<0.50	<0.50
Anthracene	μg/L	<0.50	<0.50	<0.50
Fluoranthene	µg/L	<0.50	<0.50	<0.50
Pyrene	μg/L	<0.50	<0.50	<0.50
Benzo[a]anthracene	µg/L	<0.50	<0.50	<0.50
Chrysene	µg/L	<0.50	<0.50	<0.50
Benzo[b,k]fluoranthene	µg/L	<1.0	<1.0	<1.0
Benzo[a]pyrene	µg/L	<0.50	<0.50	<0.50
Indeno[123-cd]pyrene	µg/L	<0.50	<0.50	<0.50
Dibenzo[ah]anthracene	μg/L	<0.50	<0.50	<0.50
Benzo[ghi]perylene	μg/L	<0.50	<0.50	<0.50
Total PAHs	µg/L	<9	<9	<9
Nitrobenzene-d5	%	81	82	83
2-Fluorobiphenyl	%	82	87	88
p -Terphenyl-d14	%	88	101	98

REPORT NO: SE81160 PROJECT: 71976-01-Randwick Spec-Stable Precinct Cont Asses

OCP's Ultra Low LOR-95% ANZECC /ADWG			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
OCP's Ultra Low	ug/L	#	#



Ultra Low Level OP-ANZECC 95% by GCMS			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
Ultra Low Level OP	μg/L	#	#



PCBs in Water			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
PCB low level	μg/L	#	#



Phenols in Water			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
Date Extracted (Phenols)		13/09/2010	13/09/2010
Date Analysed (Phenois)		13/09/2010	13/09/2010
Total Phenolics (as Phenol)	mg/L	<0.01	<0.01



Inorganics			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
Date Extracted (pH)		8/09/2010	8/09/2010
Date Analysed (pH)		8/09/2010	8/09/2010
рН	pH Units	6.0	5.8



REPORT NO: SE81160 PROJECT: 71976-01-Randwick Spec-Stable Precinct Cont Asses

Anions in water			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
Date Extracted		10/09/2010	10/09/2010
Date Analysed		10/09/2010	10/09/2010
Chloride, Cl	mg/L	35	46
Sulphate, SO4	mg/L	95	38

Trace HM (ICP-MS)-Dissolved	:			
Our Reference:	UNITS	SE81160-1	SE81160-2	SE81160-3
Your Reference		BH2	BH5	BD1/03091 0
Sample Matrix		Water	Water	Water
Date Extracted (Metals-ICPMS)		8/09/2010	8/09/2010	8/09/2010
Date Analysed (Metals-ICPMS)		8/09/2010	8/09/2010	8/09/2010
Arsenic	μg/L	<1	<1	<1
Cadmium	µg/L	<0.1	<0.1	<0.1
Chromium	μg/L	2	<1	2
Copper	μg/L	12	2	12
Lead	μg/L	<1	<1	<1
Nickel	μg/L	<1	1	<1
Zinc	µg/L	17	15	15

Mercury Cold Vapor/Hg Analyser				
Our Reference:	UNITS	SE81160-1	SE81160-2	SE81160-3
Your Reference		BH2	BH5	BD1/03091 0
Sample Matrix		Water	Water	Water
Date Extracted (Mercury)		8/09/2010	8/09/2010	8/09/2010
Date Analysed (Mercury)		8/09/2010	8/09/2010	8/09/2010
Mercury (Dissolved)	mg/L	<0.0001	<0.0001	<0.0001



Hardness as CaCO3			
Our Reference:	UNITS	SE81160-1	SE81160-2
Your Reference		BH2	BH5
Sample Matrix		Water	Water
Date Extracted (Metals)		17/09/2010	17/09/2010
Date Analysed (Metals)		17/09/2010	17/09/2010
Calcium (Dissolved)	mg/L	39	33
Magnesium (Dissolved)	mg/L	5.4	6.2
Hardness as CaCO3 (by calc.)	mg/L	120	108

Method ID	Methodology Summary
SEO-018	BTEX / C6-C9 Hydrocarbons - Soil samples are extracted with methanol, purged and concentrated by a purge and trap apparatus, and then analysed using GC/MS technique. Water samples undergo the same analysis without the extraction step. Based on USEPA 5030B and 8260B.
SEO-020	Total Recoverable Hydrocarbons - determined by solvent extraction with dichloromethane / acetone for soils and dichloromethane for waters, followed by instrumentation analysis using GC/FID.  Where applicable Solid Phase Extraction Manifold technique is used for aliphatic / aromatic fractionation.
SEO-030	Polynuclear Aromatic Hydrocarbons - determined by solvent extraction with dichloromethane / acetone for soils and dichloromethane for waters, followed by instrumentation analysis using GC/MS SIM mode.
AN420	Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates, and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD/FID technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
Ext-003	Analysis subcontracted to SGS Environmental Services Perth, NATA Accreditation No. 2562, Site No. 898.
AN289	Total Phenols - Determined by colourimetric method using Discrete Analyser, following distillation of the sample. Based on APHA 21st Edition 5530B and 5530D.
AN101	pH - Measured using pH meter and electrode based on APHA 21st Edition, 4500-H+. For water analyses the results reported are indicative only as the sample holding time requirement specified in APHA was not met (APHA requires that the pH of the samples are to be measured within 15 minutes after sampling).
SEI-038	Water Soluble Chloride After carrying out a 1:5 soil:water extraction, an aliquot of the extract is reacted with mercuric thiocyanate forming a mercuric chloride complex. In the presence of ferric iron, highly coloured ferric thiocyanate is formed which is proportional to the chloride concentration. Reference NEPM, Schedule B(3), 401 and APHA 4500CI-
	Water Soluble Sulphate After carrying out a 1:5 soil:water extraction ,sulphate in the extract is precipitated in an acidic medium with barium chloride. The resulting turbidity is measured photometrically at 405nm and compared with standard calibration solutions to determine the sulphate concentration in the sample. Reference NEPM, Schedule B(3), 401 and APHA 4500-SO42
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
SEM-005	Mercury - determined by Cold-Vapour AAS following appropriate sample preparation or digestion process. Based on APHA 21st Edition, 3112B.
SEM-010	Determination of elements by ICP-OES following appropriate sample preparation / digestion process. Based on USEPA 6010C / APHA 21st Edition, 3120B.
AN124	Hardness - determined by a calculation based on the Calcium and Magnesium content of the sample, in accordance with APHA 21st Edition, 2340B.



Method ID	Methodology Summary



#### PROJECT: 71976-01-Randwick Spec-Stable Precinct Cont Asses

QUALITY CONTROL MBTEX in Water (μg/L)	UNITS	LOR	METHOD	Blank
Date Extracted (MBTEX)				09/09/1 0
Date Analysed (MBTEX)				09/09/1 0
Methyl-tert-butyl ether (MtBE)	µg/L	1	SEO-018	<1
Benzene	µg/L	0.5	SEO-018	<0.5
Toluene	µg/L	0.5	SEO-018	<0.5
Ethylbenzene	μg/ <b>L</b>	0.5	SEO-018	<0.5
Total Xylenes	μg/L	1.5	SEO-018	<1.5
Surrogate	%	0	SEO-018	122

QUALITY CONTROL BTEX in Water (µg/L)	UNITS	LOR	METHOD	Blank
Date Extracted (BTEX)				09/09/1 0
Date Analysed (BTEX)				09/09/1 0
Benzene	μg/L	0.5	SEO-018	<0.5
Toluene	μg/L	0.5	SEO-018	<0.5
Ethylbenzene	µg/L	0.5	SEO-018	<0.5
Total Xylenes	μg/L	1.5	SEO-018	<1.5
Surrogate	%	0	SEO-018	122

QUALITY CONTROL TRH C6-C9 by P/T ONLY-in water	UNITS	LOR	METHOD	Blank
Date Extracted (TRH C6-C9 PT)				09/09/1 0
Date Analysed (TRH C6-C9 PT)				09/09/1 0
TRH C6 - C9 P&T in µg/L	µg/L	40	SEO-018	<40

REPORT NO: SE81160

QUALITY CONTROL  TRH in water with C6-C9 by P/T	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)				09/09/1 0	[NT]	[NT]	[NR]	[NR]
Date Analysed (TRH C6-C9 PT)				09/09/1 0	[NT]	[NT]	[NR]	[NR]
TRH Cs - Cs P&T in µg/L	µg/L	40	SEO-018	<40	[NT]	[NT]	[NR]	[NR]
Date Extracted (TRH C10-C36)				09/09/1 0	[NT]	[NT]	SE81160-1	09/09/10
Date Analysed (TRH C10-C36)				09/09/1 0	[NT]	[NT]	SE81160-1	09/09/10
TRH C10 - C14	μg/L	100	SEO-020	<100	[NT]	[NT]	SE81160-1	102%
TRH C15 - C28	μg/L	200	SEO-020	<200	[NT]	[NT]	SE81160-1	107%
TRH C29 - C36	μg/L	200	SEO-020	<200	[NT]	[TN]	SE81160-1	102%

QUALITY CONTROL PAHs in Water	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted				09/09/1	[NT]	[NT]	SE81160-2	09/09/10
Date Analysed				09/09/1	[NT]	[NT]	SE81160-2	09/09/10
Naphthalene	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	83%
2-Methylnaphthalene	μg/L	0.5	SEO-030	<0.5	[NT]	[NT]	[NR]	[NR]
1-Methylnaphthalene	µg/L	0.5	SEO-030	<0.5	[NT]	[TN]	[NR]	[NR]
Acenaphthylene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	81%
Acenaphthene	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	94%
Fluorene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	[NR]	[NR]
Phenanthrene	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	94%
Anthracene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	94%
Fluoranthene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	94%
Pyrene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	105%
Benzo[a]anthracene	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	[NR]	[NR]
Chrysene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	[NR]	[NR]
Benzo[b,k]fluoranthe ne	µg/L	1	SEO-030	<1.0	[NT]	[NT]	[NR]	[NR]
Benzo[a]pyrene	μg/L	0.5	SEO-030	<0.50	[NT]	[NT]	SE81160-2	73%
Indeno[123-cd]pyren e	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	[NR]	[NR]
Dibenzo[ah]anthrace ne	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	[NR]	[NR]
Benzo[ghi]perylene	µg/L	0.5	SEO-030	<0.50	[NT]	[NT]	[NR]	[NR]



QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
PAHs in Water						Base + Duplicate + %RPD		Duplicate + %RPD
Total PAHs	μg/L	9	SEO-030	<9	[NT]	[NT]	[NR]	[NR]
Nitrobenzene-d5	%	0	SEO-030	97	[NT]	[TN]	SE81160-2	90%
2-Fluorobiphenyl	%	0	SEO-030	87	[NT]	[NT]	SE81160-2	95%
p -Terphenyl-d 14	%	0	SEO-030	87	[NT]	[NT]	SE81160-2	107%

QUALITY CONTROL OCP's Ultra Low LOR-95% ANZECC /ADWG	UNITS	LOR	METHOD	Blank
OCP's Ultra Low	ug/L		AN420	<0.01

QUALITY CONTROL Ultra Low Level OP-ANZECC 95% by GCMS	UNITS	LOR	METHOD	Blank
Ultra Low Level OP	μg/L		AN420	<0.5

QUALITY CONTROL PCBs in Water	UNITS	LOR	METHOD	Blank
PCB low level	µg/L		Ext-003	<0.1

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
Phenols in Water						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (Phenols)				13/09/2 010	[NT]	[TM]	LCS	13/09/2010
Date Analysed (Phenols)				13/09/2 010	[NT]	[NT]	LCS	13/09/2010
Total Phenolics (as Phenol)	mg/L	0.01	AN289	<0.01	[NT]	[NT]	LCS	90%

QUALITY CONTROL Inorganics	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD
Date Extracted (pH)				[TN]	SE81160-1	8/09/2010    8/09/2010
Date Analysed (pH)				[NT]	SE81160-1	8/09/2010    8/09/2010
pН	pH Units	0	AN101	[NT]	SE81160-1	6.0 [  6.0 [  RPD: 0

QUALITY CONTROL  Anions in water	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted				10/09/1	SE81160-1	10/09/2010 [  10/09/2010	SE81160-2	10/09/10
Date Analysed				10/09/1	SE81160-1	10/09/2010    10/09/2010	SE81160-2	10/09/10
Chloride, Cl	mg/L	0.05	SEI-038	<0.05	SE81160-1	35    35    RPD: 0	SE81160-2	98%
Sulphate, SO4	mg/L	0.1	SEI-038	<0.1	SE81160-1	95    95    RPD: 0	SE81160-2	100%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
Trace HM (ICP-MS)-Dissolved						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (Metals-ICPMS)				08/09/1	[NT]	[NT]	LCS	8/09/2010
Date Analysed (Metals-ICPMS)				08/09/1 0	[NT]	[NT]	LCS	8/09/2010
Arsenic	μg/L	1	AN318	<1	[NT]	[NT]	LCS	101%
Cadmium	μg/L	0.1	AN318	<0.1	[NT]	[NT]	LCS	94%
Chromium	μg/L	1	AN318	<1	[NT]	[NT]	LCS	102%
Copper	µg/L	1	AN318	<1	[NT]	[NT]	LCS	99%
Lead	μg/L	1	AN318	<1	[NT]	[NT]	LCS	96%
Nickel	µg/L	1	AN318	<1	[NT]	[TM]	LCS	102%
Zinc	µg/L	1	AN318	<1	[NT]	[NT]	LCS	97%



QUALITY CONTROL  Mercury Cold Vapor/Hg  Analyser	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (Mercury)				8/09/20 10	[NT]	[NT]	LCS	8/09/2010
Date Analysed (Mercury)				8/09/20 10	[NT]	[NT]	LCS	8/09/2010
Mercury (Dissolved)	mg/L	0.0001	SEM-005	<0.000 1	[NT]	[NT]	LCS	101%

QUALITY CONTROL  Hardness as CaCO3	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate  Base + Duplicate +	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
						%RPD		
Date Extracted (Metals)				17/09/2 010	[NT]	[NT]		08/09/10
Date Analysed (Metals)				17/09/2 010	[NT]	[NT]		08/09/10
Calcium (Dissolved)	mg/L	0.1	SEM-010	<0.1	[NT]	[NT]		109%
Magnesium (Dissolved)	mg/L	0.1	SEM-010	<0.1	[NT]	[TM]		110%
Hardness as CaCO3 (by calc.)	mg/L	1	AN124	[TN]	[NT]	[ТИ]	[NR]	[NR]

QUALITY CONTROL	UNITS	Dup. Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD	
MBTEX in Water (μg/L)			Base + Duplicate + %RPD			
Date Extracted (MBTEX)		[NT]	[NT]	SE81160-2	09/09/10	
Date Analysed (MBTEX)		[NT]	[NT]	SE81160-2	09/09/10	
Methyl-tert-butyl ether (MtBE)	µg/L	[NT]	[NT]	SE81160-2	121%	
Benzene	µg/L	[NT]	[NT]	SE81160-2	123%	
Toluene	μg/L	[NT]	[NT]	SE81160-2	127%	
Ethylbenzene	µg/L	[NT]	[NT]	SE81160-2	124%	
Total Xylenes	µg/L	[NT]	[NT]	SE81160-2	125%	
Surrogate	%	[NT]	[NT]	SE81160-2	92%	



QUALITY CONTROL  TRH in water with C6-C9 by P/T	UNITS	Dup. Sm#	Duplicate  Base + Duplicate +  %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Date Extracted (TRH C6-C9 PT)		[NT]	[NT]	SE81160-2	09/09/10
Date Analysed (TRH C6-C9 PT)		[ТИ]	[ТИ]	SE81160-2	09/09/10
TRH Cs - C9 P&T in µg/L	μg/L	[TN]	[TM]	SE81160-2	117%
Date Extracted (TRH C10-C36)		[ТИ]	[NT]	[NR]	[NR]
Date Analysed (TRH C10-C36)		[NT]	[NT]	[NR]	[NR]
TRH C10 - C14	µg/L	[NT]	[NT]	[NR]	[NR]
TRH C15 - C28	μg/L	[NT]	[NT]	[NR]	[NR]
TRH C29 - C36	μg/L	[דא]	[NT]	[NR]	[NR]

#### Result Codes

[[NS]] Insufficient Sample for this test

[NR] Not Requested [NT] Not tested

[LOR] : Limit of reporting

[RPD] : Relative Percentage Difference : Not part of NATA Accreditation

[N/A] : Not Applicable

#### Report Comments

Low level OC/OP/PCB analysed by SGS-Perth, report No. PE052327 R0, report attached. Samples analysed as received. Solid samples expressed on a dry weight basis.

Date Organics extraction commenced:

NATA Corporate Accreditation No. 2562, Site No 4354

Note: Test results are not corrected for recovery (excluding Air-toxics and Dioxins/Furans\*) This document is issued by the Company subject to its General Conditions of Service (www.sgs.com/terms\_and\_conditions.htm). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein.

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#### Quality Control Protocol

Method Blank: An analyte free matrix to which all reagents are added in the same volume or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. A method blank is prepared every 20 samples.

Duplicate: A separate portion of a sample being analysed that is treated the same as the other samples in the batch. One duplicate is processed at least every 10 samples.

Surrogate Spike: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are added to samples before extraction to monitor extraction efficiency and percent recovery in each sample.

Internal Standard: Added to all samples requiring analysis for organics (where relevant) or metals by ICP after the extraction/digestion process; the compounds/elements serve to give a standard of retention time and/or response, which is invariant from run-to-run with the instruments.

Laboratory Control Sample: A known matrix spiked with compound(s) representative of the target analytes. It is used to document laboratory performance. When the results of the matrix spike analysis indicates a potential problem due to the sample matrix itself, the LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

Matrix Spike: An aliquot of sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

#### Quality Acceptance Criteria

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf



ACCREDITATION

# Appendix F

Quality Assurance and Quality Control



# QA/QC PROCEDURES AND RESULTS

#### Q1. FIELD QUALITY ASSURANCE AND QUALITY CONTROL

The field QC procedures for sampling as prescribed in Douglas Partners *Field Procedures Manual* were followed at all times during the assessment.

#### Q1.1 Sampling Team

Field sampling was undertaken by DP Environmental Scientist Nizam Ahamed. Soil samples were collected on 20, 23 August and 3 September 2010. Sampling was undertaken during fine or overcast weather conditions.

#### Q1.2 Sample Collection

Sample collection procedures and dispatch are reported in Section 8.

#### Q1.3 Logs

Logs for each sampling location were recorded in the field. The individual samples were recorded on the field logs along with the sample identity, location, depth, initials of sampler, duplicate locations, duplicate type, site observations. Analysis to be performed on each sample and the dispatch courier were recorded on the COC, Appendix E. Logs are presented in Appendix D.

#### Q1.4 Chain of Custody

Chain of custody information was recorded on the Chain of Custody (COC) sheets and accompanied samples to the analytical laboratory. Signed copies of COCs are presented in Appendix D, following the laboratory reports.

#### Q1.5 Sample Splitting Techniques

Replicate and triplicate samples were collected in the field as a measure of accuracy, precision and repeatability of the results. Field replicate samples for soil were collected from the same location and an identical depth to the primary sample. Equal portions of the primary sample were placed into the sampling jars and sealed. The sample was not homogenised in a bowl and then split to prevent the loss of volatiles from the soil. Replicate samples were labelled with a DP identification number, recorded on DP bore logs, so as to conceal their relationship to their primary sample from the analysing laboratory.



#### Q1.6 Duplicate Frequency

Field sampling comprised replicate and triplicate sampling, at a rate of approximately one duplicate sample for every ten original samples for intra-laboratory analysis.

#### Q1.7 Field Blank Results

A field blank is a sample taken as an indication to demonstrate correct field handling. A rinsate sample was not required within the scope of the current assessment. This is further discussed in Section Q1.9.

#### Q1.8 Background Sample

A background sample is representative of natural background soil conditions. Background samples were collected from the natural soils as part of this assessment to assess the chemical characteristics local natural soils.

#### Q1.9 Rinsate Samples

Soil samples were collected from auger cuttings and test pit returns by hand while wearing disposable gloves which were changed between samples. Therefore no rinsate sample was required. It also noted that the results of the soil and groundwater samples do not show any evidence of cross contamination.

#### Q1.10 Trip Spikes

According to the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (1997), laboratory prepared trip spikes are to be taken into the field, subjected to the same preservation methods as the field samples, then analysed, for the purposes of determining the losses in volatile organics incurred prior to reaching the laboratory.

The practicalities of trip spikes are currently being debated and a detailed procedure is yet to be finalised. Discussions with the laboratory indicated that trip spikes are generally prepared as aqueous solutions. The laboratory prepared an aqueous trip spike and two soil trip spikes which were preserved in the standard manner and taken into the field unopened. The volatile organic recovery rates are shown below. At this stage, the laboratory has no standard acceptance limits in recovery rates as results from in-house laboratory controls often vary. Results (Table D1) indicate that the percentage loss for BTEX during the trip was minimal and therefore appropriate preservation techniques were employed.



**Table D1: Trip Spike Results** 

Sample ID	Matrix	Recovery (%)				
		Benzene	Toluene	Ethyl Benzene	Total xylene	
Trip Spike 200810	soil	60%	66%	84%	64%	
Trip Spike 230810	soil	90%	83%	84%	86%	
Trip Spike 030910	water	101%	104%	99%	96%	

#### Q1.11 Trip Blanks

Laboratory prepared soil and water trip blanks were taken out to the field unopened, subjected to the same preservation methods as the field samples, then analysed for the purposes of determining the transfer of contaminants into the blank sample incurred prior to reaching the laboratory. The result of the laboratory analysis for the trip blanks is shown in Tables D2.

Table D2: Trip Blank Results – TPH/BTEX mg/kg

Sample ID	matrix	Benzene	Toluene	Ethyl Benzene	Total xylene
Trip Blank 200810	soil	<0.5	<0.5	<1	<3
Trip Blank 230810	soil	<0.5	<0.5	<1	<3
Trip Blank 030910	water	<0.5	<0.5	<0.5	<1.5

Levels of analytes were all below detection limits for soil and groundwater indicating that cross contamination had not occurred during the course of the round trip from the site to the laboratory.

#### Q1.12 Field Instrument Calibration

All soil samples were screened for the presence of Total Photo-Ionisable Compounds (TOPIC) using a calibrated Photo-Ionisation Detector (PID). The PID was calibrated at Enviroequip and in the field with Isobutylene gas.

#### Q1.13 Relative Percentage Difference

A measure of the consistency of results for field samples is derived by the calculation of relative percentage differences (RPDs) for duplicate samples. A RPD of +/- 30% is generally considered typically acceptable for inorganic analytes by EPA, although in general a wider RPD range (50%) may be acceptable for organic analytes.



#### Q1.13.1 Intra-Laboratory Analysis

Intra-laboratory duplicates were conducted as an internal check of the reproductively within the primary laboratory (SGS Pty Ltd) and as a measure of consistency of sampling techniques. Replicate samples were collected at a rate of approximately one replicate sample for every ten original samples collected and also analysed at a rate of 10% of primary samples analysed. In total, one soil sample and one groundwater sample and their intra-laboratory replicate pairs were analysed for heavy metals, TPH and PAHs.

The comparative results of analysis between original and duplicate samples are summarised in the tables below.

Table D3: Intra-laboratory Soil Results Heavy Metals

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
BH2/ 0.3-0.6	<3	<0.3	3.8	50	280	0.22	1.5	92
BD1/ 200810	<3	<0.3	1.8	34	73	0.1	<0.5	58
Difference	0	0	2	16	207	0.12	1	34
RPD (%)	0	0	71	38	117	75	100	45

Table D4: Intra-laboratory Soil Results TPH

	C6-C9	C10-C36
2/0.4-0.5	<20	<120
BD2 230810	<20	<120
Difference	0	0
RPD (%)	0	0

Most of calculated RPD values were within the acceptable range of  $\pm$  30 for inorganic analytes ( $\pm$  50% for organic) for the sample and its duplicates with the exception of chromium. However, this is not considered to be of concern due to:

The low actual differences in the concentrations of the replicate pairs;

- Replicates, rather than homogenised duplicates were used to avoid volatile loss;
- The duplicate samples being collected in filling material which is heterogeneous in nature, therefore differences are representative of the material and not the result inconsistencies in the sampling technique or laboratory precision; and
- Most of the recorded concentrations being at/ close to the practical quantitation limit.
- All other QA/QC parameters met the DQI's



Table D5: Intra-laboratory Groundwater Results Heavy Metals and TPH

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	B(a)P	PAH
BH2	<1	<0.1	2	12	<1	<0.1	<1	17	<0.5	<pql< td=""></pql<>
BD1/030910	<1	<0.1	2	12	<1	<0.1	<1	15	<0.5	<pql< td=""></pql<>
Difference	0	0	2	0	0	0	0	0	0	0
RPD (%)	0	0	0	0	0	0	0	0	0	0

The RPD for heavy metals and PAHs in the groundwater samples was found to be within the acceptable range ( $\pm$  30%). Therefore, it is considered that the results indicate an acceptable consistency between the groundwater sample and the replicate sample.

It is considered that the results, overall, indicate an acceptable consistency between the samples and their replicates and indicate that suitable field sampling methodology was adopted and laboratory precision was achieved.

#### Q2. LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

#### **Q2.1 Chain of Custody**

Chain of custody information was recorded on the Chain of Custody (COC) sheets and accompanied samples to the analytical laboratory. COCs contained receipt date and time and the identity of samples. Signed copies of COCs are presented in Appendix E, following the laboratory reports.

#### **Q2.2 Holding Times**

A review of the laboratory report sheets and chain-of-custody documentation indicated that holding times were met, as summarised in the table below.

**Table D6: Holding Times** 

Matrix	Analyte	Recommended maximum holding time	Holding time met
Soil	Heavy Metals: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	6 months	Yes
	TPH C <sub>6</sub> -C <sub>9</sub>	14 days	Yes
	TPH C <sub>10</sub> -C <sub>36</sub>	14 days	Yes
	BTEX	14 days	Yes
	PAH	14 days	Yes
	OCP	14 days	Yes



Matrix	Analyte	Recommended maximum holding time	Holding time met
	OPP	14 days	Yes
	PCB	14 days	Yes
	Phenols	14 days	Yes
	рН	7 days	Yes
	Asbestos	Nil	yes
	EC	7 days	Yes
	рН	7 days	Yes
	Sulphate	28 days	Yes
	Chloride	28 days	Yes
Water	Heavy Metals: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	6 months	Yes
	TPH C6-C9	14 days	Yes
	TPH C10-C36	14 days	Yes
	BTEX	14 days	Yes
	PAH	7 days	Yes
	OCP	7 days	Yes
	OPP	7 days	Yes
	Phenols	28 days	Yes

#### **Q2.3 Analytical Laboratory**

Samples were submitted to the following laboratories for analysis:

- Primary Laboratory: SGS Pty Ltd (Alexandria);
- Secondary Laboratory: Labmark Environmental Laboratories (Asquith)

Both laboratories are NATA accredited. SGS' accreditation number is 2562 and is accredited for compliance with ISO/IEC 17025. SGS' tests comply with NATA and NEPM. In house procedures are employed by Envirolab in the absence of documented standards.

Labmark's NATA accreditation number is: 13542. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA/ APHA documents.

#### **Q2.4 Analytical Methods**

The laboratory analytical methods are provided on the laboratory certificates in Appendix E.



The following QA/QC procedures were conducted by the laboratory. The results are included in the laboratory reports in Appendix E.

#### **Q2.5 Surrogate Spike**

This sample is prepared by adding a known amount of surrogate, which behaves similarly to the analyte, prior to analysis to each sample. The recovery result indicates the proportion of the known concentration of the surrogate that is detected during analysis. These results are within acceptance limits as specified in SGS's report, indicating that the extraction technique was effective.

The laboratory acceptance criteria for surrogate samples is generally 60-140% for organics; and 10-140% for SVOC and speciated phenols.

#### Q2.6 Practical Quantitation Limits - PQLs

The PQL is the lowest quantity of an analyte which can be detected during the analysis. PQLs at different analytical laboratories can differ based on the analytical techniques.

#### Q2.7 Reference and Daily Check Sample Results – Laboratory Control Sample (LCS)

This sample comprises spiking either a standard reference material or a control matrix (such as a blank of sand or water) with a known concentration of specific analytes. The LCS is then analysed and results compared against each other to determine how the laboratory has performed with regard to sample preparation and analytical procedure. LCSs are analysed at a frequency of 1 in 20, with a minimum of one analysed per batch.

The laboratory acceptance criteria for LCS samples is generally 70-130% for inorganic/ metals; and 60-140% for organics; and 10-140% for SVOC and speciated phenols.

#### **Q2.8 Laboratory Duplicate Results**

These are additional portions of a sample which are analysed in exactly the same manner as all other samples. The laboratory acceptance criteria for duplicate samples is: in cases where the level is <5xPQL - any RPD is acceptable; and in cases where the level is >5xPQL - 0-50% RPD is acceptable.

#### **Q2.9 Laboratory Blank Results**

The laboratory blank, sometimes referred to as the method blank or reagent blank is the sample prepared and analysed at the beginning of every analytical run, following calibration of the analytical apparatus. This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, it can be determined by processing solvents and reagents in exactly the same manner as for samples. Laboratory blanks are analysed at a frequency of 1 in 20, with a minimum of one per batch.



#### Q2.10 Matrix Spike

This is a sample duplicate prepared by adding a known amount of analyte prior to analysis, and then treated exactly the same as all other samples. The recovery result indicates the proportion of the known concentration of the analyte that is detected during analysis. The laboratory acceptance criteria for matrix spike samples is generally 70-130% for inorganic/metals; and 60-140% for organics; and 10-140% for SVOC and speciated phenols.

### Q2.11 Results of Laboratory QA

The laboratory QA for surrogate spikes, LCS, laboratory duplicate results, method blanks and matrix spikes were generally within the acceptance standards.

It was therefore considered that an acceptable level of laboratory precision and consistency was achieved and that surrogate spikes, LCS, laboratory duplicate results, method blanks and matrix spike results were of an acceptable level.