coffey

Borehole No. **BH02**

Engineering Log - Monitoring Well

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***21.7.2015***

Principal:

Date completed: ***21.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***AC***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model & mounting: TRACK MOUNTED | Easting: 336178 | slope: -90° | R.L. Surface:

hole diameter: | Northing: 6245666 | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
							1			.			
							2						
							3						
							4						
							5						
							6						
							7						
							8						
							9			Borehole terminated at 9m			
							10						

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

support

C casing N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

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

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

PIEZOMETER GEOTLCOV24080AS.GPJ COFFEY.GDT 18.8.15

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Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	1 of 6
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**13 Jul 2015**
principal:	
date completed:	**16 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245739 (MGA94 Zone 56) surface elevation: 28.74 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
AD			E					**ROAD SURFACE: ASPHALT**: 0.05 m.	M			**ROAD SURFACE**
			E	28				**FILL: Gravelly SAND**: medium to coarse grained, grey, fine to coarse grained, sub-angular to angular gravel.				**FILL** PID=0.3ppm
								FILL: SAND: medium to coarse grained, grey, trace of fine to medium grained, sub-angular gravel.				PID=0.3ppm
			E SPT 1, 1, 1 N*=2		1.0							PID=0.3ppm
				27			SP	**SAND**: medium to coarse grained, orange-brown/grey.		MD		**MARINE DEPOSITS**
			E SPT 3, 3, 3 N*=6	26	2.0							PID=0.8ppm
				25	3.0							
W		Not Observed 05/08/15	SPT 4, 7, 9 N*=16	24	4.0		SP	**SAND**: fine to medium grained, grey/brown.		D		
			SPT 11, 16, 18 N*=34	23	5.0							
				22	6.0							
			SPT 35/100mm N*=R	21	7.0					VD		

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method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remoulded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

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Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	2 of 6
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**13 Jul 2015**
principal:	
date completed:	**16 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245739 (MGA94 Zone 56) surface elevation: 28.74 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description **SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed	SPT 40/120mm N*=R	20	9.0		SP	**SAND**: fine to medium grained, grey/brown. *(continued)*	M	VD		**MARINE DEPOSITS**
			SPT 40, 40/100mm N*=R	19	10.0							
			SPT 6, 6, 8 N=14	18	11.0					MD		
			SPT 35, 35/100mm N=R	17	12.0					VD		
			SPT 35, 30/70mm N=R	16	13.0							
				15	14.0							
				14	15.0							
				13								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description
based on Unified Classification System

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

consistency / relative density

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

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Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	3 of 6
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**13 Jul 2015**
principal:	
date completed:	**16 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245739 (MGA94 Zone 56) surface elevation: 28.74 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed	SPT 20, 30/70mm N*=R	12	17.0		SP	**SAND**: fine to medium grained, grey/brown. *(continued)*	M	VD		**MARINE DEPOSITS**
			SPT 35, /120mm N*=R	11	18.0							
				10	19.0							
				9	20.0							
			SPT 40/100mm N=R	8	21.0							
				7	22.0							
				6	23.0							
			SPT 35/130mm N*=R	5								

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method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

coffey

Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	4 of 6
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**13 Jul 2015**
principal:	
date completed:	**16 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245739 (MGA94 Zone 56) surface elevation: 28.74 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed		4	25.0		SP	**SAND**: fine to medium grained, grey/brown. *(continued)*	M	VD		**MARINE DEPOSITS**
				3			SP	**SAND**: fine to medium grained, grey/brown, with some clay lenses.				
			SPT 40/120mm N=R	2	26.0							
				1	27.0							
				0	28.0							
			SPT 11, 15, 24 N*=39	-1	29.0		SP	**SAND**: fine to medium grained, orange-brown/grey, with some medium plasticity clay.		D		
				-2	30.0							
				-3	31.0							

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method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

coffey

Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	5 of 6
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**13 Jul 2015**
principal:	
date completed:	**16 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245739 (MGA94 Zone 56) surface elevation: 28.74 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed					SP	**SAND**: fine to medium grained, orange-brown/grey, with some medium plasticity clay. *(continued)*	M	D		**MARINE DEPOSITS**
			SPT 6, 7, 10 N*=17	-4	33.0		SC	**Clayey SAND**: fine to medium grained, red-brown.		MD		
				-5	34.0							
				-6	35.0							
			SPT 11, 14, 22 N*=36	-7	36.0					MD to D		
				-8	37.0							
				-9	38.0					MD		
			SPT 6, 6, 8 N*=14	-10	39.0							
				-11								

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method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

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Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	6 of 6
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**13 Jul 2015**
principal:	
date completed:	**16 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245739 (MGA94 Zone 56) surface elevation: 28.74 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description **SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed	SPT 22, 35/120mm N*=R	-12	41.0		SC	**Clayey SAND**: fine to medium grained, red-brown. *(continued)*	M	MD		**MARINE DEPOSITS**
				-13	42.0					VD		
				-14	43.0							
				-15	44.0							
				-16	45.0			Borehole BH03 terminated at 45.0 m Target depth				
				-17	46.0							
				-18	47.0							
				-19								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description
based on Unified Classification System

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

consistency / relative density

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

coffey

Borehole No. **BH03**

Engineering Log - Monitoring Well

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***21.7.2015***

Principal:

Date completed: ***21.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***AC***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model & mounting: TRACK MOUNTED | Easting: 336185 | slope: -90° | R.L. Surface:

hole diameter: | Northing: 6245739 | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
							1			.			
							2						
							3						
							4						
							5						
							6						
							7						
							8						
							9			Borehole terminated at 9m			
							10						

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

support

C casing N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

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

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

PIEZOMETER GEOTLCOV24080AS.GPJ COFFEY.GDT 18.8.15

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Engineering Log - Borehole

Borehole ID.	**BH04**
sheet:	1 of 4
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**17 Jul 2015**
principal:	
date completed:	**20 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336149; N: 6245742 (MGA94 Zone 56) surface elevation: 27.95 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
AD/T		Not Observed	E					**ROAD SURFACE: CONCRETE**: 0.15 m.				**ROAD SURFACE**
								FILL: Gravelly SAND: fine to coarse grained, orange-brown/grey, fine to coarse grained, sub-angular to angular gravel.	M			**FILL** PID=0.2ppm
			E	27	1.0			**FILL: SAND**: fine to coarse grained, orange-brown/grey, trace of fine grained, sub-rounded gravel.				PID=0.1ppm
			SPT 3, 2, 3 N*=5				SP	**SAND**: fine to medium grained, orange-brown.		MD		**MARINE DEPOSITS**
			E	26	2.0							PID=0.3ppm
W			SPT 3, 4, 4 N*=8	25	3.0							
				24	4.0					VD		
			SPT 10, 19, 32 N*=51	23	5.0							
			SPT 20, 30/110mm N*=R	22	6.0							
			SPT 29, 30/90mm N*=R	21	7.0							
				20								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
- e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

coffey

Engineering Log - Borehole

Borehole ID.	**BH04**
sheet:	2 of 4
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**17 Jul 2015**
principal:	
date completed:	**20 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336149; N: 6245742 (MGA94 Zone 56) surface elevation: 27.95 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed	SPT 24, 30/100mm N*=R	19	9.0		SP	**SAND**: fine to medium grained, orange-brown. *(continued)*	M	VD		**MARINE DEPOSITS**
				18	10.0							
				17	11.0							
			SPT 16, 30, 30/80mm N*=R	16	12.0							
				15	13.0							
				14	14.0							
			SPT 20, 30/120mm N*=R	13	15.0							
				12								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

coffey

Engineering Log - Borehole

Borehole ID.	**BH04**
sheet:	3 of 4
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**17 Jul 2015**
principal:	
date completed:	**20 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336149; N: 6245742 (MGA94 Zone 56) surface elevation: 27.95 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed	SPT 30, 30/90mm N*=R	11	17.0		SP	**SAND**: fine to medium grained, orange-brown. *(continued)*	M	VD		**MARINE DEPOSITS**
				10	18.0							
				9	19.0							
				8	20.0							
			SPT 15, 30/50mm N*=R	7	21.0							
				6	22.0							
				5	23.0							
			SPT 30, 30/70mm N*=R	4								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description
based on Unified Classification System

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

consistency / relative density

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

Engineering Log - Borehole

Borehole ID.	**BH04**
sheet:	4 of 4
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**17 Jul 2015**
principal:	
date completed:	**20 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336149; N: 6245742 (MGA94 Zone 56) surface elevation: 27.95 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description **SOIL TYPE**: plasticity or particle characteristic, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
W		Not Observed	SPT 50/130mm N*=R	3	25.0		SP	**SAND**: fine to medium grained, orange-brown. *(continued)*	M	VD		**MARINE DEPOSITS**
				2	26.0							
				1	27.0							
				0	28.0							
				-1	29.0		SP	**SAND**: fine to medium grained, orange-brown, with some medium plasticity clay.				
			SPT 10, 26, 30/80mm N*=R	-2	30.0			Borehole BH04 terminated at 30.0 m Target depth				
				-3	31.0							
				-4								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description
based on Unified Classification System

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

consistency / relative density

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

coffey

Engineering Log - Borehole

Borehole ID.	**BH05**
sheet:	1 of 1
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
principal:	
project:	**UNSW Material Science Building**
location:	**Kensington, NSW**
date started:	**22 Jul 2015**
date completed:	**22 Jul 2015**
logged by:	**BF**
checked by:	**AC**

position: E: 336182; N: 6245694 (MGA94 Zone 56) surface elevation: 28.51 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
		Not Observed	E E B E	28 27	1.0 2.0 3.0 4.0 5.0 6.0 7.0		SP	**ROAD SURFACE: ASPHALT**: 0.03 m. **FILL: Gravelly SAND**: fine to medium grained, brown/grey, fine to coarse grained, sub-angular gravel. **SAND**: fine to medium grained, dark brown. Borehole BH05 terminated at 1.5 m Target depth	M	L		**ROAD SURFACE** **FILL** PID=0.5ppm PID=0.6ppm **MARINE DEPOSITS** PID=0.8ppm

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:42

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remoulded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

coffey

Engineering Log - Borehole

Borehole ID.	**BH06**
sheet:	1 of 1
project no.	**GEOTLCOV24080AS**
client:	**Brookfield Multiplex**
date started:	**21 Jul 2015**
principal:	
date completed:	**21 Jul 2015**
project:	**UNSW Material Science Building**
logged by:	**BF**
location:	**Kensington, NSW**
checked by:	**AC**

position: E: 336185; N: 6245704 (MGA94 Zone 56) surface elevation: 28.76 m (AHD) angle from horizontal: 90°

drill model: Drillcat, Track mounted hole diameter : 100 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	classification symbol	material description (SOIL TYPE: plasticity or particle characteristic, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	structure and additional observations
		Not Observed	B E					**ROAD SURFACE: ASPHALT**: 0.03 m.	M			**ROAD SURFACE**
			E					**FILL: Gravelly SAND**: fine to coarse grained, dark grey, fine to coarse grained, sub-angular gravel.				**FILL** PID=0.3ppm
			B	28				**FILL: SAND**: fine to medium grained, yellow-brown, with some fine to coarse grained, sub-angular to angular gravel.				PID=0.3ppm
			E		1.0		SP	**SAND**: fine to medium grained, pale grey.		L		**MARINE DEPOSITS** PID=0.4ppm
				27	2.0			Borehole BH06 terminated at 1.5 m Target depth				
				26	3.0							
				25	4.0							
				24	5.0							
				23	6.0							
				22	7.0							
				21								

CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ <<DrawingFile>> 06/08/2015 15:43

method
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration 1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

classification symbol & soil description based on Unified Classification System

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

consistency / relative density

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

Engineering Log - Borehole

Borehole No.	**BH10**
Sheet	1 of 1
Office Job No.:	**GEOTLCOV24080AS**
Client:	**Brookfield Mulitplex**
Date started:	**28.7.2015**
Principal:	
Date completed:	**28.7.2015**
Project:	**UNSW Material Science Building**
Logged by:	**PD**
Borehole Location:	**UNSW Kensington Campus**
Checked by:	**ML**

drill model and mounting: GEOPROBE 7822DT/TRACK | Easting: | slope: -90° | R.L. Surface:

hole diameter: 75 mm | Northing | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
HADT				E+ 2.2ppm		0.5			**CONCRETE:**				
				E+3.0ppm					**FILL** Gravelly SAND, fine grained, yellow brown, gravel, fine-medium, dark brown, subrounded.	D	L		No odour or staining.
				E+3.2ppm		1.0		SC	**SAND:** fine grained, pale yellow brown.	D	L		No odour or staining.
PT				E+4.2ppm (Dup2)		1.5 2.0 2.5 3.0							
				E+4.3ppm		3.5							
				E+4.2ppm		4.0			Borehole BH10 terminated at 3.9m				
						4.5 5.0							

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

penetration

1 2 3 4 — no resistance ranging to refusal

water

- 10/1/98 water level on date shown
- water inflow
- water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
V	vane shear (kPa)
P	pressuremeter
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

coffey

Engineering Log - Borehole

Borehole No. **BH11**

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***28.7.2015***

Principal:

Date completed: ***28.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***PD***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model and mounting: GEOPROBE 7822DT/TRACK Easting: slope: -90° R.L. Surface:

hole diameter: 75 mm Northing bearing: datum:

drilling information | **material substance**

method	penetration 1 2 3	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
HS									**ASPHALT:**				
									ROADBASE:				
				E+0.2ppm (Dup4)					**CONCRETE:**	D	L		No odour or staining.
						0.5			**FILL:** Gravelly SAND, fine grained, brown, gravel fine-medium, brown, subrounded.	D	MD		No odour or staining.
				E+1.2ppm					dark brown, gravel more coarse and slightly subangular.				
						1.0							
				E+2.2ppm					grey.	D	L		No odour or staining.
PT						1.5							
						2.0							
				E+3.1ppm				SC	**SAND:** fine grained, pale grey to white.	D	L		No odour or staining.
						2.5							
								SC	yellow brown.	D	MD		No odour or staining.
						3.0							
				E+3.0ppm				SC	1cm band of ironstone gravel.	D	MD		No odour or staining.
						3.5							
				E+3.5ppm				SC	sand is paler in colour.	D	MD		No odour or staining.
						4.0			Borehole BH11 terminated at 3.9m				
						4.5							
						5.0							

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

penetration

1 2 3 4 — no resistance ranging to refusal

water

- 10/1/98 water level on date shown
- water inflow
- water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
V	vane shear (kPa)
P	pressuremeter
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

coffey

Engineering Log - Borehole

Borehole No.	**BH12**
Sheet	1 of 1
Office Job No.:	**GEOTLCOV24080AS**
Client:	**Brookfield Mulitplex**
Date started:	**28.7.2015**
Principal:	
Date completed:	**28.7.2015**
Project:	**UNSW Material Science Building**
Logged by:	**PD**
Borehole Location:	**UNSW Kensington Campus**
Checked by:	**ML**

drill model and mounting: GEOPROBE 7822DT/TRACK | Easting: | slope: -90° | R.L. Surface:

hole diameter: 75 mm | Northing | bearing: | datum:

drilling information | **material substance**

method	penetration 1 2 3	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
HA/T				E+0.3ppm		0.0			**ASPHALT:**				
									ROADBASE:	D	L		No odour or staining.
									FILL: Gravelly SAND, fine grained, grey, gravel medium grained, grey, subrounded.				
								SC	**SAND:** fine grained, pale grey.	D	L		No odour or staining.
				E+1.2ppm		0.5							
						1.0							
				E+2.0ppm				SC	dark brown,	D	D		No odour or staining.
PT						1.5							
						2.0							
				E+3.0ppm				SC	pale yellow brown.	D	MD		No odour or staining.
						2.5							
						3.0							
				E+3.0ppm									
						3.5							
				E+3.1ppm									
						4.0			Borehole BH12 terminated at 3.9m				
						4.5							
						5.0							

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

penetration

1 2 3 4 — no resistance ranging to refusal

water

- 10/1/98 water level on date shown
- water inflow
- water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
V	vane shear (kPa)
P	pressuremeter
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

coffey

Engineering Log - Borehole

Borehole No. **BH13**

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***28.7.2015***

Principal:

Date completed: ***28.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***PD***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model and mounting: GEOPROBE 7822DT/TRACK Easting: slope: -90° R.L. Surface:

hole diameter: 75 mm Northing bearing: datum:

drilling information | **material substance**

method	penetration 1 2 3	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
HS						0.0			**ASPHALT:**				
									ROADBASE:				
				E+2.8ppm		0.5			**FILL:** Sand, fine grained, grey.	D	L		No odour or staining.
				E+3.0ppm		1.0							
PT						1.5							
				E+3.4ppm		2.0		SC	**SAND:** fine grained, pale grey to white.	D	L		No odour or staining.
						2.5		SC	dark yellow brown.	D	L		No odour or staining.
								SC	pale yellow brown.	D	L		No odour or staining.
				E+3.2ppm		3.0							
						3.5		SC	paler in colour.	D	L		No odour or staining.
				E+2.9ppm									
						4.0			Borehole BH13 terminated at 3.9m				
						4.5							
						5.0							

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

penetration

1 2 3 4 — no resistance ranging to refusal

water

- 10/1/98 water level on date shown
- water inflow
- water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
V	vane shear (kPa)
P	pressuremeter
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

BOREHOLE + PID GEOTLCOV24080AS.GPJ COFFEY.GDT 14.8.15

Form GEO 5.3 Issue 3 Rev.2

Engineering Log - Borehole

Borehole No.	***BH7***		
Sheet	1 of 1		
Office Job No.:	***GEOTLCOV24080AS***		
Client:	***Brookfield Mulitplex***	Date started:	***28.7.2015***
Principal:		Date completed:	***28.7.2015***
Project:	***UNSW Material Science Building***	Logged by:	***PD***
Borehole Location:	***UNSW Kensington Campus***	Checked by:	***ML***

drill model and mounting:	GEOPROBE 7822DT/TRACK	Easting:	slope:	-90°	R.L. Surface:
hole diameter:	200 mm	Northing	bearing:		datum:

drilling information | **material substance**

method	penetration 1 2 3	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
DT									**CONCRETE:**				
HA				E+2.4ppm		0.5			**FILL:** Sand, fine grained, dark brown.	D	L		No odour or staining.
				E+3.0ppm		1.0			**FILL:** Gravelly SAND, fine grained, dark brown, grvel medium-coarse concrete, grey, subangular.	D	L		No odour or staining.
									Borehole BH7 terminated at 0.55m				Terminated at 0.55m due to encountering concrete slab.

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

penetration

1 2 3 4 — no resistance ranging to refusal

water

- 10/1/98 water level on date shown
- water inflow
- water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
V	vane shear (kPa)
P	pressuremeter
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

coffey

Engineering Log - Borehole

Borehole No. **BH9**

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***28.7.2015***

Principal:

Date completed: ***28.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***PD***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model and mounting: GEOPROBE 7822DT/TRACK Easting: slope: -90° R.L. Surface:

hole diameter: 75 mm Northing bearing: datum:

drilling information | **material substance**

method	penetration 1 2 3	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro-meter kPa 100 200 300 400	structure and additional observations
HA DT				E+3.0ppm		0.5			**ASHPHALT/BITUMEN:** **ROADBASE:** **FILL:** Sand, fine grained, dark grey.	D	L		No odour or staining.
				E+1.6ppm		1.0		SC	**SAND:** fine grained, pale grey.	D	L		No odour or staining.
				E+2.9ppm		1.5		SP	some coarse gravel within sand.	D	L		No odour or staining.
PT						2.0		SC	fine grained, pale grey.	D	L		No odour or staining.
				E+2.8ppm E+3.1ppm		2.5		SC	dark brown.	D	D		No odour or staining.
						3.0		SC	pale yellow brown.	D	MD		No odour or staining.
				E+3.0ppm		3.5							
				E+3.2ppm		4.0			Borehole BH9 terminated at 3.9m				
						4.5							
						5.0							

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

penetration

1 2 3 4 — no resistance ranging to refusal

water

- 10/1/98 water level on date shown
- water inflow
- water outflow

notes, samples, tests

U_{50}	undisturbed sample 50mm diameter
U_{63}	undisturbed sample 63mm diameter
D	disturbed sample
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
V	vane shear (kPa)
P	pressuremeter
Bs	bulk sample
E	environmental sample
R	refusal

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

coffey

Borehole No. **BH7A**

Sheet 1 of 1

Engineering Log - Monitoring Well

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***28.7.2015***

Principal:

Date completed: ***28.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***PD***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model & mounting: GEOPROBE 7822DT/TRACK | Easting: | slope: -90° | R.L. Surface:

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

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
DT										**CONCRETE:**			
HA				E+0.2ppm (Dup 3,Dup3A						**FILL:** Gravelly SAND, fine grained, dark grey, minor gravel fine, dark grey, subrounded.	D	L	No odour or staining.
PT				E+0.2ppm			1		SC	**SAND:** fine grained, pale grey.	D	L	No odour or staining.
				E+0.6ppm									
							2		SP	1cm band of very dark brown gravel sand, ironstone?			
				E+0.7ppm					SC	Yellow brown, bands of dark brown sand within yellow brown sand.	D	MD	No odour or staining.
							3						
				E+0.8ppm					SC	becomes pale yellow grey brown.	D	MD	No odour or staining.
							4						
				E+1.2ppm									
							5						
				E+2.1ppm									
							6		SC	band of dark brown sand.	D	MD	No odour or staining.
HS			▶	E+1.3ppm					SC				
							7				W	MD	No odour or staining.
				E+1.3ppm									
				E+0.5ppm (Dup5,Dup5A)			8			Borehole terminated at 8m			
							9						
							10						

PIEZOMETER GEOTLCOV24080AS.GPJ COFFEY.GDT 14.8.15

Form GEO 5.10 Issue 3 Rev.0

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

support

C casing N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

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

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

coffey

Engineering Log - Monitoring Well

Borehole No. **BH8**

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

Client: ***Brookfield Mulitplex***

Date started: ***28.7.2015***

Principal:

Date completed: ***28.7.2015***

Project: ***UNSW Material Science Building***

Logged by: ***PD***

Borehole Location: ***UNSW Kensington Campus***

Checked by: ***ML***

drill model & mounting: GEOPROBE 7822DT/TRACK | Easting: | slope: -90° | R.L. Surface:

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

drilling information | **material substance**

method	penetration 1 2 3	support	water	notes samples, tests, etc	well details	RL	depth metres	graphic log	classification symbol	material: soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	structure and additional observations
HA										**CONCRETE:**			
										ROADBASE:			
				E+2.0ppm			1		SC	**SAND:** fine grained, pale grey.	D	L	No odour or staining.
PT				E+1.5ppm (Dup1,Dup1A)									
				E+3.0ppm			2		SC	fine grained, dark brown.	D	L	No odour or staining.
									SC	pale yellow brown.	D	L	No odour or staining.
				E+3.0ppm			3						
				E+3.5ppm			4						
			▶						SC	pale grey.	D	L	No odour or staining.
				E+3.2ppm			5				M	L	Strong organic matter odour, no staining.
TC	SS						6						
				E+4.0ppm							W	L	No odour or staining.
				E+3.3ppm			7			Borehole terminated at 7m			
							8						
							9						
							10						

PIEZOMETER GEOTLCOV24080AS.GPJ COFFEY.GDT 14.8.15

Form GEO 5.10 Issue 3 Rev.0

method

DT	diatube
PT	push tube
SS	soild stem flight auger
HS	hollow stem flight auger
VT	V Bit, T Bit
AH	air hammer
CP	cable percussive
HA	hand auger
NDD	non-destructive digging
RC	rock corer

support

C casing N nil

penetration

1 2 3 4 no resistance ranging to refusal

water

10/1/98 water level on date shown

water inflow

water outflow

notes, samples, tests

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

classification symbols and soil description

based on unified classification system

moisture

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

consistency/density index

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

Appendix I – Equipment Calibration Records

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RENTALS

Equipment Report - MINIRAE 2000 PID

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?
10.6 eV	Isobutylene	100 ppm	0.0 ppm	101 ppm	Lot:1805792 Cyl:9	☑

Alarm Limits

High	100 ppm
Low	50 ppm

Bump Test

Date	Target Gas	Reading	Pass?
24/07/2015	100 ppm	101 ppm	☑

☑ Battery Status 5.5V
☐ 10 minutes test complete
☑ Spare battery status (Min 5.5 volts)
☑ Electrical Safety Tag attached (AS/NZS 3760)

Tag No: 000177

Valid to: 13/10/2015

☑ Performance check (pump, lamp, sensor)
☑ Data cleared
☑ Filters checked

Date: 24/07/2015

Signed: Mitek

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
☑	☐	MiniRAE 2000 PID / Operational Check / Battery Status 5.5 V
☑	☐	Lamp 10.6 eV, Compound Set to: Isobutylene C/factor: 1
☑	☐	Protective yellow rubber boot
☑	☐	Inlet probe (attached to PID)
☑	☐	Spare water trap filter(s) Qty 1
☑	☐	Charger 240V to 12V 500mA
☑	☐	Instruction Manual behind foam on the lid of case "
☑	☐	Quick Guide Sheet behind foam on the lid of case "
☑	☐	Spare Alkaline Battery Compartment with batteries
☑	☐	Inline Moisture trap Filter Guide Laminated
☐	☐	Calibration regulator & tubing (optional) AL7155D
☒	☐	Data cable and Software CD (optional)
☑	☐	Carry Case
☑	☐	Check to confirm electrical safety (tag must be valid)

Date: 24/07/2015

Signed: Mitek

TFS Reference	CS003023	Return Date:	/ /
Customer Reference		Return Time:	
Equipment ID	PIDMINNZ4	Condition on return:	
Equipment Serial No.	110900436		

coffey

FIELD EQUIPMENT CALIBRATION DETAILS

Job/Site Details:	
Project Name: MSB, UNSW	Project Number: GEOTLCOV24080AS
Fieldwork Date(s): 27/7-28/7/15	Work Completed By: 28/7/15
Type of Work (eg. ESA, GME, etc): ESA	

NB When completing service calibration details, refer to the calibration certificate which accompanies the equipment.

Photoionisation Detector (PID):			
Equipment Description:		Equipment ID:	
Calibration Frequency Required by Manufacturer:		Last Service Date:	Calibrated by :
Challenge Gas Standard: 0.0ppm fresh air 100% isobutylene gas		Gas Batch #:	Gas Expiry date:
Field Challenge Details:			
1) Date/Time: 28/7/15 @ 7:30PM 0.0ppm fresh air, 99.9% isobutylene.	4) Date/Time:	7) Date/Time:	10) Date/Time:
2) Date/Time:	5) Date/Time:	8) Date/Time:	11) Date/Time:
3) Date/Time:	6) Date/Time:	9) Date/Time:	12) Date/Time:

Lower Explosive Level Meter (LEL):			
Equipment Description:		Equipment ID:	
Calibration Frequency Required by Manufacturer:		Last Service Date:	Calibrated by :
Challenge Gas Standard:		Gas Batch #:	Gas Expiry date:
Field Challenge Details:		☐ Tick if recorded elsewhere on Hot Work Permit (No._____)	
1) Date/Time:	4) Date/Time:	7) Date/Time:	10) Date/Time:
2) Date/Time:	5) Date/Time:	8) Date/Time:	11) Date/Time:
3) Date/Time:	6) Date/Time:	9) Date/Time:	12) Date/Time:

Water Quality Meter:					
Equipment Description:			Equipment ID:		
Calibration Frequency Required by Manufacturer:			Last Service Date:		Calibrated by :
Calibration Standards:					
Field Calibration Record					
Date Calibrated	DO Probe	Conductivity	pH 4.0	pH 6.88	Temperature

Interface Probe (IP) :			
Equipment Description:		Equipment ID:	
Calibration Frequency Required by Manufacturer:		Last Service Date:	Calibrated by :
Field Challenge Details:			
1) Date/Time:	4) Date/Time:	7) Date/Time:	10) Date/Time:
2) Date/Time:	5) Date/Time:	8) Date/Time:	11) Date/Time:
3) Date/Time:	6) Date/Time:	9) Date/Time:	12) Date/Time:

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RENTALS

Equipment Certification Report – TPS 90FLMV Water Quality Meter

This Water Quality Meter has been performance checked and calibrated as follows:

Sensor	Concentration	Span 1	Span 2	Traceability Lot #	Pass?
pH	7.00H / pH 4.00	7.00 pH	4.00 pH	/	☑
Conductivity	12.88 mS/cm	0.00 mS/cm	12.88 mS/cm		☑
TDS	36 ppk	0 ppk	36.0 ppk		☑
Dissolved Oxygen	Sodium Sulphite / Air	0.00 ppm in Sodium Sulphite	8.92 ppm Saturation in Air		☑

Check only

Redox (ORP) *	Electrode operability test	240mV +/- 10%	227 mV		☑

* This meter uses an Ag/AgCl ORP electrode. To convert readings to SHE (Standard Hydrogen Electrode), add 199mV to the mV reading.

☑ Battery Status 7.4 (min 7.2V)
☑ Electrical Safety Tag attached (AS/NZS 3760)

☑ Temperature 20.9 °C
☑ Electrodes Cleaned and checked

Tag No: 000125

Valid to: 19/09/2015

Date: 03/08/2015

Signed: [signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
☑	☐	90FLMV Unit. Ops check/Battery status: 7.8
☑	☐	pH sensor with wetting cap, 5m
☑	☐	Conductivity/TDS/Temperature K=10 sensor, 5m
☑	☐	Dissolved oxygen YSI5739 sensor with wetting cap, 5m
☑	☐	Redox (ORP) sensor with wetting cap, 5m
☑	☐	Power supply 240V to 12V DC 200mA
☑	☐	Instruction Manual
☑	☐	Quick Guide
☑	☐	Plastic container with storage solution for pH and ORP sensors
☑	☐	Carry Case
☑	☐	Check to confirm electrical safety (tag must be valid)

Date: 04/08/2015

Signed: _____

TFS Reference	CSC003075	Return Date:	/ /
Customer Reference		Return Time:	
Equipment ID	90FLMVSW	Condition on return:	
Equipment Serial No.	T3231		

"We do more than give you great equipment… We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@Thermofisher.com
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RENTALS

Equipment Report – Solinst Model 122 Interface Meter

This Meter has been performance checked / calibrated* as follows:

Cleaned/Tested **Pass?** ☑ **Yes** ☐ **No**

☑ Probe

☑ Tape/Reel

☑ Performance Test & Battery Voltage Check (8.7 v) 8.0v minimum

Date: 04/08/2015 Checked by: 8.7 Dave O'Neill

Signed: Dave

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
☑	☐	☐	Operations check OK
☑	☐	☐	Plastic Box / Bag
☑	☐	☐	Spare 9V Battery Qty 2
☑	☐	☐	Probe Cleaning Brush
☒	☐	☐	Decon
☑	☐	☐	Instruction leaflet
☑	☐	☐	Tape Guide
☐	☐	☐	

Processors Signature/ Initials Dave

Quote Reference	CS003075	Condition on return
Customer Ref		
Equipment ID	S122 60SE	
Equipment serial no.	21632	
Return Date	/ /	
Return Time		

Appendix J – Groundwater Field Data Sheets

coffey

Well Gauging Form

PROJECT NAME: MSB, UNSW

PROJECT NUMBER: GEOTLCOV24080AS

FIELD PERSONNEL: PD

DATE: 5/8/15

PROJECT MANAGER: PD

FIELD EQUIPMENT:

Equipment Used: IP Meter IP Serial Number:

REFER TO SOPs WHEN GAUGING WELLS:

SOP - Monitoring Well Gauging and SOP – Decontamination of Sampling Equipment

Time of Day	Well ID	Well Diameter	Total Well Depth note 1	Depth to PSH (NAPL) [A]	Depth to Groundwater [B]	PSH Thickness [B-A]	Height of Well Stick-Up	COMMENTS (notes 2 & 3) ODOUR, COLOUR, SHEEN, NAPL (and its colour), REMEDIATION SYSTEM, etc
		mm	m	mBTOC	mBTOC	mm	m	
	BH8	50	6.980	–	4.930	–	flush	No odour. Well in good condition.
	BH3	〃	9.050	–	5.550	–	〃	〃 · Gattic coming off ground. Conc not set properly.
	BH2	〃	9.110	–	5.600	–	〃	〃 · Well in good condition. Well cap could not be closed fully as gattic won't close then.
	BH7A	〃	7.835	–	5.470	–	〃	〃 〃

coffey

Groundwater Sampling Form (A) - General

PROJECT NAME: MSB, UNSW **PROJECT NUMBER:** GEOTLCOV24080AS

FIELD PERSONNEL: PD **DATE:** 5/8/15

PROJECT MANAGER: PD

WELL ID: BH2 **METER ID& TYPE :** _____ **TOTAL WELL DEPTH:** 9.110m **SCREEN INTERVAL:** _____

EQUIPMENT USED: **BAILER** ☑ **WATERRA** ☐ **OTHER** _____ **WELL DIAMETER:** 50MM **WELL STICK-UP:** flush

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

9.110 m - 5.600 = 3.510 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME

~14 L
x3 = 42L.

WELL HEADSPACE PID READING

PID READING

PPM: _____

ORP REFERENCE ELECTRODE: (circle) SHE / Calomel Saturated KCl / Ag/AgCl 1M KCl / Ag/AgCl 4M KCl / Ag/AgCl Saturated KCl

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
		1	~~7.29~~	87.29	ppm	487	us/cm	6.27		90	mV	17.1	°C	✓					No odour. Colourless.
		10		4.75		532		6.26		84		18.5		✓					〃 〃
		20		3.87		702		6.48		83		18.3		✓					〃 〃
		30		5.37		563		6.46		81		18.3		✓					〃 〃
		40		4.87		570		6.45		82		18.1		✓					〃 〃
		42		4.22		573		6.48		80		18.2		✓					〃 〃
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ☐ N ☑ DUPLICATE ID: _____ **TRIPLICATE COLLECTED:** Y ☐ N ☑ TRIPLICATE ID: _____

WERE METALS FIELD FILTERED? Y ☑ N ☐ Unfiltered samples must not be put into a preserved container (i.e. 'metals' bottle) **HAS THIS FORM BEEN COMPLETED IN FULL?** Y ☑ N ☐

coffey

Groundwater Sampling Form (A) - General

PAGE 1 OF 1

PROJECT NAME: MSB, UNSW **PROJECT NUMBER:** GEOTLCOV24080AS

FIELD PERSONNEL: PD **DATE:** 5/8/15

PROJECT MANAGER: PD

WELL ID: BH3 **METER ID& TYPE :** _____ **TOTAL WELL DEPTH:** 9.050 **SCREEN INTERVAL:** _____

EQUIPMENT USED: BAILER ☑ **WATERRA** ☐ **OTHER** _____ **WELL DIAMETER:** 50MM **WELL STICK-UP:** flush

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

9.050 m - 5.551 = ~3.500 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME

~~3.5~~ ~14.0 L

x 3 = 42L.

WELL HEADSPACE PID READING

PID READING

PPM: _____

ORP REFERENCE ELECTRODE: (circle) SHE / Calomel Saturated KCl / Ag/AgCl 1M KCl / Ag/AgCl 4M KCl / Ag/AgCl Saturated KCl

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
		1		5.61	ppm	424	uS/cm	6.11		78	mV	16.1	°C		✓				No odour. Pink grey
		10		3.85		405		6.22		72		17.2			✓				〃 〃
		20		3.61		398		6.19		75		17.6			✓				〃 〃
		30		3.90		396		6.21		75		17.2		✓					〃 ~~colour less~~
		40		3.93		384		6.19		74		17.4		✓					〃 〃
		42		3.34		358		6.20		73		17.6		✓					〃 〃
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ☐ N ☑ DUPLICATE ID: _____ **TRIPLICATE COLLECTED:** Y ☐ N ☑ TRIPLICATE ID: _____

WERE METALS FIELD FILTERED? Y ☑ N ☐ Unfiltered samples must not be put into a preserved container (i.e. 'metals' bottle) **HAS THIS FORM BEEN COMPLETED IN FULL?** Y ☑ N ☐

coffey

Groundwater Sampling Form (A) - General

PROJECT NAME: MSB, UNSW **PROJECT NUMBER:** GEOTLCOV24080AS

FIELD PERSONNEL: PD **DATE:** 5/8/15

PROJECT MANAGER: PD

WELL ID: BH7A **METER ID& TYPE :** _____ **TOTAL WELL DEPTH:** 7.835 **SCREEN INTERVAL:** _____

EQUIPMENT USED: **BAILER** ☑ **WATERRA** ☐ **OTHER** _____ **WELL DIAMETER:** 50MM **WELL STICK-UP:** flush.

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

7.835 m - 5.470 = 2.365 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME

~ 8 L
× 3 = 24l.

WELL HEADSPACE PID READING

PID READING

PPM: _____

ORP REFERENCE ELECTRODE: (circle) SHE / Calomel Saturated KCl / Ag/AgCl 1M KCl / Ag/AgCl 4M KCl / Ag/AgCl Saturated KCl

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
		1		5.22	ppm	271	us/cm	6.45		61	mV	17.6	°C		✓				No odour. Pale grey.
		8		4.59		292		6.28		59		18.5				✓			" Pale Brown
		16		4.71		287		6.34		61		18.7				✓			" "
		24		4.69		288		6.32		64		18.9				✓			" "
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ☐ N ☑ DUPLICATE ID: _____ **TRIPLICATE COLLECTED:** Y ☐ N ☑ TRIPLICATE ID: _____

WERE METALS FIELD FILTERED? Y ☑ N ☐ Unfiltered samples must not be put into a preserved container (i.e. 'metals' bottle) **HAS THIS FORM BEEN COMPLETED IN FULL?** Y ☑ N ☐

coffey

Groundwater Sampling Form (A) - General

PROJECT NAME: MSB, UNSW **PROJECT NUMBER:** GEOTLCOV24080AS

FIELD PERSONNEL: PD **DATE:** 5/8/15

PROJECT MANAGER: PD

WELL ID: BH8 **METER ID& TYPE :** _____ **TOTAL WELL DEPTH:** 6.980 **SCREEN INTERVAL:** _____

EQUIPMENT USED: **BAILER** ☑ **WATERRA** ☐ **OTHER** _____ **WELL DIAMETER:** 50mm **WELL STICK-UP:** flush.

WELL GAUGING AND PURGE VOLUME CALCULATIONS

(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN)

6.980 m - 4.930 = ~2.000 m

Use water column calculation together with the procedures in 'SOP- Groundwater Sampling - Bailers' to determine the correct volume to be purged from the well (enter this value in the field to the right)

LITRES PER 1 WELL VOLUME

~8 L
x3 = 24L.

WELL HEADSPACE PID READING

PID READING

PPM: _____

ORP REFERENCE ELECTRODE: (circle) SHE / Calomel Saturated KCl / Ag/AgCl 1M KCl / Ag/AgCl 4M KCl / Ag/AgCl Saturated KCl

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
		1		4.31	ppm	355	uS/cm	5.52		137	mV	15.7	°C		✓				No odour. Pale grey brown
		~~8~~		2.37	"	253		6.24		77		17.7				✓			Slight chem type odour. Pale grey brown
		~~16~~ 16		2.49		203		6.24		68		17.9				✓			" "
		24		2.32		234		6.31		62		17.9				✓			Very slight chem type odour Pale grey brown.
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C							

DUPLICATE COLLECTED: Y ☑ N ☑ DUPLICATE ID: ~~DUP1~~ QC1

TRIPLICATE COLLECTED: Y ☑ N ☑ TRIPLICATE ID: ~~DUP1A~~ QC1A

WERE METALS FIELD FILTERED? Y ☑ N ☐ Unfiltered samples must not be put into a preserved container (i.e. 'metals' bottle)

HAS THIS FORM BEEN COMPLETED IN FULL? Y ☑ N ☐

Appendix K – Quality Control/Quality Assurance Data Assessment

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

I. SAMPLE HANDLING

	Yes	**No** (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:

Coffey note that all samples were received by the laboratory to enable analysis to be undertaken within appropriate holding times.

Sample Handling was:

☒ Satisfactory ☐ Unsatisfactory

☐ Partially Satisfactory

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

III. FIELD QA/QC

1.	Number of Samples Analysed	Soil	30
		Groundwater	4
2.	Number of Days of Sampling:	3	

3. Number and Type of QA/QC Samples Collected:

Quality Control Sample Type	No.	% Total No. Samples
Intra-lab Duplicates (Soil)	2	7%
Inter-lab Duplicates (Soil)	1	3%
Intra-lab Duplicates (Groundwater)	1	25%
Inter-lab Duplicates (Groundwater)	1	25%
Trip Blanks	2	-
Trip Spike	2	-
Equipment Rinsate	2	-

4. FIELD DUPLICATES

	Yes	**No** (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical?	☐	☒
B. Were RPDs within Control Limits?		
a. Organics (No limit (<10 x LOR); 50% (10-20 x LOR); 30% (>20 x LOR))	☒	☐
b. Metals/Inorganics (No limit (<10 x LOR); 50% (10-20 x LOR); 30% (>20 x LOR))	☐	☒
c. Volatile & semi volatile organics (No limit (<10 x LOR); 50% (10-20 x LOR); 30% (>20 x LOR))	☒	☐

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

COMMENTS:

- The analysis of inter-lab duplicate samples were slightly lower than the 5% rate specified within AS4482.1 (2005) for soil samples. The number of intra-lab duplicates exceeded this target however.
- The RPDs for Metals/Inorganics were not reported within Control Limits for a number of samples likely due to variability in soil material and the heterogeneous distribution of these chemicals within soils on site.

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

IV. TRIP BLANKS (TB) AND TRIP SPIKES (TS)

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks and spikes analysed?	☒	☐
B. Were the trip blanks free of contaminants?	☒	☐
C. Were the trip spikes reported within acceptable recoveries?	☒	☐

COMMENTS:

6. EQUIPMENT RINSATE SAMPLES

	Yes	No (Comment below)
A. Were an adequate number of Equipment Rinsate Samples collected?	☒	☐
B. Were the Equipment Rinsate Samples free of contaminants?	☐	☒

The equipment rinsate sample collected during the groundwater sampling on 5 August 2015 reported concentrations of zinc and dichloromethane (DCM) above the LOR. This indicates that traces of these chemicals may have remained on the sampling equipment following decontamination. However, given that the concentrations of zinc and DCM within the rinsate sample were equal to, or close to the LOR, and below the assessment criteria, the potential for cross contamination between sampling locations is not expected to alter the assessment conclusions.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory	
	☐ Partially Satisfactory		

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

V LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	Yes	No
Laboratory Blanks/Reagent Blanks	☒	☐
Laboratory Duplicates	☒	☐
Matrix Spikes/Matrix Spike Duplicates	☒	☐
Laboratory Control Spike	☒	☐
Surrogate (where appropriate)*	☒	☐

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (70% to 130%)	☒	☐
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☐	☒
5. Were the surrogate recoveries within control limits?	☒	☐

COMMENTS:

- The RPDs for barium and zinc were reported slightly above the initial acceptance limit in lab report 466918. However, on considering further, Eurofins MGT reported that this RPD was considered acceptable.

5. The laboratory internal QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

Coffey Environments Australia Pty Ltd

A.B.N. 65 140 765 902

DATA VALIDATION REPORT

Job No: GEOTLCOV24080AS

Soil Analysis - Lab Batch References: 465878, 466918, 466933, 468090 and 132002

Groundwater Analysis – Lab Batch Reference: 467629 and 132255

VI DATA USABILITY

1.	Data Directly Usable	☒
2.	Data Usable with the following considerations	☐
3.	Data Not Usable.	☐

COMMENTS:

Appendix L – Certified Laboratory Reports and Chain of Custody Documentation

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 0461

coffey

Consigning Office: Chatewood

Report Results to: Priya Dass / Matthew Locke Mobile: Email: @coffey.com

Invoices to: Priya Dass / Matthew Locke Phone: Email: @coffey.com

Project No: GEOTLCOV24080AS Task No:

Project Name: UNSW Laboratory: Eurofins MGT

Sampler's Name: Ben Fotahi Project Manager: Priya Dass / Matthew Locke

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH / BTEX (B8)	Metals (C8) CM33	OCP/OPP (B14)	Asbestos	Aggressivity (pH chloride sulphate)	Organic Matter	Cation Exchange Capacity	TCLP (Metals + PAHs)	NOTES
	BH3_0.1-0.2	13/7/15		Soil	1x250ml GJ +	Standard	✓	✓	✓	✓					
	BH3_0.5-0.6	↓		↓	ziplock bags		✓	✓	✓		✓	✓	✓		
	BH3_1.0				ice bricks										
	BH3_2.5				↓		✓	✓							
	BH3_(2.5)				1x250ml GJ										
	BH3_5.5-5.9	↓		↓	↓										

RELINQUISHED BY		RECEIVED BY		Sample Receipt Advice: (Lab Use Only)	
Name: Priya Dass	Date: 20/7/15 →	Name: PETER 182	Date: 20/7/15	All Samples Recieved in Good Condition	☑
Coffey Environments	Time: 3:20 p.m	Company: TOLL FAST	Time: 3.20 P.M	All Documentation is in Proper Order	☑
Name:	Date: →	Name: Jasmine	Date: 20/7/15	Samples Received Properly Chilled	☑
Company:	Time:	Company: Eurofins MGT	Time: 4.34 pm	Lab. Ref/Batch No.	465878

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name:	**Coffey Geotechnics Pty Ltd Chatswood**
Contact name:	Priya Dass
Project name:	UNSW
Project ID:	GEOTLCOV24080AS
COC number:	0461
Turn around time:	5 Day
Date/Time received:	Jul 20, 2015 4:34 PM
Eurofins | mgt reference:	**465878**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 5.6 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Suite 18 includes pH, Chloride & Sulphate

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Priya Dass - priya_dass@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
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NATA # 1261 Site # 20794

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 465878
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 20, 2015 4:34 PM
Due: Jul 27, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271							X					X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
BH3_0.1-0.2	Jul 13, 2015		Soil	S15-Jl18174	X			X		X	X		X
BH3_0.5-0.6	Jul 13, 2015		Soil	S15-Jl18175			X	X	X		X	X	X
BH3_1.0	Jul 13, 2015		Soil	S15-Jl18176		X							
BH3_2.5	Jul 13, 2015		Soil	S15-Jl18177				X			X		X
BH3_(2.5)	Jul 13, 2015		Soil	S15-Jl18178		X							
BH3_5.5-5.9	Jul 13, 2015		Soil	S15-Jl18179		X							

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Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Priya Dass**

Report **465878-S**
Project name UNSW
Project ID GEOTLCOV24080AS
Received Date Jul 20, 2015

Client Sample ID			**BH3_0.1-0.2**	**BH3_0.5-0.6**	**BH3_2.5**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl18174**	**S15-Jl18175**	**S15-Jl18177**
Date Sampled			**Jul 13, 2015**	**Jul 13, 2015**	**Jul 13, 2015**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	94	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	94	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	71	71	75
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			BH3_0.1-0.2	BH3_0.5-0.6	BH3_2.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl18174**	**S15-Jl18175**	**S15-Jl18177**
Date Sampled			**Jul 13, 2015**	**Jul 13, 2015**	**Jul 13, 2015**
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	106	110	115
p-Terphenyl-d14 (surr.)	1	%	109	102	110
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	-	-
Dibutylchlorendate (surr.)	1	%	74	-	-
Tetrachloro-m-xylene (surr.)	1	%	78	-	-
Organophosphorus Pesticides (OP)					
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-
Coumaphos	0.5	mg/kg	< 0.5	-	-
Demeton (total)	1	mg/kg	< 1	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-
Malathion	0.5	mg/kg	< 0.5	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-
Monocrotophos	10	mg/kg	< 10	-	-
Parathion	0.5	mg/kg	< 0.5	-	-
Phorate	0.5	mg/kg	< 0.5	-	-

Client Sample ID			BH3_0.1-0.2	BH3_0.5-0.6	BH3_2.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl18174**	**S15-Jl18175**	**S15-Jl18177**
Date Sampled			**Jul 13, 2015**	**Jul 13, 2015**	**Jul 13, 2015**
Test/Reference	LOR	Unit			
Organophosphorus Pesticides (OP)					
Profenofos	0.5	mg/kg	< 0.5	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	83	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
Chloride	10	mg/kg	-	< 10	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	30	-
Organic Matter %	0.01	% w/w	-	4.8	-
pH (1:5 Aqueous extract)	0.1	pH Units	-	8.1	-
Sulphate (as SO4)	10	mg/kg	-	37	-
% Moisture	0.1	%	4.8	6.9	6.0
Ion Exchange Properties					
Cation Exchange Capacity	0.05	meq/100g	-	5.1	-
Heavy Metals					
Arsenic	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	0.6	< 0.4
Chromium	5	mg/kg	8.8	< 5	< 5
Copper	5	mg/kg	43	12	< 5
Lead	5	mg/kg	< 5	19	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	47	8.9	< 5
Zinc	5	mg/kg	40	41	< 5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 27, 2015	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Jul 27, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 27, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 27, 2015	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 27, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Sydney	Jul 27, 2015	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jul 27, 2015	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Eurofins | mgt Suite B18			
Chloride	Sydney	Jul 27, 2015	28 Day
- Method: E033 /E045 /E047 Chloride			
pH (1:5 Aqueous extract)	Sydney	Jul 21, 2015	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Sulphate (as SO4)	Sydney	Jul 27, 2015	28 Day
- Method: E045 Sulphate			
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	Jul 22, 2015	7 Day
- Method: LM-LTM-INO-4030			
Ion Exchange Properties	Melbourne	Jul 22, 2015	
Organic Matter %	Melbourne	Jul 22, 2015	5 Day
- Method: APHA 2540E Fixed and Volatile Solids Ignited at 550C			
Metals M8	Sydney	Jul 27, 2015	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
% Moisture	Sydney	Jul 21, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

eurofins | mgt

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Company Name:	Coffey Geotechnics Pty Ltd Chatswood	**Order No.:**		**Received:**	Jul 20, 2015 4:34 PM
Address:	Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	465878	**Due:**	Jul 27, 2015
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1002	**Contact Name:**	Priya Dass
Project Name:	UNSW				
Project ID:	GEOTLCOV24080AS				

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271							X					X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
BH3_0.1-0.2	Jul 13, 2015		Soil	S15-Jl18174	X			X		X	X		X
BH3_0.5-0.6	Jul 13, 2015		Soil	S15-Jl18175			X	X	X		X	X	X
BH3_1.0	Jul 13, 2015		Soil	S15-Jl18176		X							
BH3_2.5	Jul 13, 2015		Soil	S15-Jl18177				X			X		X
BH3_(2.5)	Jul 13, 2015		Soil	S15-Jl18178		X							
BH3_5.5-5.9	Jul 13, 2015		Soil	S15-Jl18179		X							

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

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

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Chloride	mg/kg	< 10			10	Pass	
Conductivity (1:5 aqueous extract at 25°C)	uS/cm	< 10			10	Pass	
Sulphate (as SO4)	mg/kg	< 10			10	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	94			70-130	Pass	
TRH C10-C14	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	91			70-130	Pass	
Toluene	%	91			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	94			70-130	Pass	
o-Xylene	%	94			70-130	Pass	
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	108			70-130	Pass	
TRH C6-C10	%	87			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	96			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	87			70-130	Pass	
Benzo(k)fluoranthene	%	100			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a.h)anthracene	%	88			70-130	Pass	
Fluoranthene	%	96			70-130	Pass	
Fluorene	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	89			70-130	Pass	
Naphthalene	%	95			70-130	Pass	
Phenanthrene	%	91			70-130	Pass	
Pyrene	%	100			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	97			70-130	Pass	
4.4'-DDD	%	106			70-130	Pass	
4.4'-DDE	%	102			70-130	Pass	
4.4'-DDT	%	96			70-130	Pass	
a-BHC	%	101			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	103			70-130	Pass	
d-BHC	%	103			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	95			70-130	Pass	
Endosulfan sulphate	%	90			70-130	Pass	
Endrin	%	97			70-130	Pass	
Endrin aldehyde	%	92			70-130	Pass	
Endrin ketone	%	94			70-130	Pass	
g-BHC (Lindane)	%	104			70-130	Pass	
Heptachlor	%	98			70-130	Pass	
Heptachlor epoxide	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	%	90			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	94			70-130	Pass	
Dimethoate	%	100			70-130	Pass	
Disulfoton	%	101			70-130	Pass	
Methyl azinphos	%	75			70-130	Pass	
Methyl parathion	%	96			70-130	Pass	
Parathion	%	101			70-130	Pass	
Phorate	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Chloride	%	103			70-130	Pass	
Sulphate (as SO4)	%	114			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	118			70-130	Pass	
Cadmium	%	120			70-130	Pass	
Chromium	%	118			70-130	Pass	
Copper	%	122			70-130	Pass	
Lead	%	114			70-130	Pass	
Mercury	%	96			70-130	Pass	
Nickel	%	117			70-130	Pass	
Zinc	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S15-Jl17541	NCP	%	70			70-130	Pass	
TRH C10-C14	S15-Jl18174	CP	%	100			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S15-Jl17541	NCP	%	80			70-130	Pass	
Toluene	S15-Jl17541	NCP	%	79			70-130	Pass	
Ethylbenzene	S15-Jl17541	NCP	%	78			70-130	Pass	
m&p-Xylenes	S15-Jl17541	NCP	%	82			70-130	Pass	
o-Xylene	S15-Jl17541	NCP	%	81			70-130	Pass	
Xylenes - Total	S15-Jl17541	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S15-Jl20692	NCP	%	100			70-130	Pass	
TRH C6-C10	S15-Jl17541	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S15-Jl18174	CP	%	88			70-130	Pass	
Acenaphthylene	S15-Jl18174	CP	%	86			70-130	Pass	
Anthracene	S15-Jl18174	CP	%	91			70-130	Pass	
Benz(a)anthracene	S15-Jl18174	CP	%	101			70-130	Pass	
Benzo(a)pyrene	S15-Jl18174	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	S15-Jl18174	CP	%	86			70-130	Pass	
Benzo(g.h.i)perylene	S15-Jl18174	CP	%	70			70-130	Pass	
Benzo(k)fluoranthene	S15-Jl18174	CP	%	92			70-130	Pass	
Chrysene	S15-Jl18174	CP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	S15-Jl18174	CP	%	76			70-130	Pass	
Fluoranthene	S15-Jl18174	CP	%	94			70-130	Pass	
Fluorene	S15-Jl18174	CP	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-Jl18174	CP	%	74			70-130	Pass	
Naphthalene	S15-Jl18174	CP	%	86			70-130	Pass	
Phenanthrene	S15-Jl18174	CP	%	87			70-130	Pass	
Pyrene	S15-Jl18174	CP	%	96			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S15-Jl20953	NCP	%	89			70-130	Pass	
4.4'-DDD	S15-Jl20953	NCP	%	129			70-130	Pass	
4.4'-DDE	S15-Jl20953	NCP	%	94			70-130	Pass	
4.4'-DDT	S15-Jl20953	NCP	%	85			70-130	Pass	
a-BHC	S15-Jl20953	NCP	%	92			70-130	Pass	
Aldrin	S15-Jl20953	NCP	%	92			70-130	Pass	
b-BHC	S15-Jl20953	NCP	%	90			70-130	Pass	
d-BHC	S15-Jl20953	NCP	%	92			70-130	Pass	
Dieldrin	S15-Jl20953	NCP	%	107			70-130	Pass	
Endosulfan I	S15-Jl20953	NCP	%	87			70-130	Pass	
Endosulfan II	S15-Jl20953	NCP	%	116			70-130	Pass	
Endosulfan sulphate	S15-Jl20953	NCP	%	97			70-130	Pass	
Endrin	S15-Jl20953	NCP	%	108			70-130	Pass	
Endrin aldehyde	S15-Jl20953	NCP	%	106			70-130	Pass	
Endrin ketone	S15-Jl20953	NCP	%	112			70-130	Pass	
g-BHC (Lindane)	S15-Jl20953	NCP	%	94			70-130	Pass	
Heptachlor	S15-Jl20953	NCP	%	87			70-130	Pass	
Heptachlor epoxide	S15-Jl20953	NCP	%	89			70-130	Pass	
Methoxychlor	S15-Jl20953	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S15-Jl18651	NCP	%	97			70-130	Pass	
Dimethoate	S15-Jl18651	NCP	%	101			70-130	Pass	
Disulfoton	S15-Jl18651	NCP	%	113			70-130	Pass	
Methyl azinphos	S15-Jl18651	NCP	%	72			70-130	Pass	
Methyl parathion	S15-Jl18651	NCP	%	90			70-130	Pass	
Parathion	S15-Jl18651	NCP	%	103			70-130	Pass	
Phorate	S15-Jl18651	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S15-Jl18174	CP	%	126			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S15-Jl16955	NCP	%	99			70-130	Pass	
Cadmium	S15-Jl16955	NCP	%	105			70-130	Pass	
Chromium	S15-Jl16955	NCP	%	93			70-130	Pass	
Copper	S15-Jl16955	NCP	%	101			70-130	Pass	
Lead	S15-Jl17047	NCP	%	96			70-130	Pass	
Mercury	S15-Jl16955	NCP	%	78			70-130	Pass	
Nickel	S15-Jl16955	NCP	%	98			70-130	Pass	
Zinc	S15-Jl20926	NCP	%	96			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S15-Jl21491	NCP	%	103			70-130	Pass	
Sulphate (as SO4)	S15-Jl21491	NCP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Jl17539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-Jl18769	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-Jl18769	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-Jl18769	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-Jl17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-Jl17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-Jl17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-Jl17539	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-Jl17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-Jl17539	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S15-Jl17539	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-Jl17539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-Jl17539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S15-Jl18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S15-Jl20952	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
g-BHC (Lindane)	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S15-Jl20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S15-Jl20952	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S15-Jl20952	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S15-Jl18645	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S15-Jl18645	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S15-Jl18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S15-Jl18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S15-Jl18769	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S15-Jl18769	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S15-Jl18769	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-My20808	NCP	%	19	18	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S15-Jl16947	NCP	mg/kg	2.9	3.1	7.0	30%	Pass	
Cadmium	S15-Jl16947	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-Jl16947	NCP	mg/kg	24	24	1.0	30%	Pass	
Copper	S15-Jl16947	NCP	mg/kg	23	20	18	30%	Pass	
Lead	S15-Jl16947	NCP	mg/kg	52	48	8.0	30%	Pass	
Mercury	S15-Jl16947	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S15-Jl16947	NCP	mg/kg	13	9.7	28	30%	Pass	
Zinc	S15-Jl16947	NCP	mg/kg	120	100	20	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-Jl18175	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C)	M15-Jl17713	NCP	uS/cm	36	30	19	30%	Pass	
pH (1:5 Aqueous extract)	S15-Jl18175	CP	pH Units	8.1	8.1	pass	30%	Pass	
Sulphate (as SO4)	S15-Jl18175	CP	mg/kg	37	38	3.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Charl Du Preez	Analytical Services Manager
Bob Symons	Senior Analyst-Asbestos (NSW)
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention:	Priya Dass
Report	465878-AID
Project Name	UNSW
Project ID	GEOTLCOV24080AS
Received Date	Jul 20, 2015
Date Reported	Jul 27, 2015

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name UNSW
Project ID GEOTLCOV24080AS
Date Sampled Jul 13, 2015
Report 465878-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
BH3_0.1-0.2	15-Jl18174	Jul 13, 2015	Approximate Sample 171g Sample consisted of: Grey coarse-grained soil, rocks and bitumen	No asbestos detected. Organic fibre detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jul 22, 2015	Indefinite

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 465878
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 20, 2015 4:34 PM
Due: Jul 27, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271							X					X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
BH3_0.1-0.2	Jul 13, 2015		Soil	S15-Jl18174	X			X		X	X		X
BH3_0.5-0.6	Jul 13, 2015		Soil	S15-Jl18175			X	X	X		X	X	X
BH3_1.0	Jul 13, 2015		Soil	S15-Jl18176		X							
BH3_2.5	Jul 13, 2015		Soil	S15-Jl18177				X			X		X
BH3_(2.5)	Jul 13, 2015		Soil	S15-Jl18178		X							
BH3_5.5-5.9	Jul 13, 2015		Soil	S15-Jl18179		X							

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

UNITS

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Stardards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by:

Bob Symons Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

Reference No. ______________

CHA_ OF-CUSTODY AND ANALYSIS REQU_T

coffey

Consigning Office:	Chatswood
Report Results to:	Matthew Locke / Priya Dass
Invoices to:	Matt Locke / Priya Dass
Mobile:	
Phone:	
Email:	@coffey.com
Email:	@coffey.com
Project No:	GEOTLCOV24080AS
Task No:	Env Fieldwork
Project Name:	MSB UNSW
Laboratory:	Eurofins MGT
Sampler's Name:	RF
Project Manager:	RF
Special Instructions:	

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH/BTEX/PAH (B4)	Metals (8) (M8)	OCP/OPP (B14)	Asbestos	Aggressivity (pH, chloride, sulphate)	Organic Matter	Cation Exchange Capacity	Metals (32) (M32)						NOTES
	SH04 7.0-7.5	17/7/15		Soil	Jar	Standard	✓	✓												
	BH04 2.5-2.95	17/7/15			Jar															
3	BHC01 9.5-9.95	22/7/15			Jar		✓	✓			✓	✓	✓							
	BH0[illegible] 1.0-1.45	22/7/15			Jar															
5	BH02 0.1-0.2	21/7/15			Jar + bag		✓	✓	✓	✓										
	BH02 5.5-5.95	21/7/15			Jar		✓	✓			✓	✓	✓							
	BH02 2.5-2.95	21/7/15			Jar															
	BH01 2.5-2.95	22/7/15			Jar															
9	BH01 0.1-0.2	22/7/15			Jar + bag		✓		✓	✓				✓						
	BH01 1.0	22/7/15			Jar + bag															
	BH02 1.0	21/7/15			Jar + bag															
12	BH02 0.5-0.6	21/7/15			Jar + bag		✓							✓						
	BH04 1.5-1.6	17/7/15			Jar + bag															
14	BH04 0.2-0.3	17/7/15			Jar + bag		✓			✓				✓						
	BH06 0.1-0.2	21/7/15			Jar + bag		✓	✓												
	BH04 1.0	17/7/15			Jar + bag		✓							✓						
	BH0[illegible] 0.5-0.6	22/7/15			Jar + bag		✓							✓						
	BH0[illegible] 1.0	21/7/15		↓	Jar + bag															

RELINQUISHED BY		RECEIVED BY	
Name: BC	Date: 24/7/15 →	Name: Eurofins MGT	Date: 24/7/15
Coffey Environments	Time:	Company:	Time:
Name:	Date: →	Name: Sean	Date: 30/7
Company:	Time:	Company: EFI MGT	Time: 11:32

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No. 466918

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Reference No. _____

CHAIN OF CUSTODY AND ANALYSIS REQUEST

coffey

Consigning Office: Chatswood

Report Results to: Matthew Locke / Priya Doss Mobile: Email: @coffey.com

Invoices to: Matt Locke / Priya Doss Phone: Email: @coffey.com

Project No: [illegible] Task No: Env. - Fieldwork

Project Name: [illegible] Laboratory: Eurofins MGT

Sampler's Name: AF Project Manager: K

Special Instructions:

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH/BTEX/PAH (B4)	Metals(8)(M8)	OCP/OPP (B14)	Asbestos	Aggressivity(pH, chloride, sulphate)	Organic Matter	Cation Exchange Capacity	NOTES
	BH03 0.5-0.6	21/7		Soil	Jar + bag	Standard	✓	✓						
	BH03 0.1-0.2	21/7		↓	Jar + bag		✓	✓						
	BH03 1.0	21/7			Jar + bag		✓	✓						
	BH04 0.5-0.6	21/7		↓	Jar + bag		✓	✓						

RELINQUISHED BY			RECEIVED BY		
Name: BC	Date: 24/7/15	→	Name: Eurofins MGT	Date: 24/7/15	
Coffey Environments	Time:		Company:	Time:	
Name:	Date:	→	Name:	Date:	
Company:	Time:		Company:	Time:	

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

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Melbourne
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Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name:	**Coffey Geotechnics Pty Ltd Chatswood**
Contact name:	Matthew Locke
Project name:	MSB UNSW
Project ID:	GEOTLCOV24080AS
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Jul 30, 2015 11:32 AM
Eurofins | mgt reference:	**466918**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 10.6 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Extra sample received,BH1 0.1-0.2 Duplicate, has been placed on hold.

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 466918
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
BH04 7.0-7.5	Jul 17, 2015		Soil	S15-Jl25721				X				X		X
BH04 2.5-2.95	Jul 17, 2015		Soil	S15-Jl25722		X								
BH01 8.5-8.95	Jul 22, 2015		Soil	S15-Jl25723			X	X	X			X	X	X
BH01 1.0-1.45	Jul 22, 2015		Soil	S15-Jl25724		X								
BH02 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25725	X			X			X	X		X
BH02 5.5-5.95	Jul 21, 2015		Soil	S15-Jl25726			X	X	X			X	X	X
BH02 2.5-2.95	Jul 21, 2015		Soil	S15-Jl25727		X								
BH01 2.5-2.95	Jul 22, 2015		Soil	S15-Jl25728		X								
BH01 0.1-0.2	Jul 22, 2015		Soil	S15-Jl25729	X					X	X	X		X

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Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

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Contact Name: Matthew Locke

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
BH01 1.0	Jul 22, 2015		Soil	S15-Jl25730		X								
BH02 1.0	Jul 21, 2015		Soil	S15-Jl25731		X								
BH02 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25732						X		X		X
BH04 1.5-1.6	Jul 17, 2015		Soil	S15-Jl25733		X								
BH04 0.2-0.3	Jul 17, 2015		Soil	S15-Jl25734	X					X		X		X
BH06 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25735				X				X		X
BH04 1.0	Jul 17, 2015		Soil	S15-Jl25736						X		X		X
BH01 0.5-0.6	Jul 22, 2015		Soil	S15-Jl25737						X		X		X
BH06 1.0	Jul 21, 2015		Soil	S15-Jl25738		X								
BH05 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25739				X				X		X

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NSW 2067

Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
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Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
BH05 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25740				X				X		X
BH05 1.0	Jul 21, 2015		Soil	S15-Jl25741				X				X		X
BH06 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25742				X				X		X
BH1 0.1-0.2 DUPLICATE	Jul 17, 2015		Soil	S15-Jl25838		X								

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Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Matthew Locke**

Report **466918-S**
Project name MSB UNSW
Project ID GEOTLCOV24080AS
Received Date Jul 30, 2015

Client Sample ID			**BH04 7.0-7.5**	**BH01 8.5-8.95**	**BH02 0.1-0.2**	**BH02 5.5-5.95**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25721**	**S15-Jl25723**	**S15-Jl25725**	**S15-Jl25726**
Date Sampled			**Jul 17, 2015**	**Jul 22, 2015**	**Jul 21, 2015**	**Jul 21, 2015**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	104	74	73	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH04 7.0-7.5	BH01 8.5-8.95	BH02 0.1-0.2	BH02 5.5-5.95
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25721	S15-Jl25723	S15-Jl25725	S15-Jl25726
Date Sampled			Jul 17, 2015	Jul 22, 2015	Jul 21, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	106	119	115	108
p-Terphenyl-d14 (surr.)	1	%	110	121	117	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Dibutylchlorendate (surr.)	1	%	-	-	81	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	86	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			BH04 7.0-7.5	BH01 8.5-8.95	BH02 0.1-0.2	BH02 5.5-5.95
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25721	S15-Jl25723	S15-Jl25725	S15-Jl25726
Date Sampled			Jul 17, 2015	Jul 22, 2015	Jul 21, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	69	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Chloride	10	mg/kg	-	< 10	-	11
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	10	-	16
Organic Matter %	0.01	% w/w	-	0.20	-	0.30
pH (1:5 Aqueous extract)	0.1	pH Units	-	7.0	-	6.8
Sulphate (as SO4)	10	mg/kg	-	< 10	-	< 10
% Moisture	0.1	%	16	14	5.6	16
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	6.2	-	8.4
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	27	< 5
Copper	5	mg/kg	< 5	< 5	74	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	160	< 5
Zinc	5	mg/kg	< 5	15	70	< 5

Client Sample ID			BH01 0.1-0.2	BH02 0.5-0.6	BH04 0.2-0.3	BH06 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25729	S15-Jl25732	S15-Jl25734	S15-Jl25735
Date Sampled			Jul 22, 2015	Jul 21, 2015	Jul 17, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	41
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	88	105	129	91

Client Sample ID			BH01 0.1-0.2	BH02 0.5-0.6	BH04 0.2-0.3	BH06 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25729	S15-Jl25732	S15-Jl25734	S15-Jl25735
Date Sampled			Jul 22, 2015	Jul 21, 2015	Jul 17, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	104	115	114	113
p-Terphenyl-d14 (surr.)	1	%	102	118	116	115
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-

Client Sample ID			BH01 0.1-0.2	BH02 0.5-0.6	BH04 0.2-0.3	BH06 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25729	S15-Jl25732	S15-Jl25734	S15-Jl25735
Date Sampled			Jul 22, 2015	Jul 21, 2015	Jul 17, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Dibutylchlorendate (surr.)	1	%	70	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	88	-	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	-
Coumaphos	0.5	mg/kg	< 0.5	-	-	-
Demeton (total)	1	mg/kg	< 1	-	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	-
Malathion	0.5	mg/kg	< 0.5	-	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-	-
Monocrotophos	10	mg/kg	< 10	-	-	-
Parathion	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.5	mg/kg	< 0.5	-	-	-
Profenofos	0.5	mg/kg	< 0.5	-	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	68	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
% Moisture	0.1	%	6.0	7.2	23	14
Heavy Metals						
Aluminium	10	mg/kg	36000	2600	1500	-
Antimony	10	mg/kg	< 10	< 10	< 10	-
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Barium	10	mg/kg	96	17	< 10	-
Beryllium	2	mg/kg	< 2	< 2	< 2	-
Bismuth	10	mg/kg	< 10	< 10	< 10	-
Boron	10	mg/kg	< 10	< 10	< 10	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	45	11	< 5	11
Cobalt	5	mg/kg	56	< 5	< 5	-
Copper	5	mg/kg	69	< 5	21	43
Iron	5	mg/kg	68000	3900	1800	-
Lead	5	mg/kg	< 5	5.0	12	7.7
Manganese	5	mg/kg	1100	73	24	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	0.25	0.15

Client Sample ID			BH01 0.1-0.2	BH02 0.5-0.6	BH04 0.2-0.3	BH06 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25729	S15-Jl25732	S15-Jl25734	S15-Jl25735
Date Sampled			Jul 22, 2015	Jul 21, 2015	Jul 17, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Heavy Metals						
Molybdenum	5	mg/kg	< 5	< 5	< 5	-
Nickel	5	mg/kg	210	5.4	< 5	48
Selenium	2	mg/kg	< 2	< 2	< 2	-
Silver	5	mg/kg	< 5	< 5	< 5	-
Thallium	10	mg/kg	< 10	< 10	< 10	-
Tin	10	mg/kg	< 10	< 10	< 10	-
Titanium	10	mg/kg	2600	51	93	-
Uranium	1	mg/kg	< 1	< 1	< 1	-
Vanadium	10	mg/kg	84	< 10	< 10	-
Zinc	5	mg/kg	87	7.8	21	36
Alkali Metals						
Calcium	1	mg/kg	16000	750	1300	-
Magnesium	1	mg/kg	57000	830	230	-
Potassium	1	mg/kg	2000	110	490	-
Sodium	1	mg/kg	12000	460	690	-
Extended Metals Suite						
Phosphorus	10	mg/kg	1300	59	74	-
Silicon	100	mg/kg	1000	210	120	-
Sulphur	100	mg/kg	620	190	< 100	-

Client Sample ID			BH04 1.0	BH01 0.5-0.6	BH05 0.5-0.6	BH05 0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25736	S15-Jl25737	S15-Jl25739	S15-Jl25740
Date Sampled			Jul 17, 2015	Jul 22, 2015	Jul 21, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	130	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	140	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	270	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	94	78	109	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH04 1.0 Soil S15-Jl25736 Jul 17, 2015	BH01 0.5-0.6 Soil S15-Jl25737 Jul 22, 2015	BH05 0.5-0.6 Soil S15-Jl25739 Jul 21, 2015	BH05 0.1-0.2 Soil S15-Jl25740 Jul 21, 2015
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	8.1	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	8.1	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	8.1	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	1.3	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	2.2	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	6.6	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	5.2	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	4.2	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	2.7	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	4.8	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	4.4	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	1.0	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	15	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	2.4	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	10	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	12	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	72	< 0.5
2-Fluorobiphenyl (surr.)	1	%	102	116	118	116
p-Terphenyl-d14 (surr.)	1	%	105	116	117	119
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	260	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	580	< 100
% Moisture	0.1	%	8.3	7.7	7.8	11
Heavy Metals						
Aluminium	10	mg/kg	3900	5800	-	-
Antimony	10	mg/kg	< 10	< 10	-	-
Arsenic	2	mg/kg	2.7	< 2	2.8	2.6
Barium	10	mg/kg	< 10	45	-	-
Beryllium	2	mg/kg	< 2	< 2	-	-
Bismuth	10	mg/kg	< 10	< 10	-	-
Boron	10	mg/kg	< 10	< 10	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	11	5.1	17
Cobalt	5	mg/kg	< 5	7.5	-	-
Copper	5	mg/kg	< 5	25	35	42
Iron	5	mg/kg	3700	14000	-	-
Lead	5	mg/kg	< 5	54	150	7.8
Manganese	5	mg/kg	< 5	180	-	-
Mercury	0.05	mg/kg	< 0.05	0.55	1.2	2.3
Molybdenum	5	mg/kg	< 5	< 5	-	-
Nickel	5	mg/kg	< 5	22	< 5	70
Selenium	2	mg/kg	< 2	< 2	-	-
Silver	5	mg/kg	< 5	< 5	-	-
Thallium	10	mg/kg	< 10	< 10	-	-

Client Sample ID			BH04 1.0	BH01 0.5-0.6	BH05 0.5-0.6	BH05 0.1-0.2
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25736**	**S15-Jl25737**	**S15-Jl25739**	**S15-Jl25740**
Date Sampled			**Jul 17, 2015**	**Jul 22, 2015**	**Jul 21, 2015**	**Jul 21, 2015**
Test/Reference	LOR	Unit				
Heavy Metals						
Tin	10	mg/kg	< 10	< 10	-	-
Titanium	10	mg/kg	41	650	-	-
Uranium	1	mg/kg	< 1	< 1	-	-
Vanadium	10	mg/kg	12	26	-	-
Zinc	5	mg/kg	76	40	100	51
Alkali Metals						
Calcium	1	mg/kg	190	3700	-	-
Magnesium	1	mg/kg	73	4300	-	-
Potassium	1	mg/kg	62	270	-	-
Sodium	1	mg/kg	35	980	-	-
Extended Metals Suite						
Phosphorus	10	mg/kg	16	290	-	-
Silicon	100	mg/kg	180	390	-	-
Sulphur	100	mg/kg	< 100	160	-	-

Client Sample ID			BH05 1.0	BH06 0.5-0.6
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25741**	**S15-Jl25742**
Date Sampled			**Jul 21, 2015**	**Jul 21, 2015**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	124
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			BH05 1.0	BH06 0.5-0.6
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25741	S15-Jl25742
Date Sampled			Jul 21, 2015	Jul 21, 2015
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	92	128
p-Terphenyl-d14 (surr.)	1	%	98	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
% Moisture	0.1	%	1.2	7.0
Heavy Metals				
Arsenic	2	mg/kg	< 2	2.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5
Copper	5	mg/kg	8.7	< 5
Lead	5	mg/kg	28	7.8
Mercury	0.05	mg/kg	0.20	0.23
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	14	17

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 31, 2015	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Jul 30, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 30, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 31, 2015	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 31, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Sydney	Jul 31, 2015	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jul 31, 2015	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Eurofins | mgt Suite B18			
Chloride	Sydney	Jul 31, 2015	28 Day
- Method: E033 /E045 /E047 Chloride			
pH (1:5 Aqueous extract)	Sydney	Jul 31, 2015	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Sulphate (as SO4)	Sydney	Jul 31, 2015	28 Day
- Method: E045 Sulphate			
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	Aug 03, 2015	7 Day
- Method: LM-LTM-INO-4030			
Ion Exchange Properties	Melbourne	Aug 03, 2015	
Organic Matter %	Melbourne	Aug 05, 2015	5 Day
- Method: APHA 2540E Fixed and Volatile Solids Ignited at 550C			
Extended Metals Suite	Sydney	Jul 30, 2015	28 Day
- Method: E022 Acid Extractable metals in Soils & E026 Mercury & E022/E030 Cations			
Metals M8	Sydney	Jul 30, 2015	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
% Moisture	Sydney	Jul 30, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261 Site # 18217

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

Company Name:	Coffey Geotechnics Pty Ltd Chatswood	**Order No.:**		**Received:**	Jul 30, 2015 11:32 AM
Address:	Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	466918	**Due:**	Aug 6, 2015
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1002	**Contact Name:**	Matthew Locke
Project Name:	MSB UNSW				
Project ID:	GEOTLCOV24080AS				

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
BH04 7.0-7.5	Jul 17, 2015		Soil	S15-Jl25721				X				X		X
BH04 2.5-2.95	Jul 17, 2015		Soil	S15-Jl25722		X								
BH01 8.5-8.95	Jul 22, 2015		Soil	S15-Jl25723			X	X	X			X	X	X
BH01 1.0-1.45	Jul 22, 2015		Soil	S15-Jl25724		X								
BH02 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25725	X			X			X	X		X
BH02 5.5-5.95	Jul 21, 2015		Soil	S15-Jl25726			X	X	X			X	X	X
BH02 2.5-2.95	Jul 21, 2015		Soil	S15-Jl25727		X								
BH01 2.5-2.95	Jul 22, 2015		Soil	S15-Jl25728		X								
BH01 0.1-0.2	Jul 22, 2015		Soil	S15-Jl25729	X					X	X	X		X

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Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
BH01 1.0	Jul 22, 2015		Soil	S15-Jl25730		X								
BH02 1.0	Jul 21, 2015		Soil	S15-Jl25731		X								
BH02 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25732						X		X		X
BH04 1.5-1.6	Jul 17, 2015		Soil	S15-Jl25733		X								
BH04 0.2-0.3	Jul 17, 2015		Soil	S15-Jl25734	X					X		X		X
BH06 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25735				X				X		X
BH04 1.0	Jul 17, 2015		Soil	S15-Jl25736						X		X		X
BH01 0.5-0.6	Jul 22, 2015		Soil	S15-Jl25737						X		X		X
BH06 1.0	Jul 21, 2015		Soil	S15-Jl25738		X								
BH05 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25739				X				X		X

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Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
BH05 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25740				X				X		X
BH05 1.0	Jul 21, 2015		Soil	S15-Jl25741				X				X		X
BH06 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25742				X				X		X
BH1 0.1-0.2 DUPLICATE	Jul 17, 2015		Soil	S15-Jl25838		X								

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

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

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Chloride	mg/kg	< 10			10	Pass	
Conductivity (1:5 aqueous extract at 25°C)	uS/cm	< 10			10	Pass	
Sulphate (as SO4)	mg/kg	< 10			10	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/kg	< 10			10	Pass	
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Bismuth	mg/kg	< 10			10	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 5			5	Pass	
Thallium	mg/kg	< 10			10	Pass	
Tin	mg/kg	< 10			10	Pass	
Titanium	mg/kg	< 10			10	Pass	
Uranium	mg/kg	< 1			1	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/kg	< 1			1	Pass	
Magnesium	mg/kg	< 1			1	Pass	
Potassium	mg/kg	< 1			1	Pass	
Sodium	mg/kg	< 1			1	Pass	
Method Blank							
Extended Metals Suite							
Phosphorus	mg/kg	< 10			10	Pass	
Silicon	mg/kg	< 100			100	Pass	
Sulphur	mg/kg	< 100			100	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	127			70-130	Pass	
TRH C10-C14	%	95			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	84			70-130	Pass	
Toluene	%	114			70-130	Pass	
Ethylbenzene	%	112			70-130	Pass	
m&p-Xylenes	%	114			70-130	Pass	
o-Xylene	%	117			70-130	Pass	
Xylenes - Total	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	110			70-130	Pass	
TRH C6-C10	%	116			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	94			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	%	87			70-130	Pass	
Benzo(g.h.i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	91			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	%	102			70-130	Pass	
Dibenz(a.h)anthracene	%	127			70-130	Pass	
Fluoranthene	%	91			70-130	Pass	
Fluorene	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	110			70-130	Pass	
Naphthalene	%	84			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	94			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	107			70-130	Pass	
4.4'-DDD	%	112			70-130	Pass	
4.4'-DDE	%	109			70-130	Pass	
4.4'-DDT	%	102			70-130	Pass	
a-BHC	%	105			70-130	Pass	
Aldrin	%	109			70-130	Pass	
b-BHC	%	106			70-130	Pass	
d-BHC	%	111			70-130	Pass	
Dieldrin	%	105			70-130	Pass	
Endosulfan I	%	107			70-130	Pass	
Endosulfan II	%	106			70-130	Pass	
Endosulfan sulphate	%	105			70-130	Pass	
Endrin	%	96			70-130	Pass	
Endrin aldehyde	%	104			70-130	Pass	
Endrin ketone	%	105			70-130	Pass	
g-BHC (Lindane)	%	107			70-130	Pass	
Heptachlor	%	101			70-130	Pass	
Heptachlor epoxide	%	104			70-130	Pass	
Methoxychlor	%	104			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	103			70-130	Pass	
Dimethoate	%	108			70-130	Pass	
Disulfoton	%	103			70-130	Pass	
Methyl azinphos	%	74			70-130	Pass	
Methyl parathion	%	101			70-130	Pass	
Parathion	%	97			70-130	Pass	
Phorate	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	96			70-130	Pass	
LCS - % Recovery							
Chloride	%	99			70-130	Pass	
Sulphate (as SO4)	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	97			70-130	Pass	
Antimony	%	107			70-130	Pass	
Arsenic	%	92			70-130	Pass	
Barium	%	119			70-130	Pass	
Beryllium	%	121			70-130	Pass	
Bismuth	%	120			70-130	Pass	
Boron	%	123			70-130	Pass	
Cadmium	%	89			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	%	91			70-130	Pass	
Cobalt	%	114			70-130	Pass	
Copper	%	88			70-130	Pass	
Iron	%	92			70-130	Pass	
Lead	%	84			70-130	Pass	
Manganese	%	116			70-130	Pass	
Mercury	%	83			70-130	Pass	
Molybdenum	%	127			70-130	Pass	
Nickel	%	88			70-130	Pass	
Selenium	%	114			70-130	Pass	
Silver	%	120			70-130	Pass	
Thallium	%	120			70-130	Pass	
Tin	%	120			70-130	Pass	
Titanium	%	100			70-130	Pass	
Uranium	%	123			70-130	Pass	
Vanadium	%	117			70-130	Pass	
Zinc	%	90			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	110			70-130	Pass	
Magnesium	%	109			70-130	Pass	
Potassium	%	113			70-130	Pass	
Sodium	%	105			70-130	Pass	
LCS - % Recovery							
Extended Metals Suite							
Phosphorus	%	116			70-130	Pass	
Silicon	%	111			70-130	Pass	
Sulphur	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S15-Jl25172	NCP	%	90			70-130	Pass	
TRH C10-C14	S15-Jl25931	NCP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S15-Jl25172	NCP	%	89			70-130	Pass	
Toluene	S15-Jl25172	NCP	%	87			70-130	Pass	
Ethylbenzene	S15-Jl25172	NCP	%	95			70-130	Pass	
m&p-Xylenes	S15-Jl25172	NCP	%	98			70-130	Pass	
o-Xylene	S15-Jl25172	NCP	%	102			70-130	Pass	
Xylenes - Total	S15-Jl25172	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S15-Jl25172	NCP	%	128			70-130	Pass	
TRH C6-C10	S15-Jl25172	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S15-Jl25721	CP	%	99			70-130	Pass	
Acenaphthylene	S15-Jl25721	CP	%	97			70-130	Pass	
Anthracene	S15-Jl25721	CP	%	99			70-130	Pass	
Benz(a)anthracene	S15-Jl25721	CP	%	104			70-130	Pass	
Benzo(a)pyrene	S15-Jl25721	CP	%	104			70-130	Pass	
Benzo(b&j)fluoranthene	S15-Jl25721	CP	%	109			70-130	Pass	
Benzo(g.h.i)perylene	S15-Jl25721	CP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	S15-Jl25721	CP	%	97			70-130	Pass	
Chrysene	S15-Jl25721	CP	%	101			70-130	Pass	
Dibenz(a.h)anthracene	S15-Jl25721	CP	%	87			70-130	Pass	
Fluoranthene	S15-Jl25721	CP	%	100			70-130	Pass	
Fluorene	S15-Jl25721	CP	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-Jl25721	CP	%	88			70-130	Pass	
Naphthalene	S15-Jl25721	CP	%	99			70-130	Pass	
Phenanthrene	S15-Jl25721	CP	%	91			70-130	Pass	
Pyrene	S15-Jl25721	CP	%	101			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S15-Jl25931	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	S15-Jl25890	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S15-Jl27111	NCP	%	99			70-130	Pass	
4.4'-DDD	S15-Jl27111	NCP	%	109			70-130	Pass	
4.4'-DDE	S15-Jl27111	NCP	%	101			70-130	Pass	
4.4'-DDT	S15-Jl27111	NCP	%	100			70-130	Pass	
a-BHC	S15-Jl27111	NCP	%	98			70-130	Pass	
Aldrin	S15-Jl27111	NCP	%	100			70-130	Pass	
b-BHC	S15-Jl27111	NCP	%	96			70-130	Pass	
d-BHC	S15-Jl27111	NCP	%	108			70-130	Pass	
Dieldrin	S15-Jl27111	NCP	%	99			70-130	Pass	
Endosulfan I	S15-Jl27111	NCP	%	100			70-130	Pass	
Endosulfan II	S15-Jl27111	NCP	%	100			70-130	Pass	
Endosulfan sulphate	S15-Jl27111	NCP	%	104			70-130	Pass	
Endrin	S15-Jl27111	NCP	%	97			70-130	Pass	
Endrin aldehyde	S15-Jl27111	NCP	%	93			70-130	Pass	
Endrin ketone	S15-Jl27111	NCP	%	102			70-130	Pass	
g-BHC (Lindane)	S15-Jl27111	NCP	%	102			70-130	Pass	
Heptachlor	S15-Jl27111	NCP	%	98			70-130	Pass	
Heptachlor epoxide	S15-Jl27111	NCP	%	98			70-130	Pass	
Methoxychlor	S15-Jl27111	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S15-Jl27112	NCP	%	95			70-130	Pass	
Dimethoate	S15-Jl27112	NCP	%	101			70-130	Pass	
Disulfoton	S15-Jl27112	NCP	%	126			70-130	Pass	
Methyl azinphos	S15-Jl27112	NCP	%	92			70-130	Pass	
Methyl parathion	S15-Jl27112	NCP	%	94			70-130	Pass	
Parathion	S15-Jl27112	NCP	%	95			70-130	Pass	
Phorate	S15-Jl27112	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Manganese	S15-Jl25890	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	S15-Jl25735	CP	%	86			70-130	Pass	
Arsenic	S15-Jl25735	CP	%	102			70-130	Pass	
Barium	S15-Jl25735	CP	%	87			70-130	Pass	
Beryllium	S15-Jl25735	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bismuth	S15-Jl25735	CP	%	88			70-130	Pass	
Boron	S15-Jl25735	CP	%	104			70-130	Pass	
Cadmium	S15-Jl25735	CP	%	104			70-130	Pass	
Chromium	S15-Jl25735	CP	%	105			70-130	Pass	
Cobalt	S15-Jl25735	CP	%	87			70-130	Pass	
Lead	S15-Jl25735	CP	%	108			70-130	Pass	
Mercury	S15-Jl25735	CP	%	113			70-130	Pass	
Molybdenum	S15-Jl25735	CP	%	70			70-130	Pass	
Nickel	S15-Jl25735	CP	%	74			70-130	Pass	
Selenium	S15-Jl25735	CP	%	99			70-130	Pass	
Silver	S15-Jl25735	CP	%	89			70-130	Pass	
Thallium	S15-Jl25735	CP	%	88			70-130	Pass	
Uranium	S15-Jl25735	CP	%	114			70-130	Pass	
Vanadium	S15-Jl25735	CP	%	98			70-130	Pass	
Zinc	S15-Jl25735	CP	%	70			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S15-Jl25735	CP	%	78			70-130	Pass	
Potassium	S15-Jl25735	CP	%	114			70-130	Pass	
Spike - % Recovery									
Extended Metals Suite				Result 1					
Phosphorus	S15-Jl25735	CP	%	118			70-130	Pass	
Sulphur	S15-Jl25735	CP	%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-Jl24046	NCP	mg/kg	200	200	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C)	M15-Jl25631	NCP	uS/cm	16	13	21	30%	Pass	
Sulphate (as SO4)	S15-Jl24046	NCP	mg/kg	120	120	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S15-Jl25725	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-Jl25725	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-Jl25725	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B15-Jl26040	NCP	mg/kg	**	< 0.1	<1	30%	Pass	
4.4'-DDD	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
4.4'-DDE	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
4.4'-DDT	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
a-BHC	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Aldrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
b-BHC	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
d-BHC	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Dieldrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan I	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan II	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin aldehyde	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin ketone	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Heptachlor	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Heptachlor epoxide	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Hexachlorobenzene	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Methoxychlor	B15-Jl26040	NCP	mg/kg	**	< 0.2	<1	30%	Pass	
Toxaphene	B15-Jl26040	NCP	mg/kg	**	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S15-Jl26280	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S15-Jl26280	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S15-Jl25725	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S15-Jl25725	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S15-Jl25725	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract)	S15-Jl25726	CP	pH Units	6.8	6.9	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-Jl25734	CP	%	23	22	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S15-Jl25734	CP	mg/kg	1500	1400	11	30%	Pass	
Antimony	S15-Jl25734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	S15-Jl25734	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Barium	S15-Jl25734	CP	mg/kg	< 10	29	97	30%	Fail	Q15
Beryllium	S15-Jl25734	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	S15-Jl25734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	S15-Jl25734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	S15-Jl25734	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-Jl25734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Cobalt	S15-Jl25734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S15-Jl25734	CP	mg/kg	21	21	1.0	30%	Pass	
Iron	S15-Jl25734	CP	mg/kg	1800	1500	16	30%	Pass	
Lead	S15-Jl25734	CP	mg/kg	12	14	16	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese	S15-Jl25734	CP	mg/kg	24	23	5.0	30%	Pass	
Mercury	S15-Jl25734	CP	mg/kg	0.25	0.31	21	30%	Pass	
Molybdenum	S15-Jl25734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	S15-Jl25734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	S15-Jl25734	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	S15-Jl25734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Thallium	S15-Jl25734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	S15-Jl25734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Uranium	S15-Jl25734	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Vanadium	S15-Jl25734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	S15-Jl25734	CP	mg/kg	21	35	49	30%	Fail	Q15
Duplicate									
Extended Metals Suite				Result 1	Result 2	RPD			
Phosphorus	S15-Jl25734	CP	mg/kg	74	70	5.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Jl25735	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-Jl25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-Jl25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-Jl25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-Jl25735	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-Jl25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-Jl25735	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S15-Jl25735	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-Jl25735	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-Jl25735	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S15-Jl26988	NCP	mg/kg	4300	4100	5.0	30%	Pass	
Potassium	S15-Jl26988	NCP	mg/kg	1700	1800	8.0	30%	Pass	
Duplicate									
Extended Metals Suite				Result 1	Result 2	RPD			
Sulphur	S15-Jl26988	NCP	mg/kg	5500	6700	19	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S15-Jl25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Magnesium	S15-Jl26988	NCP	mg/kg	2700	3000	11	30%	Pass	
Sodium	S15-Jl26988	NCP	mg/kg	190	230	19	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Charl Du Preez	Analytical Services Manager
Bob Symons	Senior Analyst-Asbestos (NSW)
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention:	Matthew Locke
Report	466918-AID
Project Name	MSB UNSW
Project ID	GEOTLCOV24080AS
Received Date	Jul 30, 2015
Date Reported	Aug 06, 2015

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name MSB UNSW
Project ID GEOTLCOV24080AS
Date Sampled Jul 17, 2015 to Jul 22, 2015
Report 466918-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
BH02 0.1-0.2	15-Jl25725	Jul 21, 2015	Approximate Sample 128g Sample consisted of: Grey-brown coarse-grained soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH01 0.1-0.2	15-Jl25729	Jul 22, 2015	Approximate Sample 162g Sample consisted of: Grey-brown coarse-grained soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH04 0.2-0.3	15-Jl25734	Jul 17, 2015	Approximate Sample 210g Sample consisted of: Grey-beige coarse-grained soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jul 31, 2015	Indefinite

eurofins | mgt

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Sydney
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NATA # 1261 Site # 18217

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

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 466918
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X			X	X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
BH04 7.0-7.5	Jul 17, 2015		Soil	S15-Jl25721				X				X		X
BH04 2.5-2.95	Jul 17, 2015		Soil	S15-Jl25722		X								
BH01 8.5-8.95	Jul 22, 2015		Soil	S15-Jl25723			X	X	X			X	X	X
BH01 1.0-1.45	Jul 22, 2015		Soil	S15-Jl25724		X								
BH02 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25725	X			X			X	X		X
BH02 5.5-5.95	Jul 21, 2015		Soil	S15-Jl25726			X	X	X			X	X	X
BH02 2.5-2.95	Jul 21, 2015		Soil	S15-Jl25727		X								
BH01 2.5-2.95	Jul 22, 2015		Soil	S15-Jl25728		X								
BH01 0.1-0.2	Jul 22, 2015		Soil	S15-Jl25729	X					X	X	X		X

eurofins | mgt

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Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X			X	X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
BH01 1.0	Jul 22, 2015		Soil	S15-Jl25730		X								
BH02 1.0	Jul 21, 2015		Soil	S15-Jl25731		X								
BH02 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25732						X		X		X
BH04 1.5-1.6	Jul 17, 2015		Soil	S15-Jl25733		X								
BH04 0.2-0.3	Jul 17, 2015		Soil	S15-Jl25734	X					X		X		X
BH06 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25735				X				X		X
BH04 1.0	Jul 17, 2015		Soil	S15-Jl25736						X		X		X
BH01 0.5-0.6	Jul 22, 2015		Soil	S15-Jl25737						X		X		X
BH06 1.0	Jul 21, 2015		Soil	S15-Jl25738		X								
BH05 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25739				X				X		X

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Sample Detail					Asbestos Absence /Presence	HOLD	Organic Matter %	Metals M8	Eurofins | mgt Suite B18	Extended Metals Suite	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins | mgt Suite B4
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X			X	X	
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
BH05 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25740				X				X		X
BH05 1.0	Jul 21, 2015		Soil	S15-Jl25741				X				X		X
BH06 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25742				X				X		X
BH1 0.1-0.2 DUPLICATE	Jul 17, 2015		Soil	S15-Jl25838		X								

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

UNITS

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Stardards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by:

Bob Symons Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 0951

coffey

Consigning Office: Chatswood

Report Results to: Priya Dass / Matt Locke Mobile: Email: @coffey.com

Invoices to: Priya Dass / Matt Locke Phone: Email: @coffey.com

Project No: GEOTLCOV24080AS Task No:

Project Name: MSB UNSW Laboratory: Eurofins MGT

Sampler's Name: Priya Dass Project Manager: Priya Dass / Matt Locke

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH/BTEX/PAH (84)	Metals (8)	OCP/OPP (M8)	Asbestos	Aggressivity (pH, chloride, sulphate)	Organic Matter	Cation Exchange capacity	PCB	Metals (32) (M32)	NOTES
	BH7_0.22-0.32	27/7/15		Soil	1x250ml GT+	standard										
	BH7_0.5-0.6	↓			1x ziplock bag+											
	BH7A_0.22-0.32	28/7/15			Ice/bricks		✓		✓					✓		
	BH7A_0.5-0.6						✓							✓		
	BH7A_1.0-1.1															
	BH7A_2.1-2.2															
	BH7A_3.0-3.1															
	BH7A_4.0-4.1															
	BH7A_5.0-5.1															
	BH7A_6.0-6.1						✓	✓								
	BH7A_7.0-7.1															
	BH7A_7.9-8.0	↓														
	BH8_0.4-0.5	27/7/15					✓		✓					✓	✓	
	BH8_1.0-1.1															
	BH8_2.0-2.1															
	BH8_3.0-3.1															
	BH8_4.0-4.1						✓	✓								
	BH8_5.0-5.1	↓		↓	↓											

RELINQUISHED BY

Name: Priya Dass Date: 29/7/15 →

Coffey Environments Time: 12:30p.m.

Name: Date: →

Company: Time:

RECEIVED BY

Name: P L Date: 29/7/15

Company: Toll Time: 1230

Name: Sean Date: 30/7

Company: Ef/MGT Time: 1:32

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☑

All Documentation is in Proper Order ☑

Samples Received Properly Chilled ☑

Lab. Ref/Batch No. 466933

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 0952

coffey

Consigning Office: Chatswood

Report Results to: Priya Dass / Matt Locke Mobile: Email: @coffey.com

Invoices to: Priya Dass / Matt Locke Phone: Email: @coffey.com

Project No: GEOTLCOV24080AS Task No:

Project Name: MSB, UNSW Laboratory: Eurofins MGT

Sampler's Name: Priya Dass Project Manager: Priya Dass / Matt Locke

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH/BTEX/PAH (B14)	Metals (8) (M8)	OCP/OPP (B14)	Asbestos	Aggressivity (pH, chloride, sulphate)	Organic Matter	Cation Exchange Capacity	PCB	Metals 32 (M32)	NOTES
	BH8 6.0-6.1					Standard										
	BH8 6.9-7.0															
	BH9 0.1-0.2						✓		✓					✓		
	BH9 0.5-0.6															
	BH9 1.0-1.1															
	BH9 2.0-2.1															
	BH9 2.2-2.3															
	BH9 3.0-3.1															
	BH9 3.8-3.9															
	BH10 0.11-0.21						✓		✓					✓		
	BH10 0.5-0.6						✓							✓		
	BH10 1.0-1.1															
	BH10 2.0-2.1															
	BH10 3.0-3.1															
	BH10 3.8-3.9															
	BH11 0.2-0.3	28/7/15					✓	✓								
	BH11 0.5-0.6															
	BH11 1.0-1.1						✓	✓								

RELINQUISHED BY		RECEIVED BY	
Name: Priya Dass	Date: 29/7/15	Name: [illegible]	Date: 29/7/15
Coffey Environments	Time: 12:30p.m.	Company: Toll	Time: 1230
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 0953

coffey

Consigning Office: Chatswood

Report Results to: Priya Dass / Matt Locke Mobile: Email: @coffey.com

Invoices to: Priya Dass / Matt Locke Phone: Email: @coffey.com

Project No: GEOTLCOV24080AS Task No:

Project Name: MSB, UNSW Laboratory: Eurofins MGT

Sampler's Name: Priya Dass Project Manager: Priya Dass / Matt Locke

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH/BTEX/PAH (B4)	Metals (8) (M8)	OCP/OPP (B14)	Asbestos	Aggressivity (pH chloride, sulphate)	Organic Matter	Cation Exchange Capacity	Metals (32) (M32)	NOTES
	BH11 2.1-2.2					Standard									
	BH11 3.0-3.1														
	BH11 3.8-3.9														
	BH12 0.1-0.2	27/7/15					✓		✓			✓			
	BH12 0.5-0.6														
	BH12 1.0-1.1														
	BH12 2.0-2.1														
	BH12 3.0-3.1														
	BH12 3.8-3.9														
	BH13 0.5-0.6	28/7/15					✓	✓							
	BH13 1.0-1.1						✓	✓							
	BH13 2.0-2.1														
	BH13 3.0-3.1														
	BH13 3.8-3.9														
	DUP1	27/7/15			1x250GJ +										
	DUP1A				Ice/Bricks										Send to Enviolab
	DUP2														
	DUP3	28/7/15					✓					✓			

RELINQUISHED BY

Name: Priya Dass Date: 29/7/15 →

Coffey Environments Time: 12:30p.m.

Name: Date: →

Company: Time:

RECEIVED BY

Name: P Li Date: 29/7/15

Company: Toll Time: 1230

Name: Date:

Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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coffey

Consigning Office: Chatswood

Report Results to: Priya Dass / Matt Locke Mobile: Email: @coffey.com

Invoices to: Priya Dass / Matt Locke Phone: Email: @coffey.com

Project No: GEOTLCOV24080AS Task No:

Project Name: MSB, UNSW Laboratory: Eurofins MGT

Sampler's Name: Priya Dass Project Manager: Priya Dass / Matt Locke

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	TRH/BTEX/PAH (B4)	Metals (8) (M8)	OCP/OPP (B14)	Asbestos	Aggressivity (pH, chloride, sulphate)	Organic Matter	Cation Exchange Capacity	TRH/BTEX	BTEX	Metals (8) (M32)	NOTES
	DUP 3A	↓		↓	↓	Standard	✓										Send to Enviolab
	DUP4						✓	✓									
	DUP5																
	DUP5A																Send to Enviolab
	RB			Water	1×1L Amber + 1×red plastic + 2×GV		✓	✓									
	TB				2×GV								✓				
	TS	↓		↓	↓									✓			

RELINQUISHED BY		RECEIVED BY	
Name: Priya Dass	Date: 29/7/15 →	Name: P L	Date: 29/7/15
Coffey Environments	Time: 12:30p.m.	Company: Toll	Time: 1230
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

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NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name:	**Coffey Geotechnics Pty Ltd Chatswood**
Contact name:	Priya Dass
Project name:	MSB UNSW
Project ID:	GEOTLCOV24080AS
COC number:	0951-54
Turn around time:	5 Day
Date/Time received:	Jul 30, 2015 11:32 AM
Eurofins | mgt reference:	**466933**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 3.8 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Sample ID discrepancy: COC: BH12_0.1-0.2 JAR & BAG: BH12_0.15-0.25 ID as per COC | Samples DUP1A, DUP3A & DUP5A forwarded to Envirolab

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Priya Dass - priya_dass@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 466933
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-Jl25878		X									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25879		X									
BH7A_0.22-0.32	Jul 28, 2015		Soil	S15-Jl25880	X						X			X	X
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25881							X			X	X
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25882		X									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25883		X									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25884		X									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-Jl25885		X									

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Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-Jl25886		X									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-Jl25887				X						X	X
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-Jl25888		X									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-Jl25889		X									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-Jl25890	X		X				X			X	X
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25891		X									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25892		X									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25893		X									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-Jl25894				X						X	X
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-Jl25895		X									

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Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-Jl25896		X									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		X									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	X						X			X	X
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		X									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25900		X									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25901		X									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-Jl25902		X									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25903		X									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25904		X									
BH10_0.11-0.21	Jul 27, 2015		Soil	S15-Jl25905			X				X	X		X	X

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25906							X			X	X
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25907		X									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25908		X									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25909		X									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		X									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				X						X	X
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		X									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				X						X	X
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		X									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		X									

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Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH11_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25916		X									
BH12_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25917	X						X			X	X
BH12_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25918		X									
BH12_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25919		X									
BH12_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25920		X									
BH12_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25921		X									
BH12_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25922		X									
BH13_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25923				X						X	X
BH13_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25924				X						X	X
BH13_2.0-2.1	Jul 28, 2015		Soil	S15-Jl25925		X									

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Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25926		X									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25927		X									
DUP1	Jul 27, 2015		Soil	S15-Jl25928		X									
DUP2	Jul 27, 2015		Soil	S15-Jl25929		X									
DUP3	Jul 28, 2015		Soil	S15-Jl25930							X			X	X
DUP4	Jul 28, 2015		Soil	S15-Jl25931				X						X	X
DUP5	Jul 28, 2015		Soil	S15-Jl25932		X									
RB	Jul 28, 2015		Water	S15-Jl25933					X						X
TB	Jul 28, 2015		Water	S15-Jl25934									X		
TS	Jul 28, 2015		Water	S15-Jl25935						X					

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Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Priya Dass**

Report **466933-S**
Project name MSB UNSW
Project ID GEOTLCOV24080AS
Received Date Jul 30, 2015

Client Sample ID			**BH7A_0.22-0.32**	**BH7A_0.5-0.6**	**BH7A_6.0-6.1**	**BH8_0.4-0.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25880**	**S15-Jl25881**	**S15-Jl25887**	**S15-Jl25890**
Date Sampled			**Jul 28, 2015**	**Jul 28, 2015**	**Jul 28, 2015**	**Jul 27, 2015**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	80	126	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH7A_0.22-0.32	BH7A_0.5-0.6	BH7A_6.0-6.1	BH8_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25880	S15-Jl25881	S15-Jl25887	S15-Jl25890
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 28, 2015	Jul 27, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	132	112	118	118
p-Terphenyl-d14 (surr.)	1	%	126	113	120	120
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	-	< 0.5
Total PCB*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	72
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Aluminium	10	mg/kg	3400	3600	-	200
Antimony	10	mg/kg	< 10	< 10	-	< 10
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Barium	10	mg/kg	< 10	30	-	< 10
Beryllium	2	mg/kg	< 2	< 2	-	< 2
Bismuth	10	mg/kg	< 10	< 10	-	< 10
Boron	10	mg/kg	< 10	< 10	-	< 10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	-	< 5
Copper	5	mg/kg	< 5	16	< 5	< 5
Iron	5	mg/kg	1600	2700	-	160
Lead	5	mg/kg	5.7	65	< 5	< 5
Manganese	5	mg/kg	5.4	36	-	< 5
Mercury	0.05	mg/kg	< 0.05	0.63	< 0.05	< 0.05
Molybdenum	5	mg/kg	< 5	< 5	-	< 5
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	-	< 2
Silver	5	mg/kg	< 5	< 5	-	< 5
Thallium	10	mg/kg	< 10	< 10	-	< 10
Tin	10	mg/kg	< 10	< 10	-	< 10
Titanium	10	mg/kg	21	55	-	11
Uranium	1	mg/kg	< 1	< 1	-	< 1
Vanadium	10	mg/kg	< 10	< 10	-	< 10
Zinc	5	mg/kg	18	53	< 5	< 5

Client Sample ID			BH7A_0.22-0.32	BH7A_0.5-0.6	BH7A_6.0-6.1	BH8_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25880	S15-Jl25881	S15-Jl25887	S15-Jl25890
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 28, 2015	Jul 27, 2015
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	1	mg/kg	360	900	-	140
Magnesium	1	mg/kg	61	180	-	70
Potassium	1	mg/kg	94	230	-	9.9
Sodium	1	mg/kg	48	230	-	24
Extended Metals Suite						
Phosphorus	10	mg/kg	23	160	-	< 10
Silicon	100	mg/kg	140	150	-	< 100
Sulphur	100	mg/kg	< 100	110	-	< 100
% Moisture	0.1	%	15	8.5	22	5.2

Client Sample ID			BH8_4.0-4.1	BH9_0.1-0.2	BH10_0.11-0.21	BH10_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25894	S15-Jl25898	S15-Jl25905	S15-Jl25906
Date Sampled			Jul 27, 2015	Jul 27, 2015	Jul 27, 2015	Jul 27, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	84	78	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH8_4.0-4.1	BH9_0.1-0.2	BH10_0.11-0.21	BH10_0.5-0.6
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25894**	**S15-Jl25898**	**S15-Jl25905**	**S15-Jl25906**
Date Sampled			**Jul 27, 2015**	**Jul 27, 2015**	**Jul 27, 2015**	**Jul 27, 2015**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	117	117	114	117
p-Terphenyl-d14 (surr.)	1	%	117	118	112	123
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Dibutylchlorendate (surr.)	1	%	-	-	81	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	109	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	81	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	109	-

Client Sample ID			BH8_4.0-4.1	BH9_0.1-0.2	BH10_0.11-0.21	BH10_0.5-0.6
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25894**	**S15-Jl25898**	**S15-Jl25905**	**S15-Jl25906**
Date Sampled			**Jul 27, 2015**	**Jul 27, 2015**	**Jul 27, 2015**	**Jul 27, 2015**
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	119	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Aluminium	10	mg/kg	-	6400	3800	4300
Antimony	10	mg/kg	-	< 10	< 10	< 10
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Barium	10	mg/kg	-	22	< 10	< 10
Beryllium	2	mg/kg	-	< 2	< 2	< 2
Bismuth	10	mg/kg	-	< 10	< 10	< 10
Boron	10	mg/kg	-	< 10	< 10	< 10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	5.3	< 5	5.8
Cobalt	5	mg/kg	-	5.7	10	< 5
Copper	5	mg/kg	< 5	13	5.3	< 5
Iron	5	mg/kg	-	6400	2900	3600
Lead	5	mg/kg	< 5	23	8.8	< 5
Manganese	5	mg/kg	-	87	14	14
Mercury	0.05	mg/kg	< 0.05	0.05	0.05	< 0.05
Molybdenum	5	mg/kg	-	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	14	< 5	< 5
Selenium	2	mg/kg	-	< 2	< 2	< 2
Silver	5	mg/kg	-	< 5	< 5	< 5
Thallium	10	mg/kg	-	< 10	< 10	< 10

Client Sample ID			BH8_4.0-4.1	BH9_0.1-0.2	BH10_0.11-0.21	BH10_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25894	S15-Jl25898	S15-Jl25905	S15-Jl25906
Date Sampled			Jul 27, 2015	Jul 27, 2015	Jul 27, 2015	Jul 27, 2015
Test/Reference	LOR	Unit				
Heavy Metals						
Tin	10	mg/kg	-	< 10	< 10	< 10
Titanium	10	mg/kg	-	360	62	20
Uranium	1	mg/kg	-	< 1	< 1	< 1
Vanadium	10	mg/kg	-	14	< 10	< 10
Zinc	5	mg/kg	< 5	22	19	< 5
Alkali Metals						
Calcium	1	mg/kg	-	1800	800	80
Magnesium	1	mg/kg	-	3200	220	59
Potassium	1	mg/kg	-	180	160	70
Sodium	1	mg/kg	-	710	220	79
Extended Metals Suite						
Phosphorus	10	mg/kg	-	130	52	13
Silicon	100	mg/kg	-	260	160	170
Sulphur	100	mg/kg	-	< 100	< 100	< 100
% Moisture	0.1	%	6.0	3.2	13	2.7

Client Sample ID			BH11_0.2-0.3	BH11_1.0-1.1	BH12_0.1-0.2	BH13_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25911	S15-Jl25913	S15-Jl25917	S15-Jl25923
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 27, 2015	Jul 28, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	93	83	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	1.0	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.3	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH11_0.2-0.3	BH11_1.0-1.1	BH12_0.1-0.2	BH13_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25911	S15-Jl25913	S15-Jl25917	S15-Jl25923
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 27, 2015	Jul 28, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	1.2	< 0.5	1.8	< 0.5
2-Fluorobiphenyl (surr.)	1	%	120	116	109	111
p-Terphenyl-d14 (surr.)	1	%	122	116	110	113
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Aluminium	10	mg/kg	-	-	2800	-
Antimony	10	mg/kg	-	-	< 10	-
Arsenic	2	mg/kg	3.7	< 2	< 2	< 2
Barium	10	mg/kg	-	-	30	-
Beryllium	2	mg/kg	-	-	< 2	-
Bismuth	10	mg/kg	-	-	< 10	-
Boron	10	mg/kg	-	-	< 10	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	10	< 5	< 5	< 5
Cobalt	5	mg/kg	-	-	< 5	-
Copper	5	mg/kg	76	< 5	9.8	< 5
Iron	5	mg/kg	-	-	2600	-
Lead	5	mg/kg	190	< 5	20	< 5
Manganese	5	mg/kg	-	-	37	-
Mercury	0.05	mg/kg	0.74	< 0.05	0.13	< 0.05
Molybdenum	5	mg/kg	-	-	< 5	-
Nickel	5	mg/kg	17	< 5	< 5	< 5
Selenium	2	mg/kg	-	-	< 2	-
Silver	5	mg/kg	-	-	< 5	-
Thallium	10	mg/kg	-	-	< 10	-
Tin	10	mg/kg	-	-	< 10	-
Titanium	10	mg/kg	-	-	59	-
Uranium	1	mg/kg	-	-	< 1	-
Vanadium	10	mg/kg	-	-	< 10	-
Zinc	5	mg/kg	89	16	18	8.3

Client Sample ID			BH11_0.2-0.3	BH11_1.0-1.1	BH12_0.1-0.2	BH13_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25911	S15-Jl25913	S15-Jl25917	S15-Jl25923
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 27, 2015	Jul 28, 2015
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	1	mg/kg	-	-	2400	-
Magnesium	1	mg/kg	-	-	360	-
Potassium	1	mg/kg	-	-	79	-
Sodium	1	mg/kg	-	-	95	-
Extended Metals Suite						
Phosphorus	10	mg/kg	-	-	90	-
Silicon	100	mg/kg	-	-	290	-
Sulphur	100	mg/kg	-	-	< 100	-
% Moisture	0.1	%	9.7	2.0	5.5	2.5

Client Sample ID			BH13_1.0-1.1	DUP3	DUP4
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25924	S15-Jl25930	S15-Jl25931
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 28, 2015
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	83	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			BH13_1.0-1.1	DUP3	DUP4
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S15-Jl25924	S15-Jl25930	S15-Jl25931
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 28, 2015
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.6
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	1.2
2-Fluorobiphenyl (surr.)	1	%	113	111	114
p-Terphenyl-d14 (surr.)	1	%	114	114	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
Heavy Metals					
Aluminium	10	mg/kg	-	4000	-
Antimony	10	mg/kg	-	< 10	-
Arsenic	2	mg/kg	< 2	< 2	2.9
Barium	10	mg/kg	-	< 10	-
Beryllium	2	mg/kg	-	< 2	-
Bismuth	10	mg/kg	-	< 10	-
Boron	10	mg/kg	-	< 10	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	14
Cobalt	5	mg/kg	-	< 5	-
Copper	5	mg/kg	< 5	< 5	22
Iron	5	mg/kg	-	1900	-
Lead	5	mg/kg	< 5	9.3	33
Manganese	5	mg/kg	-	5.4	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	0.23
Molybdenum	5	mg/kg	-	< 5	-
Nickel	5	mg/kg	< 5	< 5	17
Selenium	2	mg/kg	-	< 2	-
Silver	5	mg/kg	-	< 5	-
Thallium	10	mg/kg	-	< 10	-
Tin	10	mg/kg	-	< 10	-
Titanium	10	mg/kg	-	19	-
Uranium	1	mg/kg	-	< 1	-
Vanadium	10	mg/kg	-	< 10	-
Zinc	5	mg/kg	< 5	26	41
Alkali Metals					
Calcium	1	mg/kg	-	400	-
Magnesium	1	mg/kg	-	57	-
Potassium	1	mg/kg	-	120	-
Sodium	1	mg/kg	-	79	-
Extended Metals Suite					
Phosphorus	10	mg/kg	-	30	-
Silicon	100	mg/kg	-	150	-
Sulphur	100	mg/kg	-	< 100	-

Client Sample ID			BH13_1.0-1.1	DUP3	DUP4
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S15-Jl25924**	**S15-Jl25930**	**S15-Jl25931**
Date Sampled			**Jul 28, 2015**	**Jul 28, 2015**	**Jul 28, 2015**
Test/Reference	LOR	Unit			
% Moisture	0.1	%	2.7	11	9.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 31, 2015	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Jul 30, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 30, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 31, 2015	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 31, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Sydney	Jul 31, 2015	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jul 31, 2015	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Polychlorinated Biphenyls	Sydney	Jul 31, 2015	28 Day
Extended Metals Suite	Sydney	Jul 30, 2015	28 Day
- Method: E022 Acid Extractable metals in Soils & E026 Mercury & E022/E030 Cations			
Metals M8	Sydney	Jul 30, 2015	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
% Moisture	Sydney	Jul 30, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
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Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 466933
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-Jl25878		X									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25879		X									
BH7A_0.22-0.32	Jul 28, 2015		Soil	S15-Jl25880	X						X			X	X
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25881							X			X	X
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25882		X									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25883		X									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25884		X									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-Jl25885		X									

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NATA # 1261 Site # 20794

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Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-Jl25886		X									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-Jl25887				X						X	X
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-Jl25888		X									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-Jl25889		X									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-Jl25890	X		X				X			X	X
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25891		X									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25892		X									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25893		X									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-Jl25894				X						X	X
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-Jl25895		X									

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-Jl25896		X									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		X									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	X						X			X	X
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		X									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25900		X									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25901		X									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-Jl25902		X									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25903		X									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25904		X									
BH10_0.11-0.21	Jul 27, 2015		Soil	S15-Jl25905			X				X	X		X	X

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25906							X			X	X
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25907		X									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25908		X									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25909		X									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		X									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				X						X	X
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		X									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				X						X	X
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		X									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		X									

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH11_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25916		X									
BH12_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25917	X						X			X	X
BH12_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25918		X									
BH12_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25919		X									
BH12_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25920		X									
BH12_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25921		X									
BH12_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25922		X									
BH13_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25923				X						X	X
BH13_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25924				X						X	X
BH13_2.0-2.1	Jul 28, 2015		Soil	S15-Jl25925		X									

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Project ID: GEOTLCOV24080AS

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Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25926		X									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25927		X									
DUP1	Jul 27, 2015		Soil	S15-Jl25928		X									
DUP2	Jul 27, 2015		Soil	S15-Jl25929		X									
DUP3	Jul 28, 2015		Soil	S15-Jl25930							X			X	X
DUP4	Jul 28, 2015		Soil	S15-Jl25931				X						X	X
DUP5	Jul 28, 2015		Soil	S15-Jl25932		X									
RB	Jul 28, 2015		Water	S15-Jl25933					X						X
TB	Jul 28, 2015		Water	S15-Jl25934									X		
TS	Jul 28, 2015		Water	S15-Jl25935						X					

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

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

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/kg	< 10			10	Pass	
Antimony	mg/kg	< 10			10	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Beryllium	mg/kg	< 2			2	Pass	
Bismuth	mg/kg	< 10			10	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Iron	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 5			5	Pass	
Thallium	mg/kg	< 10			10	Pass	
Tin	mg/kg	< 10			10	Pass	
Titanium	mg/kg	< 10			10	Pass	
Uranium	mg/kg	< 1			1	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/kg	< 1			1	Pass	
Magnesium	mg/kg	< 1			1	Pass	
Potassium	mg/kg	< 1			1	Pass	
Method Blank							
Extended Metals Suite							
Phosphorus	mg/kg	< 10			10	Pass	
Silicon	mg/kg	< 100			100	Pass	
Sulphur	mg/kg	< 100			100	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	93			70-130	Pass	
TRH C10-C14	%	109			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	105			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
o-Xylene	%	106			70-130	Pass	
Xylenes - Total	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	88			70-130	Pass	
TRH C6-C10	%	94			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	102			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	115			70-130	Pass	
Benzo(a)pyrene	%	120			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	91			70-130	Pass	
Benzo(k)fluoranthene	%	120			70-130	Pass	
Chrysene	%	112			70-130	Pass	
Dibenz(a.h)anthracene	%	96			70-130	Pass	
Fluoranthene	%	105			70-130	Pass	
Fluorene	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	95			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
Phenanthrene	%	98			70-130	Pass	
Pyrene	%	107			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	99			70-130	Pass	
4.4'-DDD	%	103			70-130	Pass	
4.4'-DDE	%	101			70-130	Pass	
4.4'-DDT	%	97			70-130	Pass	
a-BHC	%	96			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	99			70-130	Pass	
d-BHC	%	107			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	100			70-130	Pass	
Endosulfan II	%	98			70-130	Pass	
Endosulfan sulphate	%	97			70-130	Pass	
Endrin	%	94			70-130	Pass	
Endrin aldehyde	%	95			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-BHC (Lindane)	%	100			70-130	Pass	
Heptachlor	%	95			70-130	Pass	
Heptachlor epoxide	%	97			70-130	Pass	
Methoxychlor	%	94			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	123			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	103			70-130	Pass	
Dimethoate	%	108			70-130	Pass	
Disulfoton	%	103			70-130	Pass	
Methyl azinphos	%	74			70-130	Pass	
Methyl parathion	%	101			70-130	Pass	
Parathion	%	97			70-130	Pass	
Phorate	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	112			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Heavy Metals							
Aluminium	%	97			70-130	Pass	
Antimony	%	103			70-130	Pass	
Arsenic	%	96			70-130	Pass	
Arsenic	%	115			70-130	Pass	
Barium	%	97			70-130	Pass	
Beryllium	%	99			70-130	Pass	
Bismuth	%	120			70-130	Pass	
Boron	%	98			70-130	Pass	
Cadmium	%	97			70-130	Pass	
Cadmium	%	120			70-130	Pass	
Chromium	%	97			70-130	Pass	
Chromium	%	116			70-130	Pass	
Cobalt	%	96			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper	%	115			70-130	Pass	
Iron	%	92			70-130	Pass	
Lead	%	95			70-130	Pass	
Lead	%	114			70-130	Pass	
Manganese	%	96			70-130	Pass	
Mercury	%	88			70-130	Pass	
Mercury	%	112			70-130	Pass	
Molybdenum	%	100			70-130	Pass	
Nickel	%	96			70-130	Pass	
Nickel	%	117			70-130	Pass	
Selenium	%	92			70-130	Pass	
Silver	%	97			70-130	Pass	
Thallium	%	90			70-130	Pass	
Tin	%	120			70-130	Pass	
Titanium	%	100			70-130	Pass	
Uranium	%	123			70-130	Pass	
Vanadium	%	96			70-130	Pass	
Zinc	%	94			70-130	Pass	
Zinc	%	116			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	105			70-130	Pass	
Magnesium	%	105			70-130	Pass	
Potassium	%	116			70-130	Pass	
Sodium	%	101			70-130	Pass	
LCS - % Recovery							
Extended Metals Suite							
Phosphorus	%	116			70-130	Pass	
Silicon	%	111			70-130	Pass	
Sulphur	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	B15-Jl26046	NCP	%	112			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	S15-Jl25890	CP	%	102			70-130	Pass	
Arsenic	S15-Jl25890	CP	%	102			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Barium	S15-Jl25890	CP	%	108			70-130	Pass	
Beryllium	S15-Jl25890	CP	%	102			70-130	Pass	
Bismuth	S15-Jl25890	CP	%	116			70-130	Pass	
Boron	S15-Jl25890	CP	%	116			70-130	Pass	
Cadmium	S15-Jl25890	CP	%	106			70-130	Pass	
Chromium	S15-Jl25890	CP	%	103			70-130	Pass	
Cobalt	S15-Jl25890	CP	%	100			70-130	Pass	
Copper	S15-Jl25890	CP	%	101			70-130	Pass	
Lead	S15-Jl25890	CP	%	100			70-130	Pass	
Manganese	S15-Jl25890	CP	%	107			70-130	Pass	
Mercury	S15-Jl25890	CP	%	115			70-130	Pass	
Molybdenum	S15-Jl25890	CP	%	112			70-130	Pass	
Nickel	S15-Jl25890	CP	%	101			70-130	Pass	
Selenium	S15-Jl25890	CP	%	107			70-130	Pass	
Silver	S15-Jl25890	CP	%	109			70-130	Pass	
Thallium	S15-Jl25890	CP	%	104			70-130	Pass	
Uranium	S15-Jl25890	CP	%	107			70-130	Pass	
Vanadium	S15-Jl25890	CP	%	105			70-130	Pass	
Zinc	S15-Jl25890	CP	%	101			70-130	Pass	
Spike - % Recovery									
Extended Metals Suite				Result 1					
Phosphorus	S15-Jl25890	CP	%	111			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S15-Jl25894	CP	%	93			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S15-Jl25894	CP	%	93			70-130	Pass	
Toluene	S15-Jl25894	CP	%	97			70-130	Pass	
Ethylbenzene	S15-Jl25894	CP	%	93			70-130	Pass	
m&p-Xylenes	S15-Jl25894	CP	%	108			70-130	Pass	
o-Xylene	S15-Jl25894	CP	%	109			70-130	Pass	
Xylenes - Total	S15-Jl25894	CP	%	108			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S15-Jl25894	CP	%	82			70-130	Pass	
TRH C6-C10	S15-Jl25894	CP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S15-Jl25898	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S15-Jl25898	CP	%	89			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S15-Jl25905	CP	%	94			70-130	Pass	
Acenaphthylene	S15-Jl25905	CP	%	90			70-130	Pass	
Anthracene	S15-Jl25905	CP	%	92			70-130	Pass	
Benz(a)anthracene	S15-Jl25905	CP	%	104			70-130	Pass	
Benzo(a)pyrene	S15-Jl25905	CP	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	S15-Jl25905	CP	%	118			70-130	Pass	
Benzo(g.h.i)perylene	S15-Jl25905	CP	%	81			70-130	Pass	
Benzo(k)fluoranthene	S15-Jl25905	CP	%	90			70-130	Pass	
Chrysene	S15-Jl25905	CP	%	98			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	S15-Jl25905	CP	%	84			70-130	Pass	
Fluoranthene	S15-Jl25905	CP	%	93			70-130	Pass	
Fluorene	S15-Jl25905	CP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-Jl25905	CP	%	84			70-130	Pass	
Naphthalene	S15-Jl25905	CP	%	92			70-130	Pass	
Phenanthrene	S15-Jl25905	CP	%	88			70-130	Pass	
Pyrene	S15-Jl25905	CP	%	95			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S15-Jl27111	NCP	%	99			70-130	Pass	
4.4'-DDD	S15-Jl27111	NCP	%	109			70-130	Pass	
4.4'-DDE	S15-Jl27111	NCP	%	101			70-130	Pass	
4.4'-DDT	S15-Jl27111	NCP	%	100			70-130	Pass	
a-BHC	S15-Jl27111	NCP	%	98			70-130	Pass	
Aldrin	S15-Jl27111	NCP	%	100			70-130	Pass	
b-BHC	S15-Jl27111	NCP	%	96			70-130	Pass	
d-BHC	S15-Jl27111	NCP	%	108			70-130	Pass	
Dieldrin	S15-Jl27111	NCP	%	99			70-130	Pass	
Endosulfan I	S15-Jl27111	NCP	%	100			70-130	Pass	
Endosulfan II	S15-Jl27111	NCP	%	100			70-130	Pass	
Endosulfan sulphate	S15-Jl27111	NCP	%	104			70-130	Pass	
Endrin	S15-Jl27111	NCP	%	97			70-130	Pass	
Endrin aldehyde	S15-Jl27111	NCP	%	93			70-130	Pass	
Endrin ketone	S15-Jl27111	NCP	%	102			70-130	Pass	
g-BHC (Lindane)	S15-Jl27111	NCP	%	102			70-130	Pass	
Heptachlor	S15-Jl27111	NCP	%	98			70-130	Pass	
Heptachlor epoxide	S15-Jl27111	NCP	%	98			70-130	Pass	
Methoxychlor	S15-Jl27111	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S15-Jl27112	NCP	%	95			70-130	Pass	
Dimethoate	S15-Jl27112	NCP	%	101			70-130	Pass	
Disulfoton	S15-Jl27112	NCP	%	126			70-130	Pass	
Methyl azinphos	S15-Jl27112	NCP	%	92			70-130	Pass	
Methyl parathion	S15-Jl27112	NCP	%	94			70-130	Pass	
Parathion	S15-Jl27112	NCP	%	95			70-130	Pass	
Phorate	S15-Jl27112	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Antimony	S15-Jl25930	CP	%	116			70-130	Pass	
Arsenic	S15-Jl25930	CP	%	106			70-130	Pass	
Barium	S15-Jl25930	CP	%	124			70-130	Pass	
Beryllium	S15-Jl25930	CP	%	105			70-130	Pass	
Bismuth	S15-Jl25930	CP	%	116			70-130	Pass	
Boron	S15-Jl25930	CP	%	116			70-130	Pass	
Cadmium	S15-Jl25930	CP	%	111			70-130	Pass	
Chromium	S15-Jl25930	CP	%	113			70-130	Pass	
Cobalt	S15-Jl25930	CP	%	104			70-130	Pass	
Copper	S15-Jl25930	CP	%	107			70-130	Pass	
Lead	S15-Jl25930	CP	%	107			70-130	Pass	
Manganese	S15-Jl25930	CP	%	121			70-130	Pass	
Mercury	S15-Jl25930	CP	%	117			70-130	Pass	
Molybdenum	S15-Jl25930	CP	%	110			70-130	Pass	
Nickel	S15-Jl25930	CP	%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium	S15-Jl25930	CP	%	103			70-130	Pass	
Silver	S15-Jl25930	CP	%	109			70-130	Pass	
Thallium	S15-Jl25930	CP	%	109			70-130	Pass	
Uranium	S15-Jl25930	CP	%	115			70-130	Pass	
Vanadium	S15-Jl25930	CP	%	124			70-130	Pass	
Zinc	S15-Jl25930	CP	%	87			70-130	Pass	
Spike - % Recovery									
Extended Metals Suite				Result 1					
Phosphorus	S15-Jl25930	CP	%	112			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S15-Jl25931	CP	%	83			70-130	Pass	
TRH C10-C14	S15-Jl25931	CP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S15-Jl25931	CP	%	96			70-130	Pass	
Toluene	S15-Jl25931	CP	%	99			70-130	Pass	
Ethylbenzene	S15-Jl25931	CP	%	93			70-130	Pass	
m&p-Xylenes	S15-Jl25931	CP	%	103			70-130	Pass	
o-Xylene	S15-Jl25931	CP	%	105			70-130	Pass	
Xylenes - Total	S15-Jl25931	CP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S15-Jl25931	CP	%	88			70-130	Pass	
TRH C6-C10	S15-Jl25931	CP	%	75			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S15-Jl25931	CP	%	92			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S15-Jl25734	NCP	mg/kg	1500	1400	11	30%	Pass	
Iron	S15-Jl25734	NCP	mg/kg	1800	1500	16	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	S15-Jl25887	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Barium	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Beryllium	S15-Jl25887	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	S15-Jl25887	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Cobalt	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Manganese	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S15-Jl25887	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Molybdenum	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	S15-Jl25887	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Thallium	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Uranium	S15-Jl25887	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Vanadium	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	S15-Jl25887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Extended Metals Suite				Result 1	Result 2	RPD			
Phosphorus	S15-Jl25887	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-Jl25887	CP	%	22	21	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Jl25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-Jl25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-Jl25890	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-Jl25890	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-Jl25890	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-Jl25890	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-Jl25890	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-Jl25890	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-Jl25890	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-Jl25890	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S15-Jl25890	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-Jl25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-Jl25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	B15-Jl26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1221	B15-Jl26040	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	B15-Jl26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1242	B15-Jl26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1248	B15-Jl26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1254	B15-Jl26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1260	B15-Jl26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Total PCB*	S15-Jl24560	NCP	mg/kg	4.1	5.2	23	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S15-Jl25890	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S15-Jl25890	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S15-Jl25890	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a.h)anthracene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B15-Jl26040	NCP	mg/kg	**	< 0.1	<1	30%	Pass	
4.4'-DDD	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
4.4'-DDE	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
4.4'-DDT	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
a-BHC	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Aldrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
b-BHC	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
d-BHC	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Dieldrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan I	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan II	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin aldehyde	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin ketone	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Heptachlor	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Heptachlor epoxide	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Hexachlorobenzene	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Methoxychlor	B15-Jl26040	NCP	mg/kg	**	< 0.2	<1	30%	Pass	
Toxaphene	B15-Jl26040	NCP	mg/kg	**	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S15-Jl26280	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S15-Jl26280	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Antimony	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	S15-Jl25924	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Barium	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Beryllium	S15-Jl25924	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	S15-Jl25924	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Cobalt	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Manganese	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S15-Jl25924	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Molybdenum	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	S15-Jl25924	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Thallium	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Tin	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Uranium	S15-Jl25924	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Vanadium	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	S15-Jl25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Extended Metals Suite				Result 1	Result 2	RPD			
Phosphorus	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-Jl25924	CP	%	2.7	2.2	18	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S15-Jl25930	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-Jl25930	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-Jl25930	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-Jl25930	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-Jl25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-Jl25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-Jl25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-Jl25930	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-Jl25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-Jl25930	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S15-Jl25930	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-Jl25930	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-Jl25930	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S15-Jl25930	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S15-Jl25930	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S15-Jl25930	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Charl Du Preez	Analytical Services Manager
Bob Symons	Senior Analyst-Asbestos (NSW)
Bob Symons	Senior Analyst-Inorganic (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Priya Dass**

Report **466933-W**
Project name MSB UNSW
Project ID GEOTLCOV24080AS
Received Date Jul 30, 2015

Client Sample ID			**RB**	**TB**	**TS**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S15-Jl25933**	**S15-Jl25934**	**S15-Jl25935**
Date Sampled			**Jul 28, 2015**	**Jul 28, 2015**	**Jul 28, 2015**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	95%
Toluene	0.001	mg/L	< 0.001	< 0.001	95%
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	91%
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	97%
o-Xylene	0.001	mg/L	< 0.001	< 0.001	95%
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	96%
4-Bromofluorobenzene (surr.)	1	%	76	77	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH C6-C10	0.02	mg/L	-	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02	-
Volatile Organics					
Naphthalene[N02]	0.02	mg/L	-	< 0.02	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	< 0.02	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-

Client Sample ID			RB	TB	TS
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S15-Jl25933**	**S15-Jl25934**	**S15-Jl25935**
Date Sampled			**Jul 28, 2015**	**Jul 28, 2015**	**Jul 28, 2015**
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Fluorene	0.001	mg/L	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	-	-
Total PAH*	0.001	mg/L	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	111	-	-
p-Terphenyl-d14 (surr.)	1	%	85	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-
Heavy Metals					
Arsenic (filtered)	0.001	mg/L	< 0.001	-	-
Cadmium (filtered)	0.0001	mg/L	< 0.0001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	-	-
Copper (filtered)	0.001	mg/L	< 0.001	-	-
Lead (filtered)	0.001	mg/L	< 0.001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	-	-
Zinc (filtered)	0.005	mg/L	< 0.005	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 31, 2015	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Jul 30, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 30, 2015	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 31, 2015	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 31, 2015	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 30, 2015	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Jul 30, 2015	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Metals M8 filtered	Sydney	Jul 30, 2015	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

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NATA # 1261 Site # 20794

Company Name:	Coffey Geotechnics Pty Ltd Chatswood	**Order No.:**		**Received:**	Jul 30, 2015 11:32 AM
Address:	Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	466933	**Due:**	Aug 6, 2015
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
		Fax:	+61 2 9406 1002	**Contact Name:**	Priya Dass
Project Name:	MSB UNSW				
Project ID:	GEOTLCOV24080AS				

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-Jl25878		X									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25879		X									
BH7A_0.22-0.32	Jul 28, 2015		Soil	S15-Jl25880	X						X			X	X
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25881							X			X	X
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25882		X									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25883		X									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25884		X									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-Jl25885		X									

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Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

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Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-Jl25886		X									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-Jl25887				X						X	X
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-Jl25888		X									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-Jl25889		X									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-Jl25890	X		X				X			X	X
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25891		X									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25892		X									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25893		X									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-Jl25894				X						X	X
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-Jl25895		X									

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-Jl25896		X									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		X									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	X						X			X	X
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		X									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25900		X									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25901		X									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-Jl25902		X									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25903		X									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25904		X									
BH10_0.11-0.21	Jul 27, 2015		Soil	S15-Jl25905			X				X	X		X	X

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25906							X			X	X
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25907		X									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25908		X									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25909		X									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		X									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				X						X	X
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		X									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				X						X	X
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		X									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		X									

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH11_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25916		X									
BH12_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25917	X						X			X	X
BH12_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25918		X									
BH12_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25919		X									
BH12_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25920		X									
BH12_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25921		X									
BH12_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25922		X									
BH13_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25923				X						X	X
BH13_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25924				X						X	X
BH13_2.0-2.1	Jul 28, 2015		Soil	S15-Jl25925		X									

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Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25926		X									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25927		X									
DUP1	Jul 27, 2015		Soil	S15-Jl25928		X									
DUP2	Jul 27, 2015		Soil	S15-Jl25929		X									
DUP3	Jul 28, 2015		Soil	S15-Jl25930							X			X	X
DUP4	Jul 28, 2015		Soil	S15-Jl25931				X						X	X
DUP5	Jul 28, 2015		Soil	S15-Jl25932		X									
RB	Jul 28, 2015		Water	S15-Jl25933					X						X
TB	Jul 28, 2015		Water	S15-Jl25934									X		
TS	Jul 28, 2015		Water	S15-Jl25935						X					

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

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

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
Method Blank							
Volatile Organics							
Naphthalene	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	83			70-130	Pass	
TRH C10-C14	%	106			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	89			70-130	Pass	
Toluene	%	92			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	93			70-130	Pass	
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	92			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
Naphthalene	%	89			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	71			70-130	Pass	
Acenaphthylene	%	73			70-130	Pass	
Anthracene	%	75			70-130	Pass	
Benz(a)anthracene	%	70			70-130	Pass	
Benzo(a)pyrene	%	73			70-130	Pass	
Benzo(b&j)fluoranthene	%	70			70-130	Pass	
Benzo(g.h.i)perylene	%	75			70-130	Pass	
Benzo(k)fluoranthene	%	72			70-130	Pass	
Chrysene	%	71			70-130	Pass	
Dibenz(a.h)anthracene	%	70			70-130	Pass	
Fluoranthene	%	76			70-130	Pass	
Fluorene	%	71			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	72			70-130	Pass	
Naphthalene	%	91			70-130	Pass	
Phenanthrene	%	83			70-130	Pass	
Pyrene	%	79			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	123			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	99			70-130	Pass	
Cadmium (filtered)	%	102			70-130	Pass	
Chromium (filtered)	%	95			70-130	Pass	
Copper (filtered)	%	94			70-130	Pass	
Lead (filtered)	%	98			70-130	Pass	
Mercury (filtered)	%	87			70-130	Pass	
Nickel (filtered)	%	94			70-130	Pass	
Zinc (filtered)	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S15-Au01032	NCP	%	95			70-130	Pass	
Acenaphthylene	S15-Au01032	NCP	%	71			70-130	Pass	
Anthracene	S15-Au01032	NCP	%	101			70-130	Pass	
Benz(a)anthracene	S15-Au01032	NCP	%	65			70-130	Fail	Q08
Benzo(a)pyrene	S15-Au01032	NCP	%	74			70-130	Pass	
Benzo(b&j)fluoranthene	S15-Au01032	NCP	%	73			70-130	Pass	
Benzo(g.h.i)perylene	S15-Au01032	NCP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S15-Au01032	NCP	%	100			70-130	Pass	
Chrysene	S15-Au01032	NCP	%	101			70-130	Pass	
Dibenz(a.h)anthracene	S15-Au01032	NCP	%	70			70-130	Pass	
Fluoranthene	S15-Au01032	NCP	%	86			70-130	Pass	
Fluorene	S15-Au01032	NCP	%	86			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-Au01032	NCP	%	75			70-130	Pass	
Naphthalene	S15-Au01032	NCP	%	101			70-130	Pass	
Phenanthrene	S15-Au01032	NCP	%	98			70-130	Pass	
Pyrene	S15-Au01032	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S15-Jl26397	NCP	%	106			70-130	Pass	
Cadmium (filtered)	S15-Au01032	NCP	%	99			70-130	Pass	
Chromium (filtered)	S15-Au01032	NCP	%	97			70-130	Pass	
Copper (filtered)	S15-Au01032	NCP	%	89			70-130	Pass	
Lead (filtered)	S15-Au01032	NCP	%	84			70-130	Pass	
Mercury (filtered)	S15-Au01032	NCP	%	88			70-130	Pass	
Nickel (filtered)	S15-Au01032	NCP	%	92			70-130	Pass	
Zinc (filtered)	S15-Au01032	NCP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S15-Au01548	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S15-Jl26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S15-Jl26396	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium (filtered)	S15-Jl26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S15-Jl26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S15-Jl26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury (filtered)	S15-Jl26396	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S15-Jl26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S15-Jl26396	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Charl Du Preez	Analytical Services Manager
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention:	Priya Dass
Report	466933-AID
Project Name	MSB UNSW
Project ID	GEOTLCOV24080AS
Received Date	Jul 30, 2015
Date Reported	Aug 06, 2015

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name MSB UNSW
Project ID GEOTLCOV24080AS
Date Sampled Jul 27, 2015 to Jul 28, 2015
Report 466933-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
BH7A_0.22-0.32	15-Jl25880	Jul 28, 2015	Approximate Sample 74g Sample consisted of: Grey coarse-grained soil	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH8_0.4-0.5	15-Jl25890	Jul 27, 2015	Approximate Sample 107g Sample consisted of: Grey coarse-grained soil	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH9_0.1-0.2	15-Jl25898	Jul 27, 2015	Approximate Sample 94g Sample consisted of: Light grey coarse-grained soil	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH12_0.1-0.2	15-Jl25917	Jul 27, 2015	Approximate Sample 97g Sample consisted of: Brown coarse-grained soil	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jul 31, 2015	Indefinite

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 466933
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-Jl25878		X									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25879		X									
BH7A_0.22-0.32	Jul 28, 2015		Soil	S15-Jl25880	X						X			X	X
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25881							X			X	X
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25882		X									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25883		X									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25884		X									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-Jl25885		X									

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: MSB UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 466933
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jul 30, 2015 11:32 AM
Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-Jl25886		X									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-Jl25887				X						X	X
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-Jl25888		X									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-Jl25889		X									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-Jl25890	X		X				X			X	X
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25891		X									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25892		X									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25893		X									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-Jl25894				X						X	X
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-Jl25895		X									

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Received: Jul 30, 2015 11:32 AM
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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-Jl25896		X									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		X									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	X						X			X	X
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		X									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25900		X									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25901		X									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-Jl25902		X									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25903		X									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25904		X									
BH10_0.11-0.21	Jul 27, 2015		Soil	S15-Jl25905			X				X	X		X	X

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25906							X			X	X
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25907		X									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25908		X									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25909		X									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		X									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				X						X	X
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		X									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				X						X	X
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		X									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		X									

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Contact Name: Priya Dass

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Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH11_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25916		X									
BH12_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25917	X						X			X	X
BH12_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25918		X									
BH12_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25919		X									
BH12_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25920		X									
BH12_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25921		X									
BH12_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25922		X									
BH13_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25923				X						X	X
BH13_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25924				X						X	X
BH13_2.0-2.1	Jul 28, 2015		Soil	S15-Jl25925		X									

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Due: Aug 6, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	BTEX	Extended Metals Suite	Eurofins | mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins | mgt Suite B4
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271															
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794															
External Laboratory															
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25926		X									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25927		X									
DUP1	Jul 27, 2015		Soil	S15-Jl25928		X									
DUP2	Jul 27, 2015		Soil	S15-Jl25929		X									
DUP3	Jul 28, 2015		Soil	S15-Jl25930							X			X	X
DUP4	Jul 28, 2015		Soil	S15-Jl25931				X						X	X
DUP5	Jul 28, 2015		Soil	S15-Jl25932		X									
RB	Jul 28, 2015		Water	S15-Jl25933					X						X
TB	Jul 28, 2015		Water	S15-Jl25934									X		
TS	Jul 28, 2015		Water	S15-Jl25935						X					

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

UNITS

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Stardards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by:

Bob Symons Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

468090

Sample Receipt 1 Syd

From: Priya Dass <Priya.Dass@coffey.com>
Sent: Friday, 7 August 2015 5:56 PM
To: EnviroSampleNSW; EnviroSampleNSW
Cc: Charl DuPreez
Subject: Additinal Analysis

Hi could we have the following samples from the following batches analysed for TCLP as follows:

1. **Nickel TCLP Analysis:**

Batch 465878

Sample:
BH3_0.1-0.2

Batch 466918

Samples:
BH01 0.1-0.2
BH02 0.1-0.2
BH05 0.1-0.2
BH06 0.1-0.2

2. **Lead TCLP Analysis:**

Batch 466933

Sample:
BH11_0.2-0.3

3. **Lead and Benzo(a)pyrene TCLP Analysis:**

Batch 466918

Sample:
BH05 0.5-0.6

Any questions then do let me know.

Regards,
Priya.

Priya Dass
Environmental Scientist

Level 19, Tower B, Citadel Towers
799 Pacific Highway
Chatswood NSW 2067

t: +61 2 9406 1000
m: +61 406 384 883

coffey

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NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**Coffey Geotechnics Pty Ltd Chatswood**
Contact name:	Priya Dass
Project name:	ADDITIONAL: UNSW
Project ID:	GEOTLCOV24080AS
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Aug 7, 2015 5:56 PM
Eurofins | mgt reference:	**468090**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Charl Du Preez on Phone : or by e.mail: charldupreez@eurofins.com.au

Results will be delivered electronically via e.mail to Priya Dass - priya_dass@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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NATA # 1261 Site # 20794

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ADDITIONAL: UNSW
Project ID: GEOTLCOV24080AS

Order No.:
Report #: 468090
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Aug 7, 2015 5:56 PM
Due: Aug 17, 2015
Priority: 5 Day
Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Lead	Nickel	USA Leaching Procedure	Benzo[a]pyrene
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X		
Sydney Laboratory - NATA Site # 18217							X	X
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
BH3_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06371		X	X	
BH1_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06372		X	X	
BH02_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06373		X	X	
BH05_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06374		X	X	
BH06_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06375		X	X	
BH11_0.2-0.3	Jul 13, 2015		TCLP	S15-Au06376	X		X	
BH05_0.5-0.6	Jul 13, 2015		TCLP	S15-Au06377	X		X	X

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Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Priya Dass**

Report **468090-L**
Project name ADDITIONAL: UNSW
Project ID GEOTLCOV24080AS
Received Date Aug 07, 2015

Client Sample ID			**BH3_0.1-0.2**	**BH1_0.1-0.2**	**BH02_0.1-0.2**	**BH05_0.1-0.2**
Sample Matrix			**TCLP**	**TCLP**	**TCLP**	**TCLP**
Eurofins | mgt Sample No.			**S15-Au06371**	**S15-Au06372**	**S15-Au06373**	**S15-Au06374**
Date Sampled			**Jul 13, 2015**	**Jul 13, 2015**	**Jul 13, 2015**	**Jul 13, 2015**
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	0.01	mg/L	0.28	0.32	0.21	0.10
USA Leaching Procedure						
Leachate Fluid[C01]		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	9.2	9.8	9.7	9.2
pH (off)	0.1	pH Units	4.5	4.4	4.5	4.4
pH (USA HCl addition)	0.1	pH Units	2.2	2.2	2.3	2.2

Client Sample ID			**BH06_0.1-0.2**	**BH11_0.2-0.3**	**BH05_0.5-0.6**
Sample Matrix			**TCLP**	**TCLP**	**TCLP**
Eurofins | mgt Sample No.			**S15-Au06375**	**S15-Au06376**	**S15-Au06377**
Date Sampled			**Jul 13, 2015**	**Jul 13, 2015**	**Jul 13, 2015**
Test/Reference	LOR	Unit			
Benzo[a]pyrene					
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
p-Terphenyl-d14 (surr.)	1	%	-	-	73
2-Fluorobiphenyl (surr.)	1	%	-	-	65
Heavy Metals					
Lead	0.01	mg/L	-	0.20	0.51
Nickel	0.01	mg/L	0.07	-	-
USA Leaching Procedure					
Leachate Fluid[C01]		comment	1.0	1.0	1.0
pH (initial)	0.1	pH Units	8.8	9.5	7.9
pH (off)	0.1	pH Units	4.4	4.6	4.2
pH (USA HCl addition)	0.1	pH Units	2.2	2.1	2.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Benzo[a]pyrene	Sydney	Aug 13, 2015	7 Day
- Method: E007 Benzo[a]pyrene			
Heavy Metals	Melbourne	Aug 12, 2015	180 Day
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
USA Leaching Procedure	Sydney	Aug 12, 2015	14 Day
- Method: E019 TCLP Preparation			

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Company Name:	Coffey Geotechnics Pty Ltd Chatswood	**Order No.:**		**Received:**	Aug 7, 2015 5:56 PM
Address:	Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067	**Report #:**	468090	**Due:**	Aug 17, 2015
		Phone:	+61 2 9406 1000	**Priority:**	5 Day
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Project Name:	ADDITIONAL: UNSW				
Project ID:	GEOTLCOV24080AS				

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail					Lead	Nickel	USA Leaching Procedure	Benzo[a]pyrene
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X		
Sydney Laboratory - NATA Site # 18217							X	X
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
BH3_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06371		X	X	
BH1_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06372		X	X	
BH02_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06373		X	X	
BH05_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06374		X	X	
BH06_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06375		X	X	
BH11_0.2-0.3	Jul 13, 2015		TCLP	S15-Au06376	X		X	
BH05_0.5-0.6	Jul 13, 2015		TCLP	S15-Au06377	X		X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

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

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Benzo[a]pyrene									
Benzo(a)pyrene			mg/L	< 0.001			0.001	Pass	
Method Blank									
Heavy Metals									
Lead			mg/L	< 0.01			0.01	Pass	
Nickel			mg/L	< 0.01			0.01	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S15-Au06371	CP	%	94			75-125	Pass	
Nickel	S15-Au06371	CP	%	100			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S15-Au06371	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Nickel	S15-Au06371	CP	mg/L	0.28	0.28	<1	30%	Pass	
Duplicate									
Benzo[a]pyrene				Result 1	Result 2	RPD			
Benzo(a)pyrene	S15-Au06655	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

Authorised By

Charl Du Preez	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ryan Hamilton	Senior Analyst-Organic (NSW)

Glenn Jackson
National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request