

RGS01219.1-AE

14 April 2016

Core Project Group Pty Ltd
122a Hannell Street
WICKHAM NSW 2293

Attention: Tom Elliot

Dear Tom,

RE: Proposed Development – 498-500 King Street, Newcastle West

Acid Sulfate Soil Assessment

As requested, Regional Geotechnical Solutions have undertaken an acid sulfate soil assessment at 498-500 King Street, Newcastle West, where it is proposed to demolish the existing structures and construct a new multistorey development. The development is likely to be a combined commercial and residential (upper floor units) structure with at least one basement level, although from initial discussions it is understood that this is not proposed for the development currently planned for Lot 2 and Lot 9.

The purpose of the assessment was to assess for the presence of acid sulfate soils at the site and the need for an acid sulfate soil management plan.

Sampling was undertaken by a Geotechnician from Regional Geotechnical Solutions (RGS) on 14 March 2016. Six boreholes were drilled to depths of between 0.8 and 4.0m below the existing surface. Engineering logs of the boreholes that describe the materials encountered are attached.

Online mapping produced by the Australian Soil Resource Information System (ASRIS) indicates that the site soils have a low probability of occurrence of acid sulfate soils.

Acid Sulfate Soils (ASS) produce sulphuric acid when exposed to oxygen due to the presence of iron sulphides in the form of pyrite within the soil matrix. These soils form when iron-rich sediments are deposited in saltwater or brackish water environments. Prior to oxidation, these pyritic soils are referred to as Potential ASS. ASS that have produced acid as a result of oxidation are referred to as Actual ASS. They typically occur in natural, low-lying coastal depositional environments below



approximately 5m AHD. In the field ASS are generally identified as saline sediments such as alluvial or estuarine soils or bottom sediments in creeks and estuaries.

The boreholes encountered a thin layer of gravelly clay fill overlying sand fill and gravelly sand fill to depths of between 0.5 and 1.6m. The fill overlies very loose to medium dense Aeolian sand to depths of between 3 and 5.4m that overlies marine sand. Groundwater was encountered at between 1.4 and 2.0m depth.

Eight samples obtained were screened for the presence of actual or potential ASS using methods 23Af and 22Bf of the ASSMAC Acid Sulfate Soils Manual. The test results are attached. The results indicated:

- The samples revealed pH_f values of 6.7 and 8.8 in distilled water. In this test, $pH < 4$ is an indicator of Actual ASS;
- The samples revealed pH_{FOX} values of 1.8 and 7.3 in hydrogen peroxide. Four samples (all sampled from between 2.9 and 4.0m depth) had values of less than 3 which in this test can be an indicator of Potential ASS.

To provide a more comprehensive assessment, four samples were submitted for Chromium Reducible Sulphur analysis. A summary of the test results are presented in Table 1.

Table 1: Summary of ASS CRS Test Results

Borehole	Depth (m)	Texture	Actual Acidity		Potential Acidity	
			TAA (mol H ⁺ /tonne)	sTAA (%pyrite S)	Acidity - S _{cr} (mol H ⁺ /tonne)	S _{cr} (% S)
BH3	2.9 – 3.0	Coarse	<2	<0.02	18	0.028
BH3	3.9 – 4.0	Coarse	13	0.02	<u>115</u>	<u>0.184</u>
BH4	2.9 – 3.0	Coarse	6	<0.02	<u>40</u>	<u>0.065</u>
BH4	3.9 – 4.0	Coarse	<u>19</u>	<u>0.03</u>	<u>179</u>	<u>0.287</u>

Notes: Acid trail (TAA and Acidity-Scr) action criteria of 18 mol H⁺/tonne
Sulfur trail (sTAA and Scr) action criteria of 0.03%

One of the samples (from 3.9 to 4.0m depth) recorded a Titratable Actual Acidity (TAA) and a Sulfidic-TAA above the adopted action criteria which indicates that the sample is an actual acid sulfate soil. Three of the samples (from between 2.9 to 4.0m depth) recorded Acidity-S_{cr} and oxidisable sulfur (S_{cr}) results above the adopted action criteria and are thus considered to be potential acid sulfate soils.

None of the samples tested from depths of 2m or shallower produced laboratory test results that indicate the presence of either actual or potential acid sulfate soils. Excavation of soils at depths of shallower than 2m from existing surface may be undertaken without the need for an acid sulfate soil management plan. Due to the presence of both actual and potential acid sulfate soils at depths of between 2.9 and 4m, excavation of site soils below 2m depth will require the preparation of an acid sulfate soil management plan.

It is recommended that in the absence of additional testing that the highest liming rate of 15kg/tonne or 30kg/m³ (based on a bulk density of 1.8tonne/m³ and a safety factor of 1.5) be



adopted for all soils excavated below 2m depth at the site. The lime used in neutralisation of these soils should be fine agricultural lime.

The findings presented in the report and used as the basis for recommendations presented herein were obtained using normal, industry accepted geotechnical practises and standards. To our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points. If site conditions encountered during construction vary significantly from those discussed in this report, Regional Geotechnical Solutions Pty Ltd should be contacted for further advice.

If you have any questions regarding this or any other project please contact the undersigned.

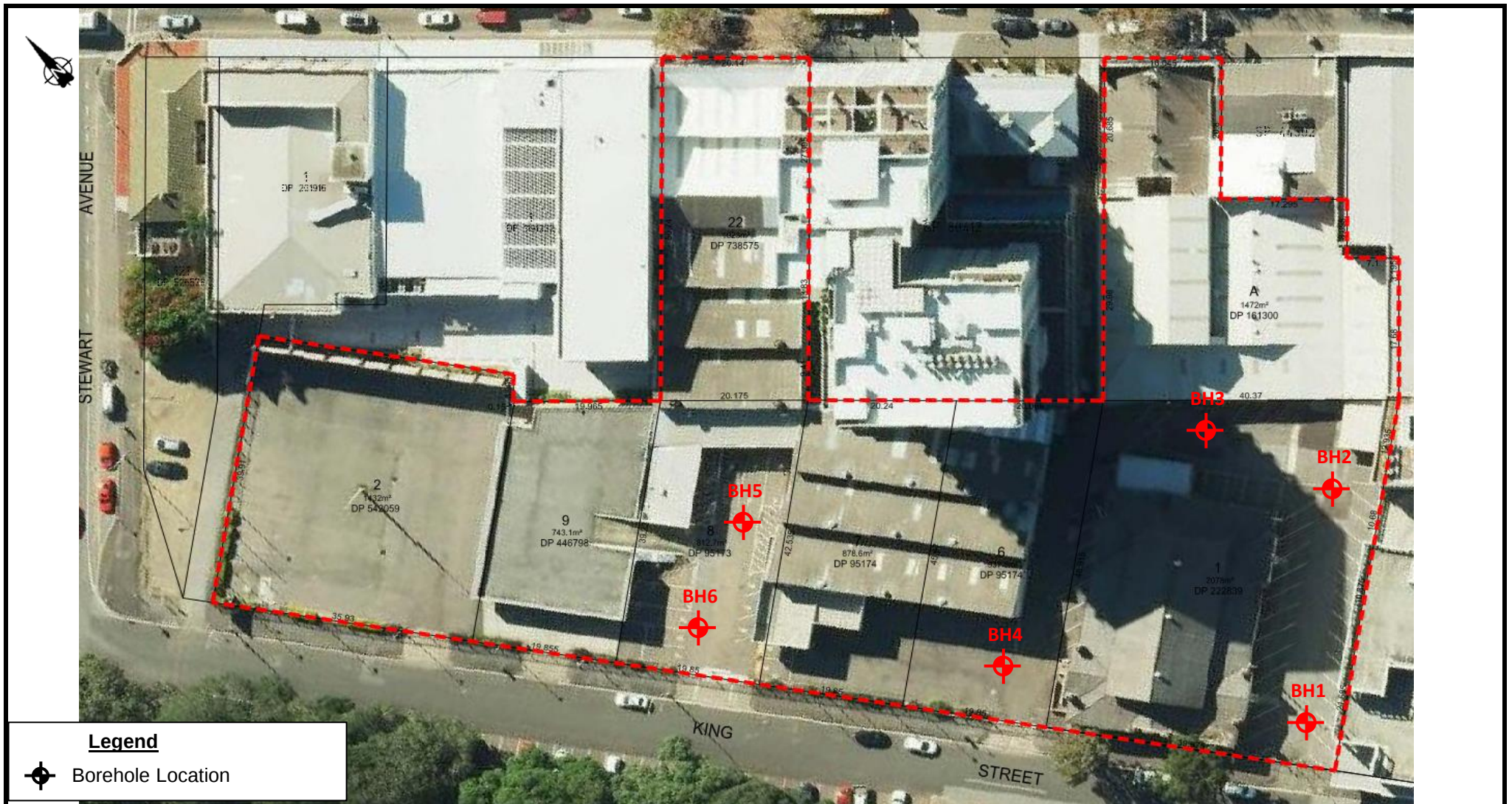
For and on behalf of

Regional Geotechnical Solutions Pty Ltd

Simon Keen

Geotechnical Engineer

Attachments: Figure 1
 Borehole logs
 Laboratory Test Results



	Client:	Core Project Group	Job No.	RGS01219.1
	Project:	Proposed Development	Drawn By:	SK
		498-500 King Street, Newcastle West	Scale:	As Shown
	Title:	Test Location Plan	Date:	23-Mar-16
			Drawing No.	Figure 1



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH01**

CLIENT: Core Project Group
PROJECT NAME: Commercial Development
SITE LOCATION: King Street, Newcastle West
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS01219.1
LOGGED BY: GM
DATE: 14/3/16

DRILL TYPE: RGS 4WD Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm
EASTING:
NORTHING:
SURFACE RL: Not Measured m
DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
Auger	Not Encountered	0.50m		0.5		GP	0.05m ASPHALT: 50mm	M				FILL
		SP	0.15m FILL: Gravelly CLAY, Low plasticity, orange/red, Gravel is medium grained FILL: SAND, Fine to medium grained, dark brown, dark grey, Quartz and some organic matter with some fine to medium grained Gravel									
		E 0.70m					0.80m Hole Terminated at 0.80 m					
				1.0								
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)			L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	



ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH02**

CLIENT: Core Project Group
PROJECT NAME: Commercial Development
SITE LOCATION: King Street, Newcastle West
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS01219.1
LOGGED BY: GM
DATE: 14/3/16

DRILL TYPE: RGS 4WD Mounted Drill Rig
BOREHOLE DIAMETER: 100 mm
INCLINATION: 90°
EASTING:
NORTHING:
SURFACE RL: Not Measured m
DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
Auger							0.05m 0.10m ASPHALT: 50mm					FILL
		0.40m E 0.50m		0.5		GC SP	FILL: Gravelly CLAY, Low plasticity, orange/red, Gravel is medium grained FILL: SAND, Fine to medium grained, dark grey, traces of gravel, coal, minor slag	M				
						SP	SAND: Fine to medium grained, pale grey Quartzose, minor shell fragments	M				AEOLIAN SOIL
				1.0		SP	SAND: Fine to medium grained, dark brown, trace organic cementation, Quartzose	M				
		1.40m E 1.50m		1.5		SP	SAND: Fine to medium grained, pale yellow, pale orange, Quartzose, trace shell fragments	M				
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
							Hole Terminated at 3.00 m					

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)			L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	



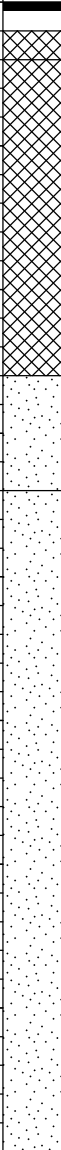
ENGINEERING LOG - BOREHOLE

BOREHOLE NO: **BH04**

CLIENT: Core Project Group
PROJECT NAME: Commercial Development
SITE LOCATION: King Street, Newcastle West
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS01219.1
LOGGED BY: GM
DATE: 14/3/16

DRILL TYPE: RGS 4WD Mounted Drill Rig EASTING: SURFACE RL: Not Measured m
BOREHOLE DIAMETER: 100 mm INCLINATION: 90° NORTHING: DATUM: AHD

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
Auger							0.10m ASPHALT:					FILL
						GP	0.20m FILL: Gravelly CLAY, Low plasticity, pale orange, gravel is medium grained, rounded					
		0.40m E 0.50m		0.5		SP	SAND: Fine to medium grained, dark grey, trace of plastic fines	M				
		0.90m ASS 1.00m		1.0								
		1.40m E 1.50m		1.5		SP	SAND: Fine to medium grained, pale yellow, pale grey, Quartzose	M				AEOLIAN SOIL
		1.90m ASS 2.00m		2.0		SP	SAND: Fine to medium grained, pale grey, Quartzose	M				
		2.40m		2.5				W				
		ASS		3.0								
		3.40m		3.5								
		ASS		4.0								
	4.00m		4.0				4.00m					
							Hole Terminated at 4.00 m					

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water Water Level (Date and time shown) Water Inflow Water Outflow		U ₅₀ 50mm Diameter tube sample CBR Bulk sample for CBR testing E Environmental sample ASS Acid Sulfate Soil Sample B Bulk Sample		VS Very Soft	<25		D Dry	
Strata Changes Gradational or transitional strata Definitive or distinct strata change		Field Tests PID Photoionisation detector reading (ppm) DCP(x-y) Dynamic penetrometer test (test depth interval shown) HP Hand Penetrometer test (UCS kPa)		S Soft	25 - 50		M Moist	
				F Firm	50 - 100		W Wet	
				St Stiff	100 - 200		W _p Plastic Limit	
				VSt Very Stiff	200 - 400		W _L Liquid Limit	
				H Hard	>400			
				Fb Friable				
				Density	V Very Loose	Density Index <15%		
					L Loose	Density Index 15 - 35%		
					MD Medium Dense	Density Index 35 - 65%		
					D Dense	Density Index 65 - 85%		
					VD Very Dense	Density Index 85 - 100%		

CLIENT: Core Project Group
PROJECT NAME: Commercial Development
SITE LOCATION: King Street, Newcastle West
TEST LOCATION: Refer to Figure 1

PAGE: 1 of 1
JOB NO: RGS01219.1
LOGGED BY: GM
DATE: 14/3/16

DRILL TYPE:	RGS 4WD Mounted Drill Rig	EASTING:		SURFACE RL:	Not Measured m
BOREHOLE DIAMETER:	100 mm	INCLINATION:	90°	NORTHING:	
				DATUM:	AHD

Drilling and Sampling					Material description and profile information						Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
Auger							0.10m ASPHALT: 50mm	M				FILL	
						GC	0.20m FILL: Gravelly CLAY, Low plasticity, pale orange, gravel medium to coarse grained, some sand					AEOLIAN SOIL	
		0.40m E		0.5		SP	0.50m SAND: Fine grained, dark grey, Quartzose					INDURATED SAND	
		0.50m				SP	0.80m SAND: Fine to medium grained, dark brown, organic rich, cemented						
				1.0		SP	SAND: Fine to medium grained, pale yellow, pale orange, Quartzose, trace shell	M				MARINE SOIL	
				1.5									
		1.40m E		2.0									
		1.50m		2.5		SP	2.40m SAND: Fine to medium grained, pale orange, pale grey, Quartzose						
				3.0			3.00m						
								Hole Terminated at 3.00 m					
				3.5									
				4.0									

LEGEND:

Water

-  Water Level
(Date and time shown)
-  Water Inflow
-  Water Outflow

Strata Changes

- — Gradational or transitional strata
—— Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|-----------------------------|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample |
| ASS | Acid Sulfate Soil Sample |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |

CERTIFICATE OF ANALYSIS

Work Order	: ES1605611	Page	: 1 of 23
Client	: REGIONAL GEOTECHNICAL SOLUTION	Laboratory	: Environmental Division Sydney
Contact	: MR STEVE MORTON	Contact	:
Address	: 44 BENT STREET	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
	WINGHAM NSW, AUSTRALIA 2429		
Telephone	: +61 02 6553 5641	Telephone	: +61-2-8784 8555
Project	: RGS01219.1 COMMERCIAL DEVELOPMENT	Date Samples Received	: 14-Mar-2016 14:10
Order number	: ----	Date Analysis Commenced	: 16-Mar-2016
C-O-C number	: ----	Issue Date	: 23-Mar-2016 17:42
Sampler	: ----		
Site	: ----		
Quote number	: ----		
No. of samples received	: 18		
No. of samples analysed	: 18		

NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD
Shaun Spooner	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

- ASS: EA033 (CRS Suite): Retained Acidity not required because pH KCl greater than or equal to 4.5
- **EA200: As only one sample container was submitted for multiple tests, sub sampling was conducted prior to Asbestos analysis. As this has the potential to understate detection, results should be scrutinised accordingly and NATA accreditation does not apply to analysis on these samples.**
- ASS: EA037 (Rapid Field and F(ox) screening): pH F(ox) Reaction Rate: 1 - Slight; 2 - Moderate; 3 - Strong; 4 - Extreme
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO₃) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m³ in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m³'.
- EA037 ASS Field Screening: NATA accreditation does not cover performance of this service.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH1_0.5-0.7	BH2_0.4-0.5	BH2_1.4-1.5	BH3_0.3-0.5	BH3_1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-001	ES1605611-002	ES1605611-003	ES1605611-004	ES1605611-005
				Result	Result	Result	Result	Result	Result
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	----	----	----	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	----	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	----	----	----	----
EA033-C: Acid Neutralising Capacity									
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	----	----	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	----	----	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	----	----	----	----	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	----	----	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	----	----	----
EA037: Ass Field Screening Analysis									
ø pH (F)	----	0.1	pH Unit	----	----	----	----	----	8.8
ø pH (Fox)	----	0.1	pH Unit	----	----	----	----	----	7.3
ø Reaction Rate	----	1	-	----	----	----	----	----	4
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%	4.2	6.4	19.2	8.1	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	----	----
Asbestos Type	1332-21-4	-	--	-	-	-	-	----	----
Sample weight (dry)	----	0.01	g	23.1	19.6	26.4	21.0	----	----
APPROVED IDENTIFIER:	----	-	--	G.MORGAN	G.MORGAN	G.MORGAN	G.MORGAN	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	10	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				BH1_0.5-0.7	BH2_0.4-0.5	BH2_1.4-1.5	BH3_0.3-0.5	BH3_1.0
Client sampling date / time				[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit	ES1605611-001	ES1605611-002	ES1605611-003	ES1605611-004	ES1605611-005
				Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES - Continued								
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	1	----
Chromium	7440-47-3	2	mg/kg	<2	<2	<2	18	----
Copper	7440-50-8	5	mg/kg	9	7	<5	33	----
Lead	7439-92-1	5	mg/kg	18	8	<5	180	----
Nickel	7440-02-0	2	mg/kg	4	<2	<2	11	----
Zinc	7440-66-6	5	mg/kg	38	13	<5	670	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH1_0.5-0.7	BH2_0.4-0.5	BH2_1.4-1.5	BH3_0.3-0.5	BH3_1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-001	ES1605611-002	ES1605611-003	ES1605611-004	ES1605611-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	1.4	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	4.8	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	4.8	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	1.9	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	1.9	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	2.6	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH1_0.5-0.7	BH2_0.4-0.5	BH2_1.4-1.5	BH3_0.3-0.5	BH3_1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-001	ES1605611-002	ES1605611-003	ES1605611-004	ES1605611-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	1.0	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	2.3	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	1.1	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	1.4	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	23.2	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	3.0	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	3.2	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	3.5	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	150	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	150	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	300	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	260	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	110	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	370	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH1_0.5-0.7	BH2_0.4-0.5	BH2_1.4-1.5	BH3_0.3-0.5	BH3_1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-001	ES1605611-002	ES1605611-003	ES1605611-004	ES1605611-005
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		76.8	74.4	75.1	71.9	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		87.6	79.2	78.8	106	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		69.9	63.4	66.7	61.1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		82.1	77.9	80.5	80.3	----
2-Chlorophenol-D4	93951-73-6	0.5	%		86.6	82.1	85.1	84.5	----
2,4,6-Tribromophenol	118-79-6	0.5	%		72.0	69.4	65.5	58.0	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		95.1	91.1	93.3	91.7	----
Anthracene-d10	1719-06-8	0.5	%		86.6	84.2	86.6	85.1	----
4-Terphenyl-d14	1718-51-0	0.5	%		87.4	84.3	87.2	85.3	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		102	89.2	83.9	85.9	----
Toluene-D8	2037-26-5	0.2	%		119	104	99.2	102	----
4-Bromofluorobenzene	460-00-4	0.2	%		116	105	94.4	99.3	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
Client sampling date / time				BH3_1.9-2.0	BH3_2.9-3.0	BH3_3.9-4.0	BH4_0.4-0.5	BH4_0.9-1.0
Compound				[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
CAS Number	LOR	Unit		ES1605611-006	ES1605611-007	ES1605611-008	ES1605611-009	ES1605611-010
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	7.6	4.9	----	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	13	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	<0.02	0.02	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	0.028	0.184	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	18	115	----	----
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	0.24	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	48	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	0.08	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	1.5	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	0.20	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	127	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	10	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	0.03	0.20	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	18	127	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	1	10	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	8.3	7.8	7.2	----	7.4
ø pH (Fox)	----	0.1	pH Unit	5.3	2.0	2.3	----	4.7
ø Reaction Rate	----	1	-	2	2	4	----	2
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	----	----	----	8.6	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	No	----
Asbestos Type	1332-21-4	-	--	----	----	----	-	----
Sample weight (dry)	----	0.01	g	----	----	----	23.1	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	S.SPOONER	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	----	<5	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH3_1.9-2.0	BH3_2.9-3.0	BH3_3.9-4.0	BH4_0.4-0.5	BH4_0.9-1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-006	ES1605611-007	ES1605611-008	ES1605611-009	ES1605611-010
					Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES - Continued									
Cadmium	7440-43-9	1	mg/kg		----	----	----	<1	----
Chromium	7440-47-3	2	mg/kg		----	----	----	4	----
Copper	7440-50-8	5	mg/kg		----	----	----	29	----
Lead	7439-92-1	5	mg/kg		----	----	----	86	----
Nickel	7440-02-0	2	mg/kg		----	----	----	5	----
Zinc	7440-66-6	5	mg/kg		----	----	----	94	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	----	----	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg		----	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	<0.2	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				BH3_1.9-2.0	BH3_2.9-3.0	BH3_3.9-4.0	BH4_0.4-0.5	BH4_0.9-1.0
Client sampling date / time				[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit	ES1605611-006	ES1605611-007	ES1605611-008	ES1605611-009	ES1605611-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	2.6	----
Anthracene	120-12-7	0.5	mg/kg	----	----	----	0.6	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	9.2	----
Pyrene	129-00-0	0.5	mg/kg	----	----	----	8.8	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	4.6	----
Chrysene	218-01-9	0.5	mg/kg	----	----	----	4.3	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	5.3	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH3_1.9-2.0	BH3_2.9-3.0	BH3_3.9-4.0	BH4_0.4-0.5	BH4_0.9-1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-006	ES1605611-007	ES1605611-008	ES1605611-009	ES1605611-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	----	2.1	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	----	5.0	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	----	1.8	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	----	1.8	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	----	46.1	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	----	6.4	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	----	6.7	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	----	6.9	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	----	----	----	<10	----
C10 - C14 Fraction	----	50	mg/kg	----	----	----	----	<50	----
C15 - C28 Fraction	----	100	mg/kg	----	----	----	----	170	----
C29 - C36 Fraction	----	100	mg/kg	----	----	----	----	170	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	----	340	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	----	290	----
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	----	110	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	----	400	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	----	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	----	----	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	----	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	----	----	----	----	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	----	----	----	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH3_1.9-2.0	BH3_2.9-3.0	BH3_3.9-4.0	BH4_0.4-0.5	BH4_0.9-1.0
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-006	ES1605611-007	ES1605611-008	ES1605611-009	ES1605611-010
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	78.4	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	129	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	72.9	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	----	82.4	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	----	87.0	----
2,4,6-Tribromophenol	118-79-6	0.5	%		----	----	----	78.1	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	----	93.7	----
Anthracene-d10	1719-06-8	0.5	%		----	----	----	86.0	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	----	86.5	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	89.2	----
Toluene-D8	2037-26-5	0.2	%		----	----	----	105	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	101	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
Client sampling date / time				BH4_1.9-2.0	BH4_2.9-3.0	BH5_0.4-0.6	BH5_1.4-1.5	BH6_0.4-0.5
Compound				[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
CAS Number	LOR	Unit		ES1605611-011	ES1605611-012	ES1605611-013	ES1605611-014	ES1605611-015
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	5.4	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	----	6	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	<0.02	----	----	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	0.065	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	40	----	----	----
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	----	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	----	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	----	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	0.07	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	47	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	3	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	0.07	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	47	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	3	----	----	----
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	7.4	7.4	----	----	----
ø pH (Fox)	----	0.1	pH Unit	5.1	2.1	----	----	----
ø Reaction Rate	----	1	-	2	2	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	----	----	8.4	18.4	3.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	No	No
Asbestos Type	1332-21-4	-	--	----	----	-	-	-
Sample weight (dry)	----	0.01	g	----	----	21.1	22.0	27.4
APPROVED IDENTIFIER:	----	-	--	----	----	S.SPOONER	S.SPOONER	S.SPOONER
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	28	<5	<5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4_1.9-2.0	BH4_2.9-3.0	BH5_0.4-0.6	BH5_1.4-1.5	BH6_0.4-0.5
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-011	ES1605611-012	ES1605611-013	ES1605611-014	ES1605611-015
					Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES - Continued									
Cadmium	7440-43-9	1	mg/kg		----	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		----	----	6	2	3
Copper	7440-50-8	5	mg/kg		----	----	48	<5	<5
Lead	7439-92-1	5	mg/kg		----	----	164	<5	9
Nickel	7440-02-0	2	mg/kg		----	----	9	<2	<2
Zinc	7440-66-6	5	mg/kg		----	----	213	22	21
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	----	0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	<0.2	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4_1.9-2.0	BH4_2.9-3.0	BH5_0.4-0.6	BH5_1.4-1.5	BH6_0.4-0.5
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-011	ES1605611-012	ES1605611-013	ES1605611-014	ES1605611-015
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	----	12.0	<0.5	17.0
Anthracene	120-12-7	0.5	mg/kg		----	----	1.8	<0.5	2.3
Fluoranthene	206-44-0	0.5	mg/kg		----	----	26.6	0.6	15.0
Pyrene	129-00-0	0.5	mg/kg		----	----	24.9	0.6	12.8
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	9.0	<0.5	4.2
Chrysene	218-01-9	0.5	mg/kg		----	----	8.6	<0.5	3.7
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	10.1	<0.5	4.1



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4_1.9-2.0	BH4_2.9-3.0	BH5_0.4-0.6	BH5_1.4-1.5	BH6_0.4-0.5
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-011	ES1605611-012	ES1605611-013	ES1605611-014	ES1605611-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	3.5	<0.5	1.6
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	9.4	<0.5	3.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	4.0	<0.5	1.6
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	0.8	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	4.5	<0.5	1.8
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	115	1.2	67.6
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	13.0	<0.5	4.7
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	13.0	0.6	5.0
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	13.0	1.2	5.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	----	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	----	----	----	250	<100	110
C29 - C36 Fraction	----	100	mg/kg	----	----	----	180	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	430	<50	110
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	380	<100	150
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	120	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	500	<50	150
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	----	----	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	----	----	----	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	----	----	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	<1	<1



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4_1.9-2.0	BH4_2.9-3.0	BH5_0.4-0.6	BH5_1.4-1.5	BH6_0.4-0.5
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]
Compound	CAS Number	LOR	Unit		ES1605611-011	ES1605611-012	ES1605611-013	ES1605611-014	ES1605611-015
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	74.5	70.4	77.6
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	126	77.1	117
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	65.8	65.1	63.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	78.2	79.3	82.0
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	82.5	83.5	85.9
2,4,6-Tribromophenol	118-79-6	0.5	%		----	----	75.0	65.7	66.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	89.5	90.4	94.5
Anthracene-d10	1719-06-8	0.5	%		----	----	80.7	84.7	83.6
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	83.2	85.0	85.0
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	88.7	86.5	92.0
Toluene-D8	2037-26-5	0.2	%		----	----	114	94.2	109
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	106	97.2	106



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH6_1.4-1.5	BH11_0.5-0.7	BH4_3.9-4.0	----	----
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	----	----
Compound	CAS Number	LOR	Unit		ES1605611-016	ES1605611-017	ES1605611-018	-----	-----
				Result	Result	Result	Result	Result	Result
EA033-A: Actual Acidity									
pH KCl (23A)	----	0.1	pH Unit	----	----	5.0	----	----	----
Titrateable Actual Acidity (23F)	----	2	mole H+ / t	----	----	19	----	----	----
sulfidic - Titrateable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	0.03	----	----	----
EA033-B: Potential Acidity									
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	0.287	----	----	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	179	----	----	----
EA033-C: Acid Neutralising Capacity									
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	----	----	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	----	----	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	----	----	----	----	----
EA033-E: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-	----	----	1.5	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	0.32	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	198	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	15	----	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	0.32	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	198	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	15	----	----	----
EA037: Ass Field Screening Analysis									
ø pH (F)	----	0.1	pH Unit	----	----	6.7	----	----	----
ø pH (Fox)	----	0.1	pH Unit	----	----	1.8	----	----	----
ø Reaction Rate	----	1	-	----	----	3	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%	7.3	3.6	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	----	----
Asbestos Type	1332-21-4	-	--	-	-	----	----	----	----
Sample weight (dry)	----	0.01	g	30.5	24.3	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	G.MORGAN	G.MORGAN	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH6_1.4-1.5	BH11_0.5-0.7	BH4_3.9-4.0	----	----
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	----	----
Compound	CAS Number	LOR	Unit		ES1605611-016	ES1605611-017	ES1605611-018	-----	-----
					Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES - Continued									
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		4	2	----	----	----
Copper	7440-50-8	5	mg/kg		<5	11	----	----	----
Lead	7439-92-1	5	mg/kg		<5	27	----	----	----
Nickel	7440-02-0	2	mg/kg		<2	5	----	----	----
Zinc	7440-66-6	5	mg/kg		<5	60	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				BH6_1.4-1.5	BH11_0.5-0.7	BH4_3.9-4.0	----	----
Client sampling date / time				[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	----	----
Compound	CAS Number	LOR	Unit	ES1605611-016	ES1605611-017	ES1605611-018	-----	-----
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH6_1.4-1.5	BH11_0.5-0.7	BH4_3.9-4.0	----	----
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	----	----
Compound	CAS Number	LOR	Unit		ES1605611-016	ES1605611-017	ES1605611-018	-----	-----
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH6_1.4-1.5	BH11_0.5-0.7	BH4_3.9-4.0	----	----
Client sampling date / time					[14-Mar-2016]	[14-Mar-2016]	[14-Mar-2016]	----	----
Compound	CAS Number	LOR	Unit		ES1605611-016	ES1605611-017	ES1605611-018	-----	-----
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		84.1	81.2	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		84.8	84.0	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		69.8	71.4	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		80.9	81.3	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		85.4	85.4	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		61.9	73.8	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		93.1	93.7	----	----	----
Anthracene-d10	1719-06-8	0.5	%		86.8	86.4	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		88.3	87.9	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		86.0	95.8	----	----	----
Toluene-D8	2037-26-5	0.2	%		98.9	104	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		101	101	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	BH1_0.5-0.7 - [14-Mar-2016]	Mid grey sandy soil.
EA200: Description	BH2_0.4-0.5 - [14-Mar-2016]	Mid grey sandy soil.
EA200: Description	BH2_1.4-1.5 - [14-Mar-2016]	Mid brown sandy soil.
EA200: Description	BH3_0.3-0.5 - [14-Mar-2016]	Mid grey - brown clay soil with grey rocks.
EA200: Description	BH4_0.4-0.5 - [14-Mar-2016]	Mid grey sandy soil.
EA200: Description	BH5_0.4-0.6 - [14-Mar-2016]	Mid grey sandy soil.
EA200: Description	BH5_1.4-1.5 - [14-Mar-2016]	White sandy soil.
EA200: Description	BH6_0.4-0.5 - [14-Mar-2016]	Pale grey sandy soil.
EA200: Description	BH6_1.4-1.5 - [14-Mar-2016]	Mid brown sandy soil.
EA200: Description	BH11_0.5-0.7 - [14-Mar-2016]	Mid grey sandy soil with grey rocks.



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130