

Engineering Log - Monitoring Well

Sheet 1 of 1

Borehole No.

Office Job No.: **GEOTLCOV24080AS**

BH02

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

Boreh	nole	Loc	ation:	UNS	W Ker	sing	ton C					CI	hecked	l by:	ML
drill mo	odel 8	k mo	unting:	TRACK N	MOUNTE	D		Easti	ing: 3	336178 slope:		-90°		R.L	. Surface:
hole di										6245666 bearin	ıg:			datı	um:
drilli		nfor	matio	n				mat	erial	substance					
9	ည penetration မ	support	S	notes amples, ests, etc	well details	RL n	depth netres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mino	charac or comp	cteristics, ponents.	moisture condition	consistency/ density index	structure and additional observations
							1 2 3 5 6 7 8 9								
							10			Borehole terminated at 9m	i ala	assification sym			
metho DT PT SS HS VT AH CP HA NDD RC	c s t \ a c t r	ollow Bit, har ir har able pand a	ube tem fligl stem fli F Bit nmer percuss auger estructiv	nt auger ght auger ive	→ on → wa	ation 4 no res rangir refusa 1/98 was date sho	al ter level own	U D N N N N F E F V F	J ₅₀) * c s s	amples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer air lift test	so ba: sys	il description sed on unified cla stem Disture dry moist wet p plastic 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



sheet: 1 of 6

BH03

Borehole ID.

client: Brookfield Multiplex project no. GEOTLCOV24080AS

13 Jul 2015

principal: date completed: 16 Jul 2015

project: UNSW Material Science Building logged by: BF location: Kensington, NSW checked by: AC

I	ocatio	on:	Kei	nsingto	n, N	SW					chec	ked by:	AC
р	ositio	n: E:3	3618	5; N: 6245	739 (N	IGA94	Zone 5	6)	surface elevation: 28.74 m (AHD)	angle	from h	orizontal: 9	00°
-				Track mo	unted		1			hole o	liamete	r : 100 mm	
H	drillin	g infor	mati	on			mate		estance		_		
9 504	support	1 2 penetration 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	consistency / relative density	hand penetro- meter (kPa)	structure and additional observations
				E		_			ROAD SURFACE: ASPHALT: 0.05 m.	M		1 1 1 1 1 1	ROAD SURFACE
Ш		liil				_			FILL: Gravelly SAND: medium to coarse grained, ¬ grey, fine to coarse grained, sub-angular to angular /	4			FILL - PID=0.3ppm -
Ш				E		-			\gravel. / FILL: SAND: medium to coarse grained, grey,				PID=0.3ppm
					-28	-			trace of fine to medium grained, sub-angular gravel.				-
Ш				SFT 1 1 1		1.0 —							PID=0.3ppm
	,			1, 1, 1 N*=2		_							- -
AP	į į				-27	-							- -
Ш					-21	-		SP	SAND : medium to coarse grained, orange-brown/grey.		MD		MARINE DEPOSITS
Ш						2.0 —							-
						-							=
				SFT 3. 3. 3	-26	-						1 ! ! ! ! !	PID=0.8ppm -
45	,			3, 3, 3 N*=6	20	3.0 —							- -
15 15:	Γ 🖁					3.0 -							
3/08/20						-							- - -
6 6 0 0			irved		-25	-							
wingFilk			Not Observed			4.0 —			<u></u>] [[[[[[[[- -
COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ < <drawngfile>> 06/08/2015 15:42 - W</drawngfile>			Not	SPT 4, 7, 9		4.0		SP	SAND: fine to medium grained, grey/brown.				
3PJ <				N*=16		-							- -
80AS.		lii			-24	-							
OV240					24	5.0							- -
OTLC						5.0							
W GE		ii				-							
CORE	•		05/08/15	SPT 11, 16, 18	-23	-							
NON			02/08	N*=34		60-							<u>-</u>
HOLE						6.0							
BORE						-							-
g COF					-22	-							
LB Lo						7.0]iiii	
CDF_0_9_04BB.GLB_Log				SPT \35/100mm/ N*=R	-						VD		- -
0 6 0				IN -IX		-							_
GP.					-21	-							- -
Ц													-
1	AS HA	d auger d auger so hand au washbo	rewir ger		pene	nud asing etration		g to	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) M		escription on Unific	n ed	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable
- 1		bit show	n by s	suffix	wate	10-0	Oct-12 wa		N* SPT - sample recovered W Wp	wet plastic li			VL very loose L loose
	в	AD/T blank bi				- leve	er inflow		VS vane shear; peak/remouded (kPa) Wi	liquid lin	nit		MD medium dense D dense
		TC bit V bit			-	⊸ wat	er outflow	'	HB hammer bouncing				VD very dense



client: Brookfield Multiplex project no. GEOTLCOV24080AS

Borehole ID.

sheet:

BH03 2 of 6

principal: date completed: 16 Jul 2015

project: UNSW Material Science Building logged by: BF

Kensington, NSW location: AC checked by: 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 consistency / relative density hand material description structure and classification ģ samples & penetro meter additional observations method & support penetrat $\widehat{\Xi}$ moisture condition field tests SOIL TYPE: plasticity or particle characteristic, graphic $\widehat{\mathbf{E}}$ depth (water colour, secondary and minor components (kPa) R 9 8 8 9 SP SAND: fine to medium grained, grey/brown. М VD MARINE DEPOSITS $I \cup I \cup I$ SPT 40/120mm N*=R / 1111-20 9.0 19 10.0 SPT 40, \40/100mm N*=R 111118 11.0 MD SPT Not Observed 6, 6, 8 N=14 17 12.0 VD 13 0 SPT 35, \35/100mm N=R 15 14.0 35, 30/70mm N=R 15.0 13 classification symbol & nod auger drilling* support samples & field tests consistency / relative density soil description bulk disturbed sample very soft auger screwing based on Unified C casing D disturbed sample S soft НА hand auger Classification System environmental sample F St penetration washbore SS split spoon sample stiff no resistance ranging to
 refusal undisturbed sample ##mm diameter VSt very stiff hand penetrometer (kPa) standard penetration test (SPT) dry moist wet H Fb HP hard friable SPT - sample recovered SPT with solid cone very loose loose bit shown by suffix N* VL plastic limit Nc e.g. B level on date shown AD/T liquid limit vane shear; peak/remouded (kPa) MD blank bit VS medium dense water inflow TC bit dense water outflow hammer bouncing very dense



rehole sheet: 3 of 6 project no. GEOTLCOV24080AS

Borehole ID.

BH03

client: Brookfield Multiplex date started: 13 Jul 2015

principal: date completed: 16 Jul 2015

project: UNSW Material Science Building logged by: BF

loc	ation:	Ke	nsingto	n, N	ISW						checl	ked by:	AC
pos	sition: E:	33618	35; N: 6245	739 (N	/IGA94	Zone 5	6)	surface elevation: 28.74 m (AHD)		angle	from ho	orizontal: 9	0°
\vdash			, Track mo	unted						hole o	liamete	r : 100 mm	
dri	illing inf	ormati	on			mate		estance			>		
method &	support 2 penetration	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 penetro- meter (kPa)	structure and additional observations
CDF_0_9_048B.GLB Log COF BOREHOLE: NON CORED_GEOTLCOV24080AS.GPJ < <drawngfile>> 06/08/2015 15:42 </drawngfile>		Not Observed	SPT 20, 30/70mm N*=R SPT 120mm N*=R SPT 140/100mm N=R SPT 135/130mm, N=R	-7 -7 -6	17.0 —		SP	SAND: fine to medium grained, grey/brown. (continued)		M	VD.		MARINE DEPOSITS
me AD AS HA W	auger A hand washt	own by	ng*	sup M C o	10-0 leve		ater shown	samples & field tests B			escriptio on Unification Sys	n ed	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



GEOTLCOV24080AS project no.

Borehole ID.

sheet:

BH03 4 of 6

BF

Brookfield Multiplex client: date started: 13 Jul 2015

date completed: 16 Jul 2015 principal:

project: **UNSW Material Science Building** logged by: Kensington, NSW checked by: AC location:

_				singto								checl	kea i	oy:	AC
Ι΄ .				5; N: 6245	,	IGA94	Zone 5	6)	surface elevation: 28.74 m (AHD)		_	from ho			
			_	Track mo	unted		moto	rial au	antanan		hole d	liamete	r : 10	0 mr	<u>n</u>
urii	lling i		nauc)II			mate		ostance			≥	ha		atmostoms and
method & support	1 2 penetration	2 perieualion	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	pen me (kf	and etro- eter Pa) & &	structure and additional observations
			Not Observed	SPT \(\d\)40/120mm/ \(\n=R\) SPT 11, 15, 24 \(\n^*=39\)	-4 -3 -2 -1 -0 1 2	25.0 —		SP SP	SAND: fine to medium grained, grey/brown, wit some clay lenses. SAND: fine to medium grained, grey/brown, wit some clay lenses.		M	VD D			MARINE DEPOSITS
met AD AS HA W * e.g. B T	aug han was bit s	nk bit bit	rewin ger e	g*	M in C of pen	10-0 leve		iter shown	samples & field tests B	moist D c M n W v	soil de based lassifica		n ed		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



client:

Engineering Log - Borehole

Brookfield Multiplex

BH03 5 of 6 sheet:

Borehole ID.

GEOTLCOV24080AS project no.

date started: 13 Jul 2015

principal: date completed: 16 Jul 2015 project: **UNSW Material Science Building** logged by: BF

Kensington, NSW checked by: AC location:

100	cati	on:	ne	nsingto	II, N	1311					cnec	ked by:	AC
- 1				85; N: 6245		/IGA94	Zone 5	6)	surface elevation: 28.74 m (AHD)	_		orizontal: 9	0°
_				, Track mo	unted					hole	diamete	r : 100 mm	
dı	rillir	ng infor	mati	on			mate		ostance				
method &	support	1 2 penetration 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	consistency / relative density	hand penetro- meter (kPa)	structure and additional observations
					_	-		SP	SAND: fine to medium grained, orange-brown/grey, with some medium plasticity clay. (continued)	М	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 —							- - - - - - - - - - - - - - - - - - -
08/2015 15:42					6 -	35.0 —							- - - - - - - -
PJ < <drawingfile>> 06/08/2015 15:42 </drawingfile>			Not Observed	SPT 11, 14, 22 N*=36	7 -	36.0 —					MD to	=	- - - - - - - - - - - - - - - - - - -
REHOLE: NON CORED GEOTLCOV24080AS.GPJ					8 -	37.0 —							
BOREHOLE: NON COR					9 -	38.0 —					MD	-	
CDF_0_9_04BB.GLB Log COFBO				SPT 6, 6, 8 N*=14	10 	39.0 —							
CDF_0					11	_							
MAI A& H/ W * e.: B T V	S A '	auger d auger s hand au washbo bit show AD/T blank bi TC bit V bit	ger re	ng*	M in C of pen	10-	ı	ater shown	HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered NC SPT with solid cone	soil base		o n ed	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



client:

principal:

project:

Engineering Log - Borehole

UNSW Material Science Building

Brookfield Multiplex

6 of 6 sheet:

Borehole ID.

GEOTLCOV24080AS project no.

BH03

16 Jul 2015

13 Jul 2015 date started:

BF logged by:

date completed:

Kensington, NSW location: AC checked by:

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 consistency / relative density hand material description structure and classification go samples & penetro meter additional observations method & support penetrat $\widehat{\Xi}$ moisture condition field tests SOIL TYPE: plasticity or particle characteristic, graphic $\widehat{\mathbf{E}}$ depth (water colour, secondary and minor components (kPa) R 9 0 0 0 SC Clayey SAND: fine to medium grained, red-brown. М MD MARINE DEPOSITS $I \cup I \cup I$ 1111-12 41.0 VD 22, (35/120mm) -13 N*=R 42.0 Not Observed -14 43.0 -15 44.0 I + I + I15 O Borehole BH03 terminated at 45.0 m -17 46.0 -18 47.0 -19 method AD auger drilling* classification symbol & support samples & field tests consistency / relative density soil description bulk disturbed sample very soft auger screwing based on Unified C casing D disturbed sample S soft НА hand auger Classification System environmental sample F St penetration washbore SS split spoon sample stiff no resistance ranging to
 refusal undisturbed sample ##mm diameter VSt very stiff hand penetrometer (kPa) standard penetration test (SPT) dry moist wet H Fb HP hard friable SPT - sample recovered SPT with solid cone very loose loose bit shown by suffix N* VL plastic limit Nc e.g. B level on date shown AD/T liquid limit vane shear; peak/remouded (kPa) MD blank bit VS medium dense water inflow TC bit dense water outflow hammer bouncing very dense



Engineering Log - Monitoring Well

BH03

Borehole No.

Sheet 1 of 1

GEOTLCOV24080AS Office Job No.:

Brookfield Mulitplex Client: 21.7.2015 Date started:

Principal: Date completed: **21.7.2015**

Project: **UNSW Material Science Building** AC Logged by:

Boreho	le l	_oc	atior	n: UNS	W Ker	sing	ton C	am	ous			Chec	cked	l by:	ML	
drill mode	el &	mo	untin	g: TRACK	MOUNTE	D		Eastir	ng: 3	336185 slope:	-90°			R.L	. Surface:	
hole dian							_			245739 bearin	g:			datı	ım:	
drilling	_	for	mati	ion			-			substance						
method L penetration		support		notes samples, tests, etc	well details	d RL m	depth netres	grapnic log	classification symbol	material soil type: plasticity or particle colour, secondary and mino	characteristics	6, io	condition	consistency/ density index		tructure and onal observations
							1 2 - 3 - 4 5 6 7 - 8 9			Borehole terminated at 9m						
							10									
method DT PT SS HS VT AH CP HA NDD RC	di pr so he V ai ca ha	ollow Bit, 7 r han able p and a	ube tem fl stem Γ Bit nmer percur auger estruc		→ on → wa	ation 4 no resi ranging refusal	N nil istance g to l er level	U, D N N P B R E P W	* c s ID /S	amples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer air lift test	classificatic soil descrip based on ur system moisture D dry M moist W wet Wp plasti W_ liquid	otion nified classif			consistence VS S F St VSt H Fb VL L MD D VD	cy/density index very soft soft firm stiff very stiff hard friable very loose loose medium dense dense very dense



client: Brookfield Multiplex project no. GEOTLCOV24080AS

Borehole ID.

sheet:

BH041 of 4

principal: date completed: 20 Jul 2015

project: UNSW Material Science Building logged by: BF

location: Kensington, NSW AC checked by: 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 consistency / relative density hand material description structure and classification g penetro meter samples & additional observations $\widehat{\Xi}$ method & support penetra moisture condition field tests SOIL TYPE: plasticity or particle characteristic, graphic $\widehat{\mathbf{E}}$ depth (water colour, secondary and minor components (kPa) R 9 0 0 0 ROAD SURFACE: CONCRETE: 0.15 m. ROAD SURFACE М FILL PID=0.2ppm FILL: Gravelly SAND: fine to coarse grained, orange-brown/grey, fine to coarse grained, sub-angular to angular gravel. FILL: SAND: fine to coarse grained, orange-brown/grey, trace of fine grained, I + I + I-27 sub-rounded gravel. 1.0 PID=0.1ppm sБт AD/T MARINE DEPOSITS MD SAND: fine to medium grained, orange-brown. F PID=0.3ppm 26 2.0 I + I + I3, 4, 4 N*=8 25 3.0 Not Observed 4.0 VD SPT 10, 19, 32 N*=51 -23 5.0 20, \30/110mm N*=R -22 6.0 21 7.0 SPT 30/90mm classification symbol & auger drilling* samples & field tests consistency / relative density soil description bulk disturbed sample very soft auger screwing based on Unified C casing D disturbed sample S soft hand auger НА Classification System environmental sample F St penetration washbore SS split spoon sample stiff no resistance ranging to
 refusal undisturbed sample ##mm diameter VSt very stiff dry moist wet H Fb HP hand penetrometer (kPa) hard standard penetration test (SPT) friable SPT - sample recovered SPT with solid cone very loose loose bit shown by suffix N* VL plastic limit Nc e.g. B level on date shown AD/T liquid limit MD blank bit VS vane shear; peak/remouded (kPa) medium dense vater inflow TC bit dense water outflow hammer bouncing very dense



project:

Engineering Log - Borehole

UNSW Material Science Building

project no. GEOTLCOV24080AS

Borehole ID.

logged by:

sheet:

BH04 2 of 4

BF

client: Brookfield Multiplex date started: 17 Jul 2015

principal: date completed: 20 Jul 2015

location: Kensington, NSW checked by: AC

position: E: 336149; N: 62457 drill model: Drillcat, Track model: Dr	inted	56) surface elevation: 27.95 n		gle from horizontal: 9 le diameter : 100 mm	9U°
drilling information					1
samples & field tests		terial substance	<u> </u>	ie diameter : 100 mm	·
suppo suppo 2 pene 3 water	RL (m) depth (m) graphic log	material d	particle characteristic,	condition consistency / relative density (kba) 200 200 200 200 200 200 200 200 200 20	structure and additional observations
SPT 24, 30/100mm/N*=R	-19 9.018 10.017 11.016 12.015 13.0 -	SP SAND: fine to medium gra		VD	MARINE DEPOSITS
method AD auger drilling* AS auger screwing* HA hand auger W washbore	-14 14.0	ing to HP hand penetrom	sample base class uple ple mple ##mm diameter moisture		consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable



project:

Engineering Log - Borehole

UNSW Material Science Building

LOG - Borenole project no. GEOTLCOV24080AS

Borehole ID.

logged by:

sheet:

BH04 3 of 4

BF

client: Brookfield Multiplex date started: 17 Jul 2015

principal: date completed: 20 Jul 2015

location: Kensington, NSW checked by: AC

-				nsingto								check	red by:	AC
	positio	on: E:3	3614	9; N: 6245	742 (N	/IGA94	Zone 5	6)	surface elevation: 27.95 m (AHD)		angle	from ho	orizontal: 9	0°
Ļ				Track mo	unted						hole d	liamete	r : 100 mm	
ŀ	drilli	ing infor	mati	on			mate	rial sub						
	method & support	2 penetration	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	'9	moisture condition	consistency / relative density	hand penetro- meter (kPa)	structure and additional observations
CDF_0_9_04BB.GLB Log COF BOREHOLE: NON CORED GEOTLCOV24080AS.GPJ < <drawingfile>> 06/08/2015 15:42</drawingfile>	meth weth the second se		Not Observed	SPT 30, 30/90mm N*=R SPT 15, 30/50mm N*=R SPT 30, 30/70mm N*=R	-111 -10 -9 -7 -6 -5	17.0 — 17.0 — 18.0 — 19.0 — 20.0 — 21.0 — 22.0 — 23.0 — 23.0 —		SP	SAND: fine to medium grained, orange-brown. (continued) samples & field tests		M	VD		Consistency / relative density
	AD AS HA W * e.g. B T	auger d auger s hand au washbo bit show AD/T blank bi TC bit V bit	crewir ger re	ng*	M in C of pen	er 10-0 leve		iter shown	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	mois D M W Wp	based Classifica		d	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



sheet: 4 of 4 GEOTLCOV24080AS project no.

Borehole ID.

BH04

Brookfield Multiplex client: date started: 17 Jul 2015

date completed: 20 Jul 2015 principal:

project: **UNSW Material Science Building** logged by: BF Kensington. NSW AC location: checked by:

position: E: 33614 drill model: Drillcat, subbort principle in the princi	at, Track mo tion samples & field tests		mate	classification Classification (%)	surface elevation: 27.95 m (AHD) Stance material description SOIL TYPE: plasticity or particle characteristic colour, secondary and minor components SAND: fine to medium grained, orange-brown (continued)	moisture condition		hand penetro-meter (KPa)	
method & support method & support method & support method	samples & field tests	(w) the second s		classification symbol	material description SOIL TYPE: plasticity or particle characteristic colour, secondary and minor components SAND: fine to medium grained, orange-brown	moisture condition	consistency / relative density	hand penetrometer (kPa) 00 00 00 00 00 00 00 00 00 00 00 00 00	structure and additional observations
method & support suppo	samples & field tests	-3 25.0		classification symbol	material description SOIL TYPE: plasticity or particle characteristic colour, secondary and minor components SAND: fine to medium grained, orange-brown			penetro- meter (kPa) 02 08 08 09 	additional observations
	field tests	-3 25.0	graphic log		SOIL TYPE: plasticity or particle characteristic colour, secondary and minor components SAND: fine to medium grained, orange-brown			penetro- meter (kPa) 02 08 08 09 	additional observations
						. М			MARINE DEPOSITS
	SPT \50/130mm \N*=R	-1 27.0 -0 28.0 -		- I	SAND: fine to medium grained, orange-brown with some medium plasticity clay.				
method AD auger drilling AS auger screwir HA hand auger W washbore * bit shown by seg. AD/T	ving*	support M mud C casing penetrati	- - - - - - - - - - - - - - - - - - -	al ater	Borehole BH04 terminated at 30.0 m Target depth 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		escriptio on Unification Sys	n d	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose



sheet: 1 of 1
project no. **GEOTLCOV24080AS**

BH05

Borehole ID.

client: Brookfield Multiplex date started: 22 Jul 2015

principal: date completed: 22 Jul 2015

project: UNSW Material Science Building logged by: BF

loca	ation:	Ke	nsingto	n, N	SW					checl	ked by:	AC
posit	tion: E:	33618	32; N: 6245	694 (N	1GA94	Zone 5	6)	surface elevation: 28.51 m (AHD)	angle	from h	orizontal: 9	90°
drill r	model: [Drillcat	, Track mo	unted					hole d	iamete	r : 100 mm	
dril	ling inf	ormat	on			mate		ostance				
method & support	t 2 penetration	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 penetro- meter (kPa)	structure and additional observations
			E			\bowtie		ROAD SURFACE: ASPHALT: 0.03 m.	_ / TM			ROAD SURFACE
		Observed	E B	-28	-			FILL: Gravelly SAND: fine to medium grained, brown/grey, fine to coarse grained, sub-angular gravel. SAND: fine to medium grained, dark brown.		- - -		FILL PID=0.5ppm PID=0.6ppm
		Not	E		1.0-							MARINE DEPOSITS PID=0.8ppm
				-27	-			Borehole BH05 terminated at 1.5 m Target depth				
				-	2.0							-
				-26	- -							-
708/2015 15:4:				-	3.0							
wingFile>> ub	111			-25	-							-
GPJ < <ur< td=""><td></td><td></td><td></td><td>-24</td><td>4.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></ur<>				-24	4.0							
FHOLE: NON CORED GEOTICOOY2488AS GFJ. <				-	5.0							-
ORED GEOI	111			-23	- - -							-
ON CONTRACTOR OF				-	6.0							-
g COF BORE				-22	- -							-
CDF_U_B_C48B.GEB LOG COT BOXE	111			_	7.0 -							-
8-0-100 -				-21	- -							-
met AD AS HA W	auger auger hand washb	drilling screwi auger bore	ng*	M in C of pen	etration		l iter	samples & field tests B	moisture D dry M moist W wet Wp plastic lir	escription on Unification Systems	n ed	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose
B T V	blank TC bit V bit				wate	er inflow er outflow		VS vane shear; peak/remouded (kPa) R refusal HB hammer bouncing	WI liquid lim	iit		MD medium dense D dense VD very dense



client: Brookfield Multiplex project no. GEOTLCOV24080AS

Borehole ID.

sheet:

BH061 of 1

principal: date completed: 21 Jul 2015

project: UNSW Material Science Building logged by: BF location: Kensington, NSW checked by: AC

location: checked by: 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 consistency / relative density material description hand structure and classification g samples & penetro meter additional observations $\widehat{\Xi}$ method & support penetra moisture condition field tests SOIL TYPE: plasticity or particle characteristic, graphic $\widehat{\mathbf{E}}$ depth (water colour, secondary and minor components (kPa) 牊 9 8 9 9 ROAD SURFACE: ASPHALT: 0.03 m. ROAD SURFACE FILL PID=0.3ppm FILL: Gravelly SAND: fine to coarse grained, dark I I INot Observed grey, fine to coarse grained, sub-angular gravel. FILL: SAND: fine to medium grained, PID=0.3ppm $| \cdot |$ yellow-brown, with some fine to coarse grained, sub-angular to angular gravel. -28 B L MARINE DEPOSITS 1.0 SAND: fine to medium grained, pale grey. PID=0.4ppm Borehole BH06 terminated at 1.5 m -27 2.0 \perp I + I + I26 3.0 -25 4.0 I + I + I-24 5.0 -23 6.0 -22 7.0 I I I I I21 method AD auger drilling* classification symbol & support samples & field tests consistency / relative density soil description bulk disturbed sample very soft auger screwing based on Unified C casing D disturbed sample S soft hand auger НА Classification System environmental sample F St penetration washbore SS split spoon sample stiff no resistance ranging to
 refusal undisturbed sample ##mm diameter VSt very stiff dry moist wet H Fb HP hand penetrometer (kPa) hard standard penetration test (SPT) friable SPT - sample recovered SPT with solid cone very loose loose bit shown by suffix N* VL plastic limit Nc e.g. B level on date showr AD/T liquid limit MD blank bit VS vane shear; peak/remouded (kPa) medium dense water inflow TC bit dense water outflow hammer bouncing very dense



GEOTLCOV24080AS Office Job No.: **Brookfield Mulitplex** 28.7.2015 Client: Date started:

Borehole No.

Sheet

BH10

1 of 1

Principal: Date completed: 28.7.2015

Bor	- Sehol	مما د	ation	UNSI	NK	onei	nato	n Cal	mnue		Chocke		ML
		l and r							<u> </u>	-90°	Checke		
			nound	_		VODE I	02201	TINAU	-	-90			. Surface:
	diam	eter: infor	matic		5 mm		mato	rial eu	Northing bearing:			datı	ım:
method	1 penetration	ater	DIA	notes samples, tests, etc		depth metres	aphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	100 pocket 200 penetro- 300 meter	structure and additional observations
НАрт				E+		_	4 4 ***		CONCRETE: FILL Gravelly SAND, fine grained, yellow brown,	D	L		No odour or staining.
				E+3.0ppm		0. <u>5</u> - - - 1. <u>0</u> -		SC	gravel, fine-medium, dark brown, subrounded. SAND: fine grained, pale yellow brown.	D	L		No odour or staining.
PT				E+4.2ppm \(Dup2)		1. <u>5</u> 2. <u>0</u> - 2. <u>5</u> 2. <u>5</u>							
				E+4.3ppm		3. <u>0</u>							
				E+4.2ppm		3. <u>5</u> - - - 4. <u>0</u>			Borehole BH10 terminated at 3.9m				
						- - 4. <u>5</u> - -	-						
met DT PT SS HS VT AH CP HA NDI RC		hollow V Bit, air hai cable hand	ube stem flig stem f T Bit mmer percuss auger estructi	iht auger light auger sive ve digging		10/1 on c		er level wn	U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter bas D disturbed sample system standard penetration test (SPT)	isture dry moist wet	classifica		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



GEOTLCOV24080AS Office Job No.: **Brookfield Mulitplex** 28.7.2015 Date started:

Borehole No.

Sheet

BH11

1 of 1

Principal: Date completed: 28.7.2015

Bor	rehole	e Loc	ation	: UNSI	NK	ensi	ngto	n Cai	npus		C	Checke	ed by:	ML
drill	mode	l and ı	nounti	ing: G	EOPF	ROBE 7	7822DT	/TRAC	CEasting: slope:	-90°			R.L	. Surface:
-	diam				5 mm		<u> </u>		Northing bearing:				datı	um:
	penetration 6	info	matic	notes samples,					ostance material		e. L	ency/ index	pocket penetro- meter	structure and additional observations
method	123	water	PID	tests, etc	RL	depth metres	graphic log	classification symbol	soil type: plasticity or particle characteristic colour, secondary and minor components	cs, s.	moisture condition	consistency/ density index	kPa 002 6 004	additional observations
H&S						_	Α. Α		ASPHALT: ROADBASE:					
_				E+0.2ppm	1	_			CONCRETE:	\longrightarrow	D	L		No odour or staining.
				(Dup4)	1		\bowtie		FILL: Gravelly SAND, fine grained, brown, gravaline-medium, brown, subrounded.	vel	1			<u></u>
				E+1.2ppm		0.5	\bowtie		dark brown, gravel more coarse and slightly		D	MD		No odour or staining.
						- - 1. <u>0</u>			subangular.					
				E+2.2ppm	1	1. <u>0</u> –			grey.		D	L		No odour or staining.
PT						1. <u>5</u>								_
				E+3.1ppm	1	2. <u>0</u>		SC	SAND: fine grained, pale grey to white.		D	L		No odour or staining.
						2. <u>5</u>								_
						- - -		SC	yellow brown.	+	D	MD		No odour or staining.
				E+3.0ppm	1	3. <u>0</u> - -		SC	1cm band of ironstone gravel.		D	MD		No odour or staining.
						3. <u>5</u>								-
						_								
				E+3.5ppm		_		SC	sand is paler in colour.	+	D	MD		No odour or staining.
						4.0			Borehole BH11 terminated at 3.9m					
						-								
						_								
						4. <u>5</u>								
						7.5	İ							-
						_								
						_								
$ldsymbol{ldsymbol{ldsymbol{eta}}}$	Щ					5.0				-1	41			
Metalon Metalo		hollov V Bit, air ha cable hand	tube stem flig stem f T Bit mmer percus auger	ght auger flight auger sive ive digging		er 10/1			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	classifica soil desc based on system moisture D dry M mo W we Wp pla	ription unified o			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose
RC		rock o		> ~-99"19	★		er inflow er outflov	v			uid limit			MD medium dense D dense VD very dense



GEOTLCOV24080AS Office Job No.: **Brookfield Mulitplex** 28.7.2015 Client: Date started:

Borehole No.

Sheet

BH12

1 of 1

Principal: Date completed: 28.7.2015

			0,10.	, , , , , , , , , , , , , , , , , , ,	CHSH	igio	II Cal	npus		(Checke	ed by:	ML
nodel	and	nount	ing: G	EOPF	ROBE 7	7822DT	/TRAC	CEasting: slope:	-90°			R.L	. Surface:
				5 mm				Northing bearing:				datı	um:
_	info	mati	on		1	mate		bstance	-				
5 penetration	water	PID	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	colour, secondary and minor component		moisture condition	consistency/ density index	100 pocket 200 penetro 300 penetro	structure and additional observations
			E+0 3ppm		_	$\times\!\!\times\!\!\times$				D			No odour or staining.
			Ε τοισρριί		0.5		SC		el	D	L		No odour or staining.
			E+1.2ppm		_ _								
			E+2.0ppm	<u>-</u>	1. <u>0</u>								
					- 1. <u>5</u>		SC	dark brown,		D	D		No odour or staining.
					- - -								
			E+3.0ppm	1	2. <u>0</u> - -		90	nale vellow brown			MD		No odour or staining.
					2. <u>5</u> -		30	pale yellow brown.		ט	IVID		No odour or starring.
			E+3.0ppm		3. <u>0</u>								
					3. <u>5</u>								
			E+3.1ppm		_								
					4. <u>0</u> -			Borehole BH12 terminated at 3.9m					
					4. <u>5</u>								
					- - -								
)	push soild s hollow V Bit, air ha cable hand non-d	tube stem flig stem T Bit mmer percus auger estruct	flight auger	1 2	etration : 3 4 :er 10/1	no res rangir refusa /98 wate late show	ng to al er level	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	soil desc based on system moisture D dry M mo W we Wp pla	ription unified of sist t stic 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
	ling 1 2 benefitation and od	diatub push i soild shollow V Bit, air ha cable hand-	diatube push tube soild swelling holds with the soil that holds with the soil that holds with the soil that had auger cable percushand auger	diatube push tube soild stem flight auger holds the manuer cable percusive hand auger non-destructive digging in total samples, tests, etc. 1 2 3	Ing information Total	Ing information Section Part Part	Integration I	Indig information Indig informa	In notes samples, tests, etc less, e	Internation material substance material ma	In information material substance material soil type; plasticity or particle characteristics, clour, secondary and minor components. Science Scien	Section Sec	Ining information Secondary and property in the property in



GEOTLCOV24080AS Office Job No.: **Brookfield Mulitplex** 28.7.2015 Date started:

Borehole No.

Sheet

BH13

1 of 1

Principal: Date completed: 28.7.2015

UNSW Material Science Building PD Project: Logged by:

Borehole Location: UNSW Kensington Campus Checked by: ML GEOPROBE 7822DT/TRACK Easting: slope: R.L. Surface: hole diameter: bearing: datum drilling information material substance pocket penetro-meter classification symbol consistency/ density index material structure and samples penetra moisture condition additional observations method tests, etc water PID soil type: plasticity or particle characteristics, depth RL 9889 colour, secondary and minor components. 123 ROADBASE D FILL: Sand, fine grained, grey. No odour or staining. 0.5 E+2.8ppm 1.0 E+3.0ppm 1.5 PT 2.0 SAND: fine grained, pale grey to white. D No odour or staining. Τ E+3.4ppm SC dark yellow brown. D No odour or staining. 2.5 L SC D pale yellow brown. П No odour or staining 3.0 E+3.2ppm SC paler in colour. D 3.5 L No odour or staining. E+2.9ppm Borehole BH13 terminated at 3.9m 4.0 4.<u>5</u> method penetration notes, samples, tests classification symbols and consistency/density index undisturbed sample 50mm diameter soil description VS very soft DT diatube 1234 undisturbed sample 63mm diameter based on unified classification push tube no resistance ranging to refusal SS soild stem flight auger D disturbed sample system firm HS VT standard penetration test (SPT) St hollow stem flight auger Ν stiff SPT - sample recovered moisture VSt very stiff V Bit. T Bit SPT with solid cone ΑН air hammer СР cable percussive vane shear (kPa) Μ moist Fb friable 10/1/98 water level VL НΑ hand auger pressuremeter wet very loose on date shown non-destructive digging Bs bulk sample Wp plastic limit NDD loose water inflow environmental sample liquid limit MD medium dense rock corer refusal dense water outflow verv dense



GEOTLCOV24080AS Office Job No.: **Brookfield Mulitplex** Date started: 28.7.2015

Borehole No.

Sheet

BH7

1 of 1

Principal: Date completed: 28.7.2015

	orehole Location: UNSW Kensington Campus Il model and mounting: GEOPROBE 7822DT/TRACK Easting: slope:						Checked by: ML								
				ounti				7822DT	/TRAC		-90°			R.I	Surface:
	diam			4.		00 mr	n	.		Northing bearing:				dat	tum:
method	penetration		water	natio	notes samples, tests, etc		depth	aphic log	classification symbol	bstance material soil type: plasticity or particle characteristic	es,	moisture condition	consistency/ density index	pocket a penetro- meter	
	123	3	>	Δ.		RL	metres			colour, secondary and minor components CONCRETE:	3.	E 8	ŏŏ	300 4 400 0	
IO							_	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		CONCRETE:					
¥L					E+2.4ppm		-			FILL: Sand, fine grained, dark brown.		D	L		No odour or staining.
					Е+3.0ррп	-	0.5			FILL: Gravelly SAND, fine grained, dark brown grvel medium-coarse concrete, grey, subangul Borehole BH7 terminated at 0.55m	, ar.	D	L		No odour or staining. Terminated at 0.55m due to encountering concrete slab.
							_								
met DT PT SS HS VT AH CP	hod	so ho V I air ca	llow s Bit, T ham ble p	be em flig stem f Bit mer ercuss	iht auger light auger			— no res rangir ► refusa		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)	classifica soil desc based on system moisture D dry M mo	ription unified o			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable
HA NDE RC)	ha no	nd a	uger structi	ve digging	<u>↓</u>	on o	/98 wate late show er inflow er outflow	wn	P pressuremeter Bs bulk sample	W we Wp pla				VL very loose L loose MD medium dense D dense VD very dense



GEOTLCOV24080AS Office Job No.: **Brookfield Mulitplex** Client: Date started: 28.7.2015

Borehole No.

Sheet

BH9

1 of 1

Principal: Date completed: 28.7.2015

UNSW Material Science Building PD Project: Logged by: Borehole Location: IINSW Kensington Campus Checked by: МІ

Bor	ehol	e Loc	ation	UNS	NK	ensi	ngto	n Cai	mpus		C	Checke	ed by:	ML
drill r	mode	and	nount	ing: G	EOPF	ROBE	7822DT	/TRAC	K Easting: slope:	-90°			R.I	L. Surface:
hole	diam	eter:		75	5 mm				Northing bearin	g:			da	tum:
dri		info	mati	on			mate	rial su	bstance					
method	Denetration	water	PID	notes samples, tests, etc		depth metres	graphic log	classification symbol	material soil type: plasticity or particle characte colour, secondary and minor compor	ristics, nents.	moisture condition	consistency/ density index	100 pocket 200 penetro- 300 w meter	
НАОТ						_			ASHPHALT/BITUMEN:					
H/				E+3.0ppm		- 0. <u>5</u>			ROADBASE: FILL: Sand, fine grained, dark grey.		D	L		No odour or staining.
				E+1.6ppm		- - -		SC	SAND: fine grained, pale grey.		D	L		No odour or staining.
				E+2.9ppm		1. <u>0</u> - - -		SP	some coarse gravel within sand.		D	L		No odour or staining.
PT						1. <u>5</u> - - - 2. <u>0</u>		SC	fine grained, pale grey.		D	L		No odour or staining.
				E+2.8ppm				SC	dark brown.		D	D		No odour or staining.
				E+3.1ppm		- 2. <u>5</u>								
				E+3.0ppm		3. <u>0</u>		SC	pale yellow brown.		D	MD		No odour or staining.
				E+3.2ppm		3. <u>5</u> - - -								
						4. <u>0</u> - - - 4. <u>5</u>			Borehole BH9 terminated at 3.9m					
						5.0				dess'f'	tion -	whole a		
met DT PT SS HS VT AH CP HA NDI RC	t hod	hollow V Bit, air ha cable hand	tube stem fli v stem T Bit mmer percus auger estruct	ght auger flight auger ssive ive digging		10/1 on o		er level wn	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		ription unified o	classificat		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



Engineering Log - Monitoring Well

Borehole No.

Sheet 1 of 1

Office Job No.: **GEOTLCOV24080AS**

BH7A

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

Borehole Location: UNSW Kensington (Can	npus	Checked by: ML								
drill	drill model & mounting: GEOPROBE 7822DT/TRACK E			Eas	ting:	slope: -90° R.L. Surface:				. Surface:				
	e dian			4!					thing:	bearing	g:		datı	um:
method	illing 2 benefication	upport		notes samples, tests, etc	well details	RL n	depth netres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mino	> 0			
РТ НА ВТ	-			E+0.2ppm (Dup 3,Dup3A	Λ.I. ΙΛ.		_ _ _			CONCRETE: FILL: Gravelly SAND, fine grained gravel fine, dark grey, subrounded		D	L	No odour or staining.
				E+0.6ppm			1	***	SC	SAND: fine grained, pale grey.		D	L	No odour or staining.
				E+0.7ppm	0. 0.		<u>2</u> - - 3		SP SC	1cm band of very dark brown grav Yellow brown, bands of dark brown brown sand.		D	MD	No odour or staining
				E+1.2ppm			4		SC	becomes pale yellow grey brown.		D	MD	No odour or staining
				E+2.1ppm			5		80	band of dark brown sand.			MD	
HS	_		-	E+1.3ppm			<u>6</u>		SC SC	Callu Di Gark blown Salid.		D W	MD	No odour or staining.
				E+0.5ppm Dup5,Dup5/			8			Borehole terminated at 8m		•••	IVID	
				wapo, oupon	-		9 -							- - - - - - -
Form GEO 5.10 Issue 3 Rev.0 LO ST OF	i i i i	soile holle V Bi air h cab han non	n tube d stem ow ster t, T Bit lamme e perc d auge	flight auger m flight auger t er cussive er uctive digging	→ on → wa	ing ation 4	N nil	1	notes, s U ₅₀ D N N* Nc P Bs R E PIID WS PZ ALT	amples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal environmental sample PID measurement water sample piezometer air lift test	classification sym soil description based on unified cl 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 14.8.15

Form GEO 5.10 Issue 3 Rev.0



Engineering Log - Monitoring Well

BH8

1 of 1 Sheet

Borehole No.

GEOTLCOV24080AS Office Job No.: Brookfield Mulitplex 28.7.2015 Client: Date started:

Principal: 28.7.2015 Date completed:

UNSW Material Science Building PD Project: Logged by:

Во	reho	ole L	ocat	ion: <i>UNS</i>	W Ker	sington	Can	npus		C	hecked	l by:	ML
dril	l mod	el &	moun	iting: GEOPR	OBE 7822	DT/TRACK	Eas	sting:	slope:	-90°		R.L	. Surface:
_	e diar							rthing:	bearing	g:		dati	um:
di	_	_	form	ation			ma	1	substance				
method	12 penetration		support	notes samples, tests, etc	well details	depth RL metres	graphic log	classification symbol	material soil type: plasticity or particle colour, secondary and mino	characteristics, r components.	moisture condition	consistency/ density index	structure and additional observations
K					0 0 0 0	_			CONCRETE: ROADBASE:				
				E+2.0ppm	0 0	- - - 1		SC	SAND: fine grained, pale grey.		D	L	No odour or staining.
PT				E+1.5ppm (Dup1,Dup1/									
						2							
				E+3.0ppm		_		SC	fine grained, dark brown.		D	L	No odour or staining.
								SC	pale yellow brown.		D	L	No odour or staining.
					0 0	3							_
				E+3.0ppm		_							
						_							
						4							_
				E+3.5ppm		_							
						_		SC	pale grey.		D	L	No odour or staining.
TCSS	- -		•	E+3.2ppm		<u>5</u> - -					M	L	Strong organic matter odour, no staining.
Ĭ				E+4.0ppm		6_					W	L	No odour or staining.
						- - 7							
	Ш			E+3.3ppm				-	Borehole terminated at 7m				
						_							
						8							
													_
						_							
						9							
						_							
						_							
L						10	L.						
PT SS HS VT AH	5 6 7 H	dia pu so ho V aii ca	ollow sto Bit, T E hamm ble per	m flight auger em flight auger Bit ner rcussive	suppor C casi penetra 1 2 3	ng N n ation 4 no resistance ranging to refusal	il	U ₅₀ D N N* Nc P Bs R	amples, tests undisturbed sample 50mm diameter disturbed sample standard penetration test (SPT) SPT - sample recovered SPT with solid cone pressure meter bulk sample refusal	classification sym soil description based on unified cl system moisture D dry M moist			consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable
NE RO	DD	no	ind aug on-dest ck core	ructive digging	on wa	1/98 water level date shown ter inflow ter outflow		E PID WS PZ ALT	environmental sample PID measurement water sample piezometer air lift test	W wet Wp plastic limit W _L liquid limit			VL very loose L loose MD medium dense D dense VD very dense

PIEZOMETER GEOTLCOV24080AS.GPJ COFFEY.GDT 14.8.15

Form GEO 5.10 Issue 3 Rev.0

Appendix I – Equipment Calibration Records



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	(00 ppm	O O ppm	101 ppm	Lot:1805792 Cyl:9	V
Alarm Limits		В	ımp Test			
High	(<i>OO</i> ppm		Date	Target Gas	Reading	Pass?
Low	<i>5</i> 0 ppm	2	4/07/2015	/00 ppm	/0/ ppm	
Tag No:	atus (Min 5.5 volts Tag attached (AS/N 000 177 13/10/20 107/ 200 1	are received and the		□ Data clear □ Filters che	ce check (pump, lamped cked check ch	turn. A
Sent R	eturned Iten	n FRAE 2000 PID / Openp	nd Set to: <u>Isobu</u>	/ Battery Status tylene_ C/factor:	5.5 V	
	Prol Inle Spa Cha Inst Quic Spa Inlin Cali	tective yellow rubber to probe (attached to re water trap filter(s) arger 240V to 12V 50 ruction Manual behinds Guide Sheet behinder Alkaline Battery Case Moisture trap Filte bration regulator & trap cable and Software ry Case ack to confirm electric	PID) Qty	lid of case " th batteries ted AL7155		
Date: 24/	Prol Inle Spa Cha Inst Quic Spa Inlin Cali	t probe (attached to re water trap filter(s) urger 240V to 12V 50 ruction Manual behinck Guide Sheet behine Alkaline Battery Cae Moisture trap Filte bration regulator & to a cable and Softwarery Case	PID) Qty	lid of case " th batteries ted AL7155		
outc	Prol Inle Spa Cha Inst Quic Spa Inlin Cali Data Car Che	t probe (attached to re water trap filter(s) urger 240V to 12V 50 ruction Manual behir ck Guide Sheet behire Alkaline Battery Ce Moisture trap Filte bration regulator & to a cable and Software ry Case ck to confirm electric	PID) Qty	lid of case " th batteries ted AL7155		
signed:	Prolinle	t probe (attached to re water trap filter(s) re water trap filter(s) ruction Manual behir ck Guide Sheet behire Alkaline Battery Ce Moisture trap Filte bration regulator & to a cable and Software ry Case ck to confirm electric	PID) Qty	lid of case " th batteries ted AL7155 ust be valid)		
igned:	Prolinle Spa Cha Inst Quice Spa Inlin Cali Data Carr Che 7/ Zo	t probe (attached to re water trap filter(s) urger 240V to 12V 50 ruction Manual behir ck Guide Sheet behire Alkaline Battery Ce Moisture trap Filte bration regulator & to a cable and Software ck to confirm electric CSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	PID) Qty	lid of case " th batteries ted AL7155 aust be valid)		

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Issue 7		Nov 12		G0553	



000		FIELD	EQUIPN	MENT (CAL	LIBRATION D	ETAILS				
Job/Site Details:		-									
Project Name: MSB	WZKU				Pr	oject Number: GEC	TLCOV24	OROAS			
Fieldwork Date(s): 2		115			_	ork Completed By:					
Type of Work (eg. ESA											
NB When completing serv			the calibration	certificate	which	n accompanies the equi	pment.				
Photoionisation De	tector (PID):										
Equipment Description	1:			Equipme	nt ID);					
Calibration Frequency	Required by M	lanufacturer:		Last Sen	vice I	Date:		Calibrated by	' :		
Challenge Gas Standa	rd: 0.0 PPM	rest dir	qds	Gas Bato	ch #:			Gas Expiry d	ate:		
Field Challenge Details	s:										
1) Date/Time: 28/7/19	shav 99.96 iso	4) Pate/Tin	ne:		7)	Date/Time:		10) Date/Tim	e:		
2) Date/Time:	,	5) Date/Tin			8)	Date/Time:		11) Date/Tim	e:		
3) Date/Time:		6) Date/Tin	ne:		9)	Date/Time:		12) Date/Tim	e:		
Lower Explosive Le	evel Meter (L	EL):									
Equipment Description:				Equipme	nt ID	:					
Calibration Frequency	Required by M	lanufacturer:		Last Sen	vice [Date:		Calibrated by :			
Challenge Gas Standard:				Gas Bato	ch #:			Gas Expiry date:			
Field Challenge Details:						Tick if recorded els	ewhere on Ho	ot Work Permit	(No)		
1) Date/Time: 4) Date/Time:					7)	Date/Time:		10) Date/Time	e:		
2) Date/Time:		5) Date/Tin	ne:		8)	Date/Time:		11) Date/Time	e:		
3) Date/Time:		6) Date/Tin	ne:		9)	Date/Time:	12) Date/Time	e:			
Water Quality Mete	r:										
Equipment Description	:			Equipme	nt ID	:					
Calibration Frequency		lanufacturer:		Last Sen	vice [Date:		Calibrated by	1		
Calibration Standards:											
Field Calibration Reco		-			-		1		1		
Date Calibrated	DO Pro	obe	Conduc	ctivity		pH 4.0	р	H 6.88	Temperature		
					-						
					-						
Interface Probe (IP)				I							
Equipment Description				Equipme			1,-	Diameter 1.1			
Calibration Frequency		ianutacturer:		Last Sen	vice L	Jate:	Ca	llibrated by :			
Field Challenge Details	S.	A) DetaT									
1) Date/Time:		4) Date/Tin			7) Date/Time: 10) Date/Time						
2) Date/Time:		5) Date/Tin			8) Date/Time: 11) Date/Time:						



Signed:

Equipment Serial No.

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?
рН	7.00H / pH 4.00	7.00 pH	14.00 pH	1	
Conductivity	12.88 mS/cm	ø ⋅∞ mS/cm	12-88 mS/cm		
TDS	36 ppk	<i>O</i> ppk	<i>3</i> 6 ⊘ ppk		
Dissolved Oxygen	Sodium Sulphite / Air	ppm in Sodium Sulphite			ď
Check only Redox (ORP) *	Electrode operability test	240mV +/- 10%	227 mV		d
mV reading. Battery Sta	7.4	_(min 7.2V)	ngs to SHE (Standard Hydr Temperature _ Electrodes Cle	ogen Electrode), add 199r 20-7 °C eaned and checked	nV to the
_	tus	S/NZS 3760)	☐ Temperature _ ☐ Electrodes Cle	aned and checked	

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.

<u>ज्यावाचाचाचाचाचाच</u>		Dissolved oxygen YSIST Redox (ORP) sensor wi Power supply 240V to 1 Instruction Manual Quick Guide Plastic container with s Carry Case Check to confirm electric	cap, 5m erature K=10 sensor, 5m 739 sensor with wetting ca th wetting cap, 5m	ap, 5m d ORP		
TFS Ref	ference	CSUD 3075	Return Date:	1	1	
Customer Ret	ference		Return Time:			
Equipr	nent ID	90FLMVS W	Condition on return:			

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Melbourne Branch
5 Caribbean Drive,
Sydney Branch
Level 1, 4 Tallavera Road,
North Ryde 2113 South Australia 50667

North Ryde 2113 North Ryde



Cleaned/Tested

Probe

RENTALS

Equipment Report - Solinst Model 122 Interface Meter

□No

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

Pass? TYes

∃Tape/Reel		8.7
Performance Test 8	Battery Volt	tage Check (v) 8.0v minimum
return. A minimum \$2	following iter	Checked by: Checke
Sent Received	Returned	Item
		Operations check OK
	L D	Plastic Box / Bag Spare 9V Battery Qty
	D	Probe Cleaning Brush
		Decon
	\Box	Instruction leaflet
B []	D	Tape Guide
	D	
Processors Signatu	re/ Initials	d don
	ı	
Quote Reference	CS003	Condition on return
Customer Ref		
Equipment ID	31226	OSE
Equipment serial no.		2
Return Date	1	/
Return Time		
	-	

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| Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Solution | Email: RentalsAU@Thermofisher.com

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anch
inve, Sydney Branch
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North Ryde 2113 Melbourne Branch 5 Caribbean Drive, Scoresby 3179

Sep 11 G0561 Issue 5

Appendix J – Groundwater Field Data Sheets

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Well Gauging Form

P

ODOUR, COLOUR, SHEEN, NAPL (and its colour), REMEDIATION SYSTEM, etc SOP - Decontamination of Sampling Equipment asca Conclition Well in good condition COMMING OF COMMENTS (notes 2 & 3) GOHIC REFER TO SOPS WHEN GAUGING WELLS: and 20000 5/8/13 SOP - Monitoring Well Gauging 2 Height of Well Stick-Up HUSP DATE: PROJECT NUMBER: Ε 7 PSH Thickness [B-A] E 550 5.470 4.930 600 Depth to Groundwater **MBTOC** <u>@</u> 10 Depth to PSH (NAPL) IP Serial Number: **MBTOC** ₹ 050 ×35 011. Total Well Depth note 1 086.9 Ε 1 5 0 Well Diameter PD 50 -E 11 1 Equipment Used: IP Meter PROJECT NAME: FIELD PERSONNEL: PROJECT MANAGER: BH7A Well ID BHB RH 2 BH8 FIELD EQUIPMENT: Time of Day

Coffey Environments – Well Gauging Form Issue Date: 17/10/2013 UNCONTROLLED WHEN PRINTED – SEE ELECTRONIC COPY FOR LATEST VERSION

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							COMMENTS	ODOUK, COLOUK, SEDIMENTS, PSH COLLECTED, etc	Colour less.	11	10	" "	11	11			
				Aush	PID READING				No odour.	11	11	11	//	11			
24080AS			SCREEN INTERVAL:	WELL STICK-UP:	WELL HEADSPACE PID READING PID READING PPM:		Idy Lick one Idy	Sligh Clor Clor Ver Clor									TRIPLICATE ID:
20	8/15		REEN IN	WELL S	> IL IL			elO IgilS	1	7	7	7	7	7			
POTTC	5/8		SC		ME.		TURE	CHANGE	OO				1			၀င	N O
MBER: GE	DATE		110M	SOMM	LITRES PER 1 WELL VOLUME $\frac{\sim l + l}{\sqrt{3 - 4 \cdot 2}} \sqrt{l}$		TEMPERATURE (°C)	READING	171	5.81	8.81	8.81	18.1	18.5		± 0.2°C	DLLECTED: Y N TRIPLI
PROJECT NUMBER:	-		2		KES PER 1 V	Ag/AgCl Saturated KCl	REDOX POTENTIAL (mV)	CHANGE	INV							10mV	TRIPLICATE COLLECTED:
PRO			TOTAL WELL DEPTH:	WELL DIAMETER:	<u>\$</u> 	Ag/AgCI Sa	POTEI (m)	READING	90	84	83	18	82	80		± 10	PLICATE C
			TOTAL	WEL	the g - Bailers' ed from the	Ag/AgCi 4M KCi /	ts)	CHANGE								unit	TRII
				1	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)		pH (pH units)	READING	6.27	626	8+.9	94.9	6.45	84.9		± 0.1 unit	
					mn calculatic SOP- Ground e correct volu value in the f	Ag/AgCl 1M KC	CAL VIVITY V(cm)	CHANGE*	uskim				0			9	ad tric ed
				OTHER	Use water colu procedures in ' to determine th well (enter this		ELECTRICAL CONDUCTIVITY (mS or µS/cm)	READING	487	532	702	563	570	573		¥ 3%	DUPLICATE ID: TRIPLICATI Unfillered samples must not be put into a preserved container (i.e. 'metals' bottle)
2			PE:	<u></u>	E .	Calomel Saturated KCI /	LVED SEN A)	CHANGE*	Mad	1						40%	DUPLICATE ID:
2000	PD	PD	METER ID& TYPE :	WATERRA	ATER COLUMN	SHE /	DISSOLVED OXYGEN (mg/l)	READING	87.29	4:75	78.8	5.37	184	4.22		± 10	Z
MSB			MET	.2	OLUME CALC	DE: (circle)	DEPTH TO WATER (m)		語								\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
PROJECT NAME:	SONNEL:	IANAGER:	17	ED: BAILER	• PURGE VO	ELECTRO	VOLUME (L)			01	20	30	40	42		NTERIA 1g ranges)	LECTED:
PROJE	FIELD PERSONNEL:	PROJECT MANAGER:	WELL ID: BH	EQUIPMENT USED:	WELL GAUGING AND PURGE VOLUME CALCULATIONS (TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN) $q \cdot (10) = 3 \cdot 510$	ORP REFERENCE ELECTRODE:	CYCLE/ PUMP RATE (ml/min)									STABILISATION CRITERIA (3 readings within following ranges)	DUPLICATE COLLECTED: WERE METALS FIELD FILTERED?
			WEL	EQUIF	WELL GAUG (TOTAL WEL	ORP RE	TIME OF DAY									STABII (3 reading	DUP

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coff	coffey 🍫				Ground	Groundwater Sampling		Form (A) - General	Genera				Z		PAGE	P.	-
	PROJE	PROJECT NAME:	MSB	JOSZO (3					PROJ	PROJECT NUMBER:		GEOTL	CCOVE	24080A	St	Ī
	FIELD PE	FIELD PERSONNEL:	0	D								DATE:	1/8/5	U			
-	PROJECT MANAGER:	MANAGER	PD	A													
WEL	WELL ID: $B_{ m k}$	BH3	MET	METER ID& TYPE	PE:				TOTAL V	TOTAL WELL DEPTH:	# 9:05	050	SCR	EEN IN	SCREEN INTERVAL:		
EQUI	EQUIPMENT USED:	ED: BAILER	.7	WATERRA		OTHER			WEL	WELL DIAMETER:		SOMM	>	VELL ST	WELL STICK-UP:	Flus	45
WELL G	FELL GAUGING ANI TOTAL WELL DEPTH)-	ND PURGE VOLUME) – (DEPTH TO WATER _		CALCULATIONS $I = (\text{WATER COLUMN})$ $= \sqrt{3 \cdot \text{SO O}}$	E C	Use water coluprocedures in 'to determine the well (enter this	mn calculatio SOP- Ground e correct volu value in the fi	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)	the 1 - Bailers' d from the	LITRE	S PER 1 W	LITRES PER 1 WELL VOLUME	J.	M IId IId	WELL HEADSPACE PID READING PID READING PPM:	PACE PIC	READING
ORP R	EFERENCE	ELECTRO	DE: (circle)	SHE / Ca.	lomel Satura	ORP REFERENCE ELECTRODE: (circle) SHE / Calomel Saturated KCI / Ag/AgCl 1M KCI / Ag/AgCl 4M KCI / Ag/AgCl Saturated KCI	/AgCI 1M KC	/ Ag/AgCI	4M KCI /	Ag/AgCl Satu	rated KCI						
TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)	LVED SEN ()	ELECTRICAL CONDUCTIVITY (mS or µS/cm)	CAL IVITY (cm)	Hd (stjun Hd)	(s;	REDOX POTENTIAL (mV)	ALL C	TEMPERATURE (°C)	TURE		i ybu		COMMENTS
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE	READING	CHANGE*	READING	CHANGE	Sligl Bilgl Clor	JOID 9V	Jol TuT	COLLECTED, etc
				T													
				19:5	Med	424	WIJSW	11.9		82	MV	191	00	7			No orlow. Pink grey
		01		3.85		405		6.22		72		17.2		7			11
		30		3.61		868		61.9		75		9.41		7			11
		30		3.90		968		6.21		22		2.11		7			11 cated les
		4		3.93		488		6.19		47		4.41		7			11
		42		3.34		358		6.20		73		17.6		7			11 11
STABI	STABILISATION CRITERIA	RITERIA		+ 10%	%(+ 3%	.0	± 0.1 unit	mit	± 10mV	νu	± 0.2°C	ပွ				

WERE METALS FIELD FILTERED? Y

HAS THIS FORM BEEN COMPLETED IN FULL? Y N

Unfiltered samples must not be put into a preserved container (i.e. 'metals' bottle)

Y N TRIPLICATE ID:

TRIPLICATE COLLECTED:

DUPLICATE ID:

Z

DUPLICATE COLLECTED:

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PROJE	PROJECT NAME:	MSB	NSNO	2					PROJ	PROJECT NUMBER:		FOTLC	0121	GEOTLCOV24080AS	Í	
FIELD PE	FIELD PERSONNEL:	£									DATE:	5/8/	35			
PROJECT MANAGER:	IANAGER:	PD														1
WELL ID:	BH7A	MET	METER ID& TYPE :	'PE:				TOTAL V	TOTAL WELL DEPTH:	1	835	SCRE	EN IN	SCREEN INTERVAL:		
EQUIPMENT USED:	ED: BAILER	7	WATERRA		OTHER			WEL	WELL DIAMETER:		SOMIN	8	ELL ST	WELL STICK-UP:	Flush.	
WELL GAUGING AND PURGE VOLUME CALCULATIONS	D PURGE V	DLUME CAL	CULATIONS	'									WE	WELL HEADSPACE PID READING	PID READING	
(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN) $7.835 \text{m} - 5.470 = 3.365$)-(Dертн то	7тн то WATER) = (W	ATER COLUMN	E S	Use water colu procedures in " to determine th well (enter this	mn calculatic SOP- Ground e correct voll value in the f	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)	the g - Bailers' ed from the	LITRE	S PER 1 W	LITRES PER 1 WELL VOLUME $\frac{\sim 8}{\times 3} \text{ L}$	Щ.	PID R	PID READING PPM:		
ORP REFERENCE ELECTRODE:	ELECTRO	DE: (circle)	SHE /	Calomel Saturated KCI	_	/AgCl 1M K	Ag/AgCI 1M KCI / Ag/AgCI 4M KCI	_	Ag/AgCl Saturated KCl	urated KCI	8					
CYCLE/ TIME OF PUMP DAY RATE (ml/min)	VOLUME (L)	DEPTH TO WATER (m)	DISSOLVED OXYGEN (mg/l)	LVED 3EN (/)	ELECTRICAL CONDUCTIVITY (mS or µS/cm)	CAL IVITY s(cm)	PH (ph units)	ts)	REDOX POTENTIAL (mV)	XX TIAL	TEMPERATURE (°C)			TY - tick one day		
			READING	CHANGE*	READING	CHANGE	READING	CHANGE	READING	CHANGE	READING	CHANGE	Sligl Sligl	JOIO SV JOIO TIOIO	COLLECTED, etc	
	_		5.22	Med	371	uSicm	6.45		19	フェ	17.6	00	7		No odour. Pale grey	
	∞		4.59	77	292		6.28		59		18.5			7	11 Pale Brow	-
	9		4.71		287		6.34		19		18.7			7	11 11	
	34		4.69		288		6.32		64		18.9			7	11 11	
7																
																1
STABILISATION CRITERIA (3 readings within following ranges)	RITERIA ng ranges)		+ 1	10%	*6 +	9	± 0.1 unit	unit	± 10mV	Au Vu	± 0.2°C	ပွ	-			
DUPLICATE COLLECTED:	LLECTED:	>	Z	DUPLICATE ID:	E D:		Ī	TRI	TRIPLICATE COLLECTED:	LLECTED:	>	z	7	TRIPLICATE ID:		
WERE METALS FIELD FILTERED?	LD FILTER	` <u>`</u>	Z	Unfiltered s	Unfiltered samples must not be put into a	t be put into a	preserved container (i.e. 'metals' bottle)	ner (i.e. 'metal	3.4	HAS THIS	HAS THIS FORM BEEN COMPLETED IN FULL?	COMPLET	ED IN FL	>		

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Groundwater Sampling Form (A) - General

					_				- 4	 _	March N	1	750				
				flush.	ID READING			COMMENTS COMMENTS	COLLECTED, etc	No odcur. Pale grey bio	Stight clien type oclour. By		very shight chain type oo	Potte givey browns.			UPIA- ACIA
GEOTICOV 24080AS			ITERVAL:	WELL STICK-UP:	WELL HEADSPACE PID READING	PID READING PPM:		CLARITY - tick one udy rich ud	Cloi Ve	\	7	7	7				TRIPLICATE ID: DOT
TLCOV	8/18		SCREEN INTERVAL:	WELL S	5	<u>a</u> a		Sar	CIE	.)							2
	DATE: 5/		0	N.		L VOLUME		TEMPERATURE (°C)	READING CHANGE	20 6.5	7.7	7.9	7.9			± 0.2°C	DLLECTED: Y N W TRIPLE
PROJECT NUMBER:	DA		H: 6 98	R. SOMIM		LITRES PER 1 WELL VOLUME $\frac{\sim \ \ 3}{\times 3 = 24} \ \ L$	rated KCI	X TAL	CHANGE* F	ーフい	1.	1	I			>=	LLECTED:
PROJ			TOTAL WELL DEPTH:	WELL DIAMETER:		LITRE	Ag/AgCl Saturated KCl	REDOX POTENTIAL (mV)	READING	137	77	89	62			± 10mV	TRIPLICATE COLLECTED:
			TOTAL W	WELI		the g - Bailers' ed from the)	Ag/AgCI 4M KCI /	its)	CHANGE*							0.1 unit	TRI
						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)	_	pH (pH units)	READING	5.52	6.34	46.9	6.31			+ 0.1	<u></u>
						umn calculatio 'SOP- Ground he correct volu s value in the fi	Ag/AgCI 1M KCI	RICAL TIVITY (S/cm)	CHANGE*	usiam						3%	1
				OTHER		Use water col procedures in to determine t well (enter this	_	ELECTRICAL CONDUCTIVITY (mS or µS/cm)	READING	355	253	203	234			+1	DUPLICATE ID: TRIPLICATE
NST			YPE:			(N)	Calomel Saturated KCI	DISSOLVED OXYGEN (mg/l)	CHANGE*	Migd	1.1					± 10%	OUPLICATE ID:
. B , UR	PD	A	METER ID& TYPE :	WATERRA	WELL GAUGING AND PURGE VOLUME CALCULATIONS	(TOTAL WELL DEPTH) – (DEPTH TO WATER) = (WATER COLUMN) $6 \cdot 980 m = 4.930 = 2.000$	SHE /		READING	4.31	2.37	2.49	2.32			+1	
SM			ME	7	OLUME CAL	9 30 = (W	ODE: (circle)	DEPTH TO WATER (m)									,
PROJECT NAME:	FIELD PERSONNEL:	PROJECT MANAGER:	BH8	SED: BAILER	VD PURGE V	1) – (DEPTH TC	ORP REFERENCE ELECTRODE:	VOLUME (L)		_	88	2616	34			CRITERIA wing ranges)	OLLECTED:
PROJ	FIELD PI	PROJECT	WELL ID:	EQUIPMENT USED:	AUGING AP	WELL DEPTH	EFERENC	CYCLE/ PUMP RATE (ml/min)								STABILISATION CRITERIA (3 readings within following ranges)	DUPLICATE COLLECTED:
			WEI	EQUI	WELL	(TOTAL	ORP R	TIME OF DAY								STAB (3 readir	2

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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 time	es met?		
2. Were the samples in proper c reaching the laboratory?	ustody between the field and		
3. Were the samples properly a <i>This includes keeping the sam</i>	nd adequately preserved? apples chilled, where applicable.		
4. Were the samples received by	the laboratory in good condition?		
COMMENTS: Coffey note that all samples wer appropriate holding times.	e received by the laboratory to enable	analysis to be u	ndertaken within
Sample Handling was:		☐ Unsatisfacto	ry

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

- 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?

Yes	NO
	(Comment below)
\boxtimes	
\boxtimes	
\boxtimes	
\boxtimes	
\boxtimes	
\boxtimes	

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

A.	Were an	Adequate	Number	of field	duplicates	analysed	for	each
che	emical?							

- 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))

Yes	No
	(Comment
	below)
	Ш
	\boxtimes

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)
 Were an <u>Adequate Number</u> of trip blanks and sp 	ikes analysed?	\boxtimes	
B. Were the trip blanks free of contaminants?			
C. Were the trip spikes reported within acceptable re	ecoveries?	\boxtimes	
COMMENTS:			
C COLUDATAT DINICATE CAMBI EC			
6. EQUIPMENT RINSATE SAMPLES	ı	Voc	No
6. EQUIPMENT RINSATE SAMPLES		Yes	No (Comment below)
A. Were an adequate number of Equipmer	t Rinsate Samples	Yes	No (Comment below)
A. Were an adequate number of Equipmer collected?	·		
A. Were an adequate number of Equipment collected? B. Were the Equipment Rinsate Samples free of concentrations of zinc and dichloromethane (DCM chemicals may have remained on the sampling exthat the concentrations of zinc and DCM within the and below the assessment criteria, the potential for not expected to alter the assessment conclusions.	ntaminants? e groundwater sampling above the LOR. This quipment following decent sample were	ng on 5 Aus indicates to contamination equal to, o	gust 2015 reported that traces of these on. However, given r close to the LOR,
A. Were an adequate number of Equipment collected? B. Were the Equipment Rinsate Samples free of contract of the equipment rinsate sample collected during the concentrations of zinc and dichloromethane (DCM chemicals may have remained on the sampling extends that the concentrations of zinc and DCM within the and below the assessment criteria, the potential for not expected to alter the assessment conclusions.	ntaminants? e groundwater sampling above the LOR. This quipment following decent sample were	ng on 5 Aus indicates a contamination equal to, o between sa	gust 2015 reported that traces of these on. However, given r close to the 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

V LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

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

2	More the	laboratory	[,] blanks/reagents	hlanke from of	f contamination?
_	44616 IIIC	iabulatulv	' Dialiko/Itautilio	DIALING LIEE U	- 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?

Yes	No
	(Comment
	below)
\boxtimes	
\boxtimes	
	\boxtimes
\boxtimes	

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:		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

Page 1 of 1 0461

			Consignin	g Office:	Chatew	000																	
CO	ffey		Report Re	esults to:	Priya	Dass/Mollthew Lo	w Locke	. Mobi	le:						Ema	il:						@co	offey.com
	1103		Invoices t	o: Priy	a Dass	./Hotthew La	xke	Phon	e:						Ema	il:		Te.	2				offey.com
	10: GEOTLCOV24080AS	Task No:											Analy	ysis R	lequ	est S	ectiç	BO.	\w\ 				
	lame: UN2W	Laboratory:		ins Me						,	Y5/	//	//	//	/	//	13/	1/3	<i>8</i> //	7/	7,	7/	
Sampler's	s Name: Ben Fatahi	Project Mana	ager: Pri	da pai	HOM\ 22	thew Locke]		99		3/5	//	\(\frac{1}{2}\)	//					///	//,		
Special In	nstructions:									1	Z	9	13	//			\\$Z	<u> </u>		///	//		
Relevant a	agreements: Eurofins COF_ENAUABTF00952AA	A_MSA1;ALS CC	T T	ΓF00952AA]	18	5//	8/	6	X		12)	(2)	(Ka)	7/	//	///			
Lab No.	Sample ID		Sample Date	Time	Matrix (Soiletc)	Container Type & Preservative*	T-A-T (specify)	K				X					//		//		N	OTES	
	BH3 0-1-0.2		13/7/15		Soil	1x250NI GT+	-	1		M	/ \				100								
	BH3_0.5-0.64					ziplock bagt		V	~	Ag		V	1	~									
	BH3_1.0		1			(ce bricks							_ _										
	BH3 2.5					ų ,		~	~		_ _		_ _	<u> </u>									
	BH3 (2.5)					1×250M/GJ			Щ							_							
	BH3 5.5-5.9		1		<u> </u>	1312			Щ.	_		\perp	_		<u> </u>								
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Nama. T	Priya Dass Date: 20/	1-115		Name:	PETE		CEIVED BY	Date:		0/2	110			1						Use Only		EQ.	
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Name:	Date:		→	Name:	Jasv	inite		Date:	2	F10	-115	5		Sam	ples	Recei	ived F	roper	rly Ch	illed		V	
Company	y: Time:			Compan	iv: EUYO	the met		Time		4.3				Lab.	. Ref/	Batch	No.						
	ner Type & Preservation Codes: P - Plastic			Jar, V-Vial	ıl, Z - Ziplock B	Bag, N - Nitric Acid Pr	reserved, C -	Hydro	chloric	: Acid	Prese	erved,						-	469	5672	5		



ABN - 50 005 085 521 e.mail: EnviroSales@eurofins.com.au

web: www.eurofins.com.au

Melbourne 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

Coffey Geotechnics Pty Ltd Chatswood Company name:

Contact name: Priya Dass Project name: UNSW

Project ID: GEOTLCOV24080AS

COC number: 0461 Turn around time: 5 Day

Jul 20, 2015 4:34 PM Date/Time received:

Eurofins | mgt reference: 465878

Sample information

- \mathbf{V} A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- \mathbf{V} Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 5.6 degrees Celsius.
- \mathbf{V} All samples have been received as described on the above COC.
- \square COC has been completed correctly.
- **7** Attempt to chill was evident.
- \mathbf{V} Appropriately preserved sample containers have been used.
- \square All samples were received in good condition.
- \square Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- \mathbf{V} Appropriate sample containers have been used.
- \boxtimes Some samples have been subcontracted.
- Custody Seals intact (if used). N/A

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.



Environmental Laboratory NATA Accreditation Stack Emission Sampling & Analysis Trade Waste Sampling & Analysis Groundwater Sampling & Analysis Soil Contamination Analysis





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

Received:

Priority:

Contact Name:

Due:

Brisbane I/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

5 Day

Eurofins | mgt Client Manager: Charl Du Preez

Jul 27, 2015

Priya Dass

Jul 20, 2015 4:34 PM

		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
	ere analysis is co												
	oratory - NATA S		271				Х					X	
-	tory - NATA Site				X	Х		Х	Х	Х	Х	Х	Х
	ratory - NATA Si	te # 20794											
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
BH3_0.1-0.2	Jul 13, 2015		Soil	S15-JI18174	Х			Х		Х	Х		Х
BH3_0.5-0.6	Jul 13, 2015		Soil	S15-JI18175			Х	Х	Х		Х	Х	Х
BH3_1.0	Jul 13, 2015		Soil	S15-JI18176		Х							
BH3_2.5	Jul 13, 2015		Soil	S15-JI18177				Х			Х		Х
BH3_(2.5)	Jul 13, 2015		Soil	S15-JI18178		Х							
BH3_5.5-5.9	Jul 13, 2015		Soil	S15-JI18179		Х							



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





Certificate of Analysis

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-JI18174	S15-JI18175	S15-JI18177
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
ВТЕХ		-			
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)fluorantheneN07	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-JI18174	S15-JI18175	S15-JI18177
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-JI18174	S15-JI18175	S15-JI18177
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			

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

web : www.eurofins.com.au

+61 2 9406 1000

+61 2 9406 1002

Order No.:

Report #:

Phone:

Fax:

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 I/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

UNSW **Project Name:**

Project ID: GEOTLCOV24080AS

Received: Jul 20, 2015 4:34 PM 465878

Due: Jul 27, 2015 Priority: 5 Day

Contact Name: Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail							Organic Matter %	Metals M8	Eurofins mgt Suite B18	Eurofins mgt Suite B14	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B4
	ere analysis is co												
	oratory - NATA S		271				Х					Χ	
	atory - NATA Site				X	Х		Х	Х	Х	Х	Χ	Х
	ratory - NATA Si	te # 20794											
External Labor				1									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
BH3_0.1-0.2	Jul 13, 2015		Soil	S15-JI18174	Х			Χ		Χ	Χ		Х
BH3_0.5-0.6	Jul 13, 2015		Soil	S15-JI18175			Х	Х	Х		Х	Χ	Х
BH3_1.0	Jul 13, 2015		Soil	S15-JI18176		Х							
BH3_2.5	Jul 13, 2015		Soil	S15-JI18177				Х			Χ		Х
BH3_(2.5)						Х							
BH3_5.5-5.9	Jul 13, 2015		Soil	S15-JI18179		Х							

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN: 50 005 085 521 Telephone: +61 2 9900 8400 Facsimile: +61 2 9420 2977

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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
 mg/l: milligrams per litre

 ug/l: micrograms per litre
 ppm: Parts per million

 ppb: Parts per billion
 %: Percentage

org/100ml: Organisms per 100 millilitres NTU: Nephelometric Turbidity Units

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

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. $% \label{eq:case_eq} % \label{eq:case_eq}$

Surr - Surrogate The addition of a like compound to the analyte target and reported as percentage recovery.

DuplicateA 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.
- 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.
- $10. \ \ Duplicate \ RPD's \ are \ calculated \ from \ raw \ analytical \ data \ thus \ it \ is \ possible \ to \ have \ two \ sets \ of \ data.$

Report Number: 465878-S



Quality Control Results

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank					
Total Recoverable Hydrocarbons - 1999 NEPM Fr	actions				
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					
ВТЕХ					
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 Fr	actions				
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	1 0 0				
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	4	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	mg/kg				1 455	
Organophosphorus Pesticides (OP)						
Chlorpyrifos	mg/kg	< 0.5		0.5	Pass	
• • • • • • • • • • • • • • • • • • • •		< 0.5		0.5	Pass	
Coumaphos Demostra (total)	mg/kg					
Demeton (total)	mg/kg	< 1		1 0.5	Pass	
Diazinon	mg/kg	< 0.5		0.5	Pass	
Dichlorvos 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	į mg/ng	1 0.0		0.0	1 400	
Total Recoverable Hydrocarbons - 2013 NEPM Frac	tions					
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		. 10		40	Dana	
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	T T					
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 Frac	tions				
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			1 10 100	. 455	
Total Recoverable Hydrocarbons - 2013 NEPM Fraction	tions	Т			
Naphthalene	%	108	70-130	Pass	
TRH C6-C10	%	87	70-130	Pass	
LCS - % Recovery	, ,0	, ,,	70 130	1 433	
Polycyclic Aromatic Hydrocarbons		T			
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	
Endosulian sulphate 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	



Test	Test		Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor			%	90	70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OF	P)						
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 -	ions	1					
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	Г		%	105	70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery							
Total Recoverable Hydrocarbons -							
•				Result 1			
TRH C6-C9	S15-JI17541	NCP	%	70	70-130	Pass	
TRH C6-C9 TRH C10-C14			% %		70-130 70-130	Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery	S15-JI17541	NCP		70 100			
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX	S15-JI17541 S15-JI18174	NCP CP	%	70 100 Result 1	70-130	Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene	\$15-JI17541 \$15-JI18174 \$15-JI17541	NCP CP	%	70 100 Result 1 80	70-130 70-130	Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541	NCP CP NCP	% % %	70 100 Result 1 80 79	70-130 70-130 70-130	Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP	% % %	70 100 Result 1 80 79 78	70-130 70-130 70-130 70-130	Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP	% % % %	70 100 Result 1 80 79 78 82	70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP	% % % % %	70 100 Result 1 80 79 78 82 81	70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP	% % % %	70 100 Result 1 80 79 78 82	70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP	% % % % %	70 100 Result 1 80 79 78 82 81 82	70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons -	\$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1	70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP NCP NCP N	% % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10	\$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP NCP NCP	% % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1	70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP NCP NCP N	% % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP NCP NCP N	% % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI20692 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP NCP CP	% % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI20692 \$15-JI20692 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP CP CP	% % % % % % %	70 100 Result 1 80 79 78 82 81 82 81 82 Result 1 100 75 Result 1 88 86	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene Anthracene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI20692 \$15-JI20692 \$15-JI17541	NCP CP NCP NCP NCP NCP NCP NCP CP CP	% % % % % % % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88 86 91	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI20692 \$15-JI20692 \$15-JI18174 \$15-JI18174 \$15-JI18174	NCP CP NCP NCP NCP NCP NCP NCP CP CP CP	% % % % % % % % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88 86 91 101	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene Benzo(a)pyrene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI20692 \$15-JI20692 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174	NCP CP NCP NCP NCP NCP NCP NCP CP CP CP CP	% % % % % % % % % % % % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88 86 91 101 89	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene Benzo(a)pyrene Benzo(b&j)fluoranthene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$2013 NEPM Fract \$15-JI20692 \$15-JI17541 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174	NCP CP NCP NCP NCP NCP NCP CP CP CP CP CP CP	% % % % % % % % % % % % % % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88 86 91 101 89 86	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene Anthracene Benzo(a)pyrene Benzo(g.h.i)perylene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$2013 NEPM Fract \$15-JI20692 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174	NCP CP NCP NCP NCP NCP NCP CP CP CP CP CP CP CP	% % % % % % % % % % % % % % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88 86 91 101 89 86 70	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylenes Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons - Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbons Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene Benzo(b&j)fluoranthene	\$15-JI17541 \$15-JI18174 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$15-JI17541 \$2013 NEPM Fract \$15-JI20692 \$15-JI17541 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174 \$15-JI18174	NCP CP NCP NCP NCP NCP NCP CP CP CP CP CP CP	% % % % % % % % % % % % % % % % % % %	70 100 Result 1 80 79 78 82 81 82 Result 1 100 75 Result 1 88 86 91 101 89 86	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	



Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	S15-JI18174	СР	%	76	70-130	Pass	
Fluoranthene	S15-JI18174	СР	%	94	70-130	Pass	
Fluorene	S15-JI18174	СР	%	85	70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-JI18174	СР	%	74	70-130	Pass	
Naphthalene	S15-JI18174	СР	%	86	70-130	Pass	
Phenanthrene	S15-JI18174	СР	%	87	70-130	Pass	
Pyrene	S15-JI18174	СР	%	96	70-130	Pass	
Spike - % Recovery				,			
Organochlorine Pesticides				Result 1			
Chlordanes - Total	S15-JI20953	NCP	%	89	70-130	Pass	
4.4'-DDD	S15-JI20953	NCP	%	129	70-130	Pass	
4.4'-DDE	S15-JI20953	NCP	%	94	70-130	Pass	
4.4'-DDT	S15-JI20953	NCP	%	85	70-130	Pass	
a-BHC	S15-JI20953	NCP	%	92	70-130	Pass	
Aldrin	S15-JI20953	NCP	%	92	70-130	Pass	
b-BHC	S15-JI20953	NCP	%	90	70-130	Pass	
d-BHC	S15-JI20953	NCP	%	92	70-130	Pass	
Dieldrin		NCP		107	70-130		
	S15-JI20953	NCP	%	87	70-130	Pass	
Endosulfan I	S15-JI20953		%			Pass	
Endosulfan II	S15-JI20953	NCP	%	116	70-130	Pass	
Endosulfan sulphate	S15-JI20953	NCP	%	97	70-130	Pass	
Endrin	S15-JI20953	NCP	%	108	70-130	Pass	
Endrin aldehyde	S15-JI20953	NCP	%	106	70-130	Pass	
Endrin ketone	S15-JI20953	NCP	%	112	70-130	Pass	
g-BHC (Lindane)	S15-JI20953	NCP	%	94	70-130	Pass	
Heptachlor	S15-JI20953	NCP	%	87	70-130	Pass	
Heptachlor epoxide	S15-JI20953	NCP	%	89	70-130	Pass	
Methoxychlor	S15-JI20953	NCP	%	127	70-130	Pass	
Spike - % Recovery				1		T	
Organophosphorus Pesticides (ı		Result 1			
Chlorpyrifos	S15-JI18651	NCP	%	97	70-130	Pass	
Dimethoate	S15-JI18651	NCP	%	101	70-130	Pass	
Disulfoton	S15-JI18651	NCP	%	113	70-130	Pass	
Methyl azinphos	S15-JI18651	NCP	%	72	70-130	Pass	
Methyl parathion	S15-JI18651	NCP	%	90	70-130	Pass	
Parathion	S15-JI18651	NCP	%	103	70-130	Pass	
Phorate	S15-JI18651	NCP	%	100	70-130	Pass	
Spike - % Recovery							
Total Recoverable Hydrocarbons	s - 2013 NEPM Fract	ions		Result 1			
TRH >C10-C16	S15-JI18174	CP	%	126	70-130	Pass	
Spike - % Recovery							
Heavy Metals				Result 1			
Arsenic	S15-JI16955	NCP	%	99	70-130	Pass	
Cadmium	S15-JI16955	NCP	%	105	70-130	Pass	
Chromium	S15-JI16955	NCP	%	93	70-130	Pass	
Copper	S15-JI16955	NCP	%	101	70-130	Pass	
Lead	S15-JI17047	NCP	%	96	70-130	Pass	
Mercury	S15-JI16955	NCP	%	78	70-130	Pass	
Nickel	S15-JI16955	NCP	%	98	70-130	Pass	
Zinc	S15-JI20926	NCP	%	96	70-130	Pass	
Spike - % Recovery							
				Result 1			
Chloride	S15-Jl21491	NCP	%	103	70-130	Pass	
					, , , , , , ,	,	1



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons	s - 1999 NEPM Fract	ions		Result 1	Result 2	RPD			
TRH C6-C9	S15-JI17539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-JI18769	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-JI18769	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-JI18769	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate							·		
ВТЕХ				Result 1	Result 2	RPD			
Benzene	S15-JI17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-JI17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-JI17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-JI17539	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-JI17539	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-JI17539	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons	s - 2013 NEPM Fract	ions		Result 1	Result 2	RPD			
Naphthalene	S15-JI17539	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-JI17539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-JI17539	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate	1 010 0111000	1101	mg/ng	120	120		1 0070	1 400	
Polycyclic Aromatic Hydrocarbo	ns			Result 1	Result 2	RPD			
Acenaphthene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
, ,	S15-JI18772	NCP		< 0.5		<1	30%	Pass	
Benzo(g.h.i)perylene		NCP	mg/kg		< 0.5		30%		
Benzo(k)fluoranthene	S15-JI18772		mg/kg	< 0.5	< 0.5	<1		Pass	
Chrysene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S15-JI18772	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate				T			T		
Organochlorine Pesticides	0.5 1100050			Result 1	Result 2	RPD		_	
Chlordanes - Total	S15-Jl20952	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	-
a-BHC	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S15-JI20952	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-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	1



Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
g-BHC (Lindane)	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S15-JI20952	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S15-JI20952	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S15-JI20952	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate							<u>'</u>		
Organophosphorus Pesticides (Ol	P)			Result 1	Result 2	RPD			
Chlorpyrifos	S15-JI18174	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S15-JI18645	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S15-JI18645	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S15-JI18174	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S15-JI18645	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate Total Recoverable Hydrocarbons -	2012 NEDM Front	iono		Result 1	Result 2	RPD			
TRH >C10-C16	S15-JI18769	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S15-3/16769	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S15-JI18769	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate	1 010 0110700	1101	i iig/kg	<u> </u>	V 100		0070	1 433	
Dapinouto				Result 1	Result 2	RPD		T	
% Moisture	S15-My20808	NCP	%	19	18	4.0	30%	Pass	
Duplicate					_				
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S15-JI16947	NCP	mg/kg	2.9	3.1	7.0	30%	Pass	
Cadmium	S15-JI16947	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-JI16947	NCP	mg/kg	24	24	1.0	30%	Pass	
Copper	S15-JI16947	NCP	mg/kg	23	20	18	30%	Pass	
Lead	S15-JI16947	NCP	mg/kg	52	48	8.0	30%	Pass	
Mercury	S15-JI16947	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S15-JI16947	NCP	mg/kg	13	9.7	28	30%	Pass	
Zinc	S15-JI16947	NCP	mg/kg	120	100	20	30%	Pass	
Duplicate									
		1	T	Result 1	Result 2	RPD			
Chloride	S15-JI18175	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Conductivity (1:5 aqueous extract	M15 147740	NCD	11C/am	26	20	10	200/	Dean	
at 25°C)	M15-JI17713	NCP CP	uS/cm	36	30	19	30%	Pass	
pH (1:5 Aqueous extract) Sulphate (as SO4)	S15-JI18175 S15-JI18175	CP	pH Units	8.1	8.1 38	pass	30% 30%	Pass Pass	
Suipriale (as SO4)	010-01101/0	L CP	mg/kg	37	J 36	3.0	30%	r dSS	



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

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).

N01

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.

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. N04

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 N07

Authorised By

N02

Charl Du Preez Analytical Services Manager **Bob Symons** Senior Analyst-Asbestos (NSW) Bob Symons Senior Analyst-Inorganic (NSW) Emily Rosenberg Senior Analyst-Metal (VIC) Senior Analyst-Inorganic (VIC) Huona Le Ivan Taylor Senior Analyst-Metal (NSW) Rvan 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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Report Number: 465878-S



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 asbestoscontaining 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.







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.

Project Name UNSW

Project ID GEOTLCOV24080AS

Date SampledJul 13, 2015Report465878-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
BH3_0.1-0.2	15-Jl18174	Jul 13, 2015		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.

DescriptionTesting SiteExtractedHolding TimeAsbestos - LTM-ASB-8020SydneyJul 22, 2015Indefinite



GEOTLCOV24080AS

Address:

Project ID:

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 Order No.: Received: Jul 20, 2015 4:34 PM

Level 18, Tower B, Citadel Tower 799 Pacific Highway

Report #: 465878

Due: Jul 27, 2015

Phone: +61 2 9406 1000

Priority: 5 Day

 Chatswood
 Phone:
 +61 2 9406 1000
 Priority:
 5 Day

 NSW 2067
 Fax:
 +61 2 9406 1002
 Contact Name:
 Priya Dass

Project Name: UNSW

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 wh	ere analysis is co	onducted											
Melbourne Lak	ooratory - NATA S	Site # 1254 & 14	271				Х					Х	
Sydney Labora	atory - NATA Site	# 18217			X	Х		Х	Х	Х	Х	Χ	Х
Brisbane Labo	ratory - NATA Si	te # 20794											
External Labor	ratory												
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
BH3_0.1-0.2	Jul 13, 2015		Soil	S15-JI18174	X			Х		Х	Х		Х
BH3_0.5-0.6	Jul 13, 2015		Soil	S15-JI18175			Х	Х	Х		Х	Χ	Х
BH3_1.0	Jul 13, 2015		Soil	S15-JI18176		Х							
BH3_2.5	Jul 13, 2015		Soil	S15-JI18177				Х			Х		Х
BH3_(2.5)	Jul 13, 2015		Soil	S15-JI18178		Х							
BH3_5.5-5.9	Jul 13, 2015		Soil	S15-JI18179		Х							



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

ΑF

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.

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 substantial 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)

lift the

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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Page 1 of 2

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ABN - 50 005 085 521 e.mail: EnviroSales@eurofins.com.au

web: www.eurofins.com.au

Melbourne 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

Coffey Geotechnics Pty Ltd Chatswood Company name:

Contact name: Matthew Locke Project name: MSB UNSW

Project ID: GEOTLCOV24080AS

COC number: Not provided

Turn around time: 5 Day

Jul 30, 2015 11:32 AM Date/Time received:

Eurofins | mgt reference: 466918

Sample information

- \mathbf{V} A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- \mathbf{V} Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt: 10.6 degrees Celsius.
- \mathbf{V} All samples have been received as described on the above COC.
- \square COC has been completed correctly.
- **7** Attempt to chill was evident.
- \mathbf{V} Appropriately preserved sample containers have been used.
- \square All samples were received in good condition.
- \square Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- \mathbf{V} Appropriate sample containers have been used.
- \boxtimes Some samples have been subcontracted.
- Custody Seals intact (if used). N/A

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.



Environmental Laboratory Soil Contamination Analysis

NATA Accreditation Stack Emission Sampling & Analysis Trade Waste Sampling & Analysis Groundwater Sampling & Analysis





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

Eurofins | mgt Client Manager: Charl Du Preez

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 Report #: 466918 Due: Aug 6, 2015

 Chatswood
 Phone:
 +61 2 9406 1000
 Priority:
 5 Day

 NSW 2067
 Fax:
 +61 2 9406 1002
 Contact Name:
 Matthew Lock

NSW 2067 Fax: +61 2 9406 1002 Contact Name: Matthew Locke

Project Name: MSB UNSW

Project ID: GEOTLCOV24080AS

		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
•	ere analysis is co		1074				X						V	
	oratory - NATA Site		12 <i>1</i> 1		Х	Х			Х	Х	_	_	X	
	atory - NATA Site				^			Х	^		X	Х	^	Х
External Labor	ratory - NATA Si	te # 20794												
Sample ID	Sample Date	Sampling	Matrix	LAB ID										
oumpie ib	Campie Bate	Time	Matrix	LABIB										
BH04 7.0-7.5	Jul 17, 2015		Soil	S15-JI25721				Х				Х		Χ
BH04 2.5-2.95	Jul 17, 2015		Soil	S15-Jl25722		Х								
BH01 8.5-8.95	Jul 22, 2015		Soil	S15-JI25723			Х	Х	Х			Х	Х	Χ
BH01 1.0-1.45	Jul 22, 2015		Soil	S15-Jl25724		Х								
BH02 0.1-0.2	Jul 21, 2015		Soil	S15-JI25725	Х			Х			Х	Х		Χ
BH02 5.5-5.95	Jul 21, 2015		Soil	S15-JI25726			Х	Х	Х			Х	Х	Χ
BH02 2.5-2.95	Jul 21, 2015		Soil	S15-Jl25727		Х								
BH01 2.5-2.95	Jul 22, 2015		Soil	S15-JI25728		Х								
BH01 0.1-0.2	Jul 22, 2015		Soil	S15-JI25729	Х					Χ	Χ	Χ		Χ



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

Received:

Priority:

Due:

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

Coffey Geotechnics Pty Ltd Chatswood

Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway

Chatswood

NSW 2067

Project Name: MSB UNSW

Company Name:

Project ID: GEOTLCOV24080AS Order No.: Report #:

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

466918

web : www.eurofins.com.au

Phone: +61 2 9406 1000 Fax:

Contact Name: +61 2 9406 1002

Eurofins | mgt Client Manager: Charl Du Preez

Aug 6, 2015

Matthew Locke

5 Day

Jul 30, 2015 11:32 AM

		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 wh	ere analysis is co	onducted												
Melbourne Lal	boratory - NATA S	Site # 1254 & 14	271				Х						Χ	
Sydney Labora	atory - NATA Site	# 18217			Х	Х		Х	Х	Χ	Х	Х	Х	Х
Brisbane Labo	oratory - NATA Si	te # 20794												
External Labo	ratory													
BH01 1.0	Jul 22, 2015		Soil	S15-JI25730		Х								
BH02 1.0	Jul 21, 2015		Soil	S15-JI25731		Х								
BH02 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25732						Х		Х		Χ
BH04 1.5-1.6	Jul 17, 2015		Soil	S15-Jl25733		Х								
BH04 0.2-0.3	Jul 17, 2015		Soil	S15-Jl25734	Х					Х		Х		Χ
BH06 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25735				Χ				Х		Χ
BH04 1.0	Jul 17, 2015		Soil	S15-Jl25736						Х		Х		Χ
BH01 0.5-0.6	Jul 22, 2015		Soil	S15-Jl25737						Х		Х		Χ
BH06 1.0	Jul 21, 2015		Soil	S15-Jl25738		Χ								
BH05 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25739				Х				Х		Χ



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

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Brisbane I/21 Smallwood Place
Murarrie QLD 4172
Phone: +61 7 3902 4600
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Report #:

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466918

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.: 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 wh	ere analysis is c	onducted												
Melbourne Lab	ooratory - NATA	Site # 1254 & 142	271				Х						Х	
Sydney Labora	atory - NATA Site	# 18217			Х	Х		Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	te # 20794												
External Labor	ratory													
BH05 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25740				Х				Х		Χ
BH05 1.0	Jul 21, 2015		Soil	S15-Jl25741				Х				Х		Х
BH06 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25742				Х				Х		Х
BH1 0.1-0.2 DUPLICATE	Jul 17, 2015		Soil	S15-Jl25838		Х								



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





Certificate of Analysis

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-JI25721	S15-JI25723	S15-JI25725	S15-JI25726
Date Sampled			Jul 17, 2015	Jul 22, 2015	Jul 21, 2015	Jul 21, 2015
Test/Reference	LOR	Unit	Jul 17, 2010	Gui 22, 2010	Jul 21, 2010	00121, 2010
Total Recoverable Hydrocarbons - 1999 NEPM F		Utill				
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	30	IIIg/kg	< 50	< 50	< 50	< 30
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	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.2	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 F		70	104	7-7	70	
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		, <u>J</u>				
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-JI25721	S15-JI25723	S15-JI25725	S15-JI25726
Date Sampled			Jul 17, 2015	Jul 22, 2015	Jul 21, 2015	Jul 21, 2015
Test/Reference	LOR	Linit	Jul 17, 2013	Jul 22, 2013	Jul 21, 2013	oui 21, 2013
	LOR	Unit				
Polycyclic Aromatic Hydrocarbons	0.5		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	%	106	119	115	108
p-Terphenyl-d14 (surr.)	1	%	110	121	117	105
Organochlorine Pesticides		1				
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	-
Mercaretenhaa	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos Parathion	0.5	mg/kg	-	-	< 10	-
	1 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-JI25721	S15-JI25723	S15-JI25725	S15-JI25726
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 Fra	ctions					
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 Sample Matrix Eurofins mgt Sample No.			BH01 0.1-0.2 Soil S15-JI25729	BH02 0.5-0.6 Soil S15-JI25732	BH04 0.2-0.3 Soil S15-JI25734	BH06 0.1-0.2 Soil S15-JI25735
Date Sampled			Jul 22, 2015	Jul 21, 2015	Jul 17, 2015	Jul 21, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
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-JI25729	S15-JI25732	S15-JI25734	S15-JI25735
Date Sampled			Jul 22, 2015	Jul 21, 2015	Jul 17, 2015	Jul 21, 2015
•	LOB	Linit	Jul 22, 2013	Jul 21, 2013	Jul 17, 2013	Jul 21, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPN Naphthalene ^{N02}			.0.5	.0.5	.0.5	.0.5
TRH C6-C10	0.5 20	mg/kg	< 0.5 < 20	< 0.5 < 20	< 0.5 < 20	< 0.5 < 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C10 less BTEX (F1) TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg mg/kg	< 50	< 50	< 50	< 50
Polycyclic Aromatic Hydrocarbons	30	IIIg/kg	< 50	<u> </u>	<u> </u>	< 30
Benzo(a)pyrene TEQ (lower bound) *	0.5	ma/ka	< 0.5	< 0.5	< 0.5	105
Benzo(a)pyrene TEQ (nedium bound) *	0.5	mg/kg	0.6	0.6	0.6	< 0.5
Benzo(a)pyrene TEQ (inediam bound) *	0.5	mg/kg 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-JI25729	S15-JI25732	S15-JI25734	S15-JI25735
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 Fra	actions	,,,				
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
		19,9	1.00	1.00	1.00	1.00
% Moisture	0.1	%	6.0	7.2	23	14
Heavy Metals		,,,	0.0	1		
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-JI25729	S15-JI25732	S15-JI25734	S15-JI25735
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-JI25736	S15-JI25737	S15-JI25739	S15-JI25740
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			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-JI25736	S15-JI25737	S15-JI25739	S15-JI25740
Date Sampled			Jul 17, 2015	Jul 22, 2015	Jul 21, 2015	Jul 21, 2015
•	1.00	Linit	Jul 17, 2013	Jul 22, 2013	Jul 21, 2013	Jul 21, 2013
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons	0.5		.0.5	.0.5	0.4	.0.5
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5 0.6	< 0.5	8.1 8.1	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.2	1.2	8.1	1.2
Benzo(a)pyrene TEQ (upper bound) * 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 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 NEPI	M 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
	<u>'</u>					
% Moisture	0.1	%	8.3	7.7	7.8	11
Heavy Metals	<u> </u>					
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 Sample Matrix			BH04 1.0 Soil	BH01 0.5-0.6 Soil	BH05 0.5-0.6 Soil	BH05 0.1-0.2 Soil
Eurofins mgt Sample No.			S15-JI25736	S15-JI25737	S15-JI25739	S15-JI25740
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-JI25741	S15-JI25742
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
ВТЕХ				
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-JI25741	S15-JI25742
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)fluorantheneN07	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 NE	EPM 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			



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

Jul 30, 2015 11:32 AM

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Fax:

web : www.eurofins.com.au

P I O Z M M M Z O M

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.: Received:

Report #: 466918 Due: Aug 6, 2015 Phone: +61 2 9406 1000 Priority: 5 Day

+61 2 9406 1002 **Contact Name:** Matthew Locke

Eurofins | mgt Client Manager: Charl Du Preez

		Sample Detail			sbestos Absence /Presence	10LD	Organic Matter %	Metals M8	urofins mgt Suite B18	extended Metals Suite	urofins mgt Suite B14	Noisture Set	Cation Exchange Capacity	urofins mgt Suite B4
	ere analysis is co									-				
	oratory - NATA S		271				Χ						Χ	
	tory - NATA Site				X	Х		Х	Х	Х	Х	Х	Х	Х
	ratory - NATA Si	te # 20794												
External Labor	atory	1												
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
BH04 7.0-7.5	Jul 17, 2015		Soil	S15-Jl25721				Х				Х		Χ
BH04 2.5-2.95	Jul 17, 2015		Soil	S15-Jl25722		Х								
BH01 8.5-8.95	Jul 22, 2015		Soil	S15-Jl25723			Х	Х	Х			Х	Х	Χ
BH01 1.0-1.45	Jul 22, 2015		Soil	S15-Jl25724		Х								
BH02 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25725	Х			Х			Х	Х		Х
BH02 5.5-5.95	Jul 21, 2015		Soil	S15-Jl25726			Х	Х	Х			Х	Х	Х
BH02 2.5-2.95	Jul 21, 2015		Soil	S15-Jl25727		Х								
BH01 2.5-2.95	Jul 22, 2015		Soil	S15-Jl25728		Х								
BH01 0.1-0.2	Jul 22, 2015		Soil	S15-Jl25729	Х					Х	Х	Х		Х

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN: 50 005 085 521 Telephone: +61 2 9900 8400 Facsimile: +61 2 9420 2977

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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

web : www.eurofins.com.au

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 wh	ere analysis is c	onducted												
Melbourne Lak	ooratory - NATA	Site # 1254 & 14	271				Х						Х	
Sydney Labora	atory - NATA Site	# 18217			Х	Х		Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794												
External Labor	ratory													
BH01 1.0	Jul 22, 2015		Soil	S15-JI25730		Х								
BH02 1.0	Jul 21, 2015		Soil	S15-Jl25731		Х								
BH02 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25732						Х		Χ		Х
BH04 1.5-1.6	Jul 17, 2015		Soil	S15-Jl25733		Х								
BH04 0.2-0.3	Jul 17, 2015		Soil	S15-Jl25734	Х					Х		Х		Х
BH06 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25735				Χ				Χ		Х
BH04 1.0	Jul 17, 2015		Soil	S15-Jl25736						Х		Χ		Х
BH01 0.5-0.6	Jul 22, 2015		Soil	S15-Jl25737						Х		Χ		Х
BH06 1.0	Jul 21, 2015		Soil	S15-Jl25738		Χ								
BH05 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25739				Х				Χ		Χ



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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Report #:

Phone:

Fax:

web : www.eurofins.com.au

+61 2 9406 1000

+61 2 9406 1002

466918

Company Name: Coffey Geotechnics Pty Ltd Chatswood

Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway

Chatswood

NSW 2067

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Laboratory wh	ere analysis is c	onducted												
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271				Χ						Х	
Sydney Labora	atory - NATA Site	# 18217			Х	Х		Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794												
External Labor	atory													
BH05 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25740				Х				Х		Х
BH05 1.0	Jul 21, 2015		Soil	S15-Jl25741				Х				Х		Х
BH06 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25742				Х				Х		Х
BH1 0.1-0.2 DUPLICATE	Jul 17, 2015		Soil	S15-JI25838		Х								



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
 mg/l: milligrams per litre

 ug/l: micrograms per litre
 ppm: Parts per million

 ppb: Parts per billion
 %: Percentage

org/100ml: Organisms per 100 millilitres NTU: Nephelometric Turbidity Units

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

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.

DuplicateA 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.
- 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.
- $10. \ \ Duplicate \ RPD's \ are \ calculated \ from \ raw \ analytical \ data \ thus \ it \ is \ possible \ to \ have \ two \ sets \ of \ data.$

Report Number: 466918-S



Quality Control Results

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank					
Total Recoverable Hydrocarbons - 1999 NEPM Frac	tions				
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					
ВТЕХ					
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 Frac	tions				
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	<u> </u>				
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	193			1 333	
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 Endrin	mg/kg	< 0.05	0.05	Pass	



Test	Units	Result 1	Acceptano Limits	e 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	1 0 0	•			
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		< 0.5	0.5	Pass	
	mg/kg				
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				<u> </u>	
Total Recoverable Hydrocarbons - 2013 NEPM Frac					
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	<u> </u>			<u> </u>	
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					<u> </u>
Ion Exchange Properties	1				
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		< 10	10	Pass	
	mg/kg				
Uranium	mg/kg	<1	1 10	Pass	
Vanadium	mg/kg	< 10	10	Pass	
Zinc	mg/kg	< 5	5	Pass	
Method Blank		T T		I	
Alkali Metals	1			_	
Calcium	mg/kg	< 1	1	Pass	
Magnesium	mg/kg	< 1	1	Pass	
Potassium	mg/kg	< 1	1	Pass	
Sodium	mg/kg	< 1		Pass	
Method Blank				T	
Extended Metals Suite	1				
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		
	70	110	70-130	Pass	
LCS - % Recovery		Τ		I	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	0/	110	70.400	Desa	
Naphthalene TRU Cs C40	%	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	



T	Unito	Result 1	Acceptance	Pass	Qualifying
Test	Units	Result 1	Limits	Limits	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	/0	104	70-130	1 033	
Organophosphorus Pesticides (OP)					
Chlorpyrifos	%	103	70-130	Pass	
Dimethoate	%	103	70-130	Pass	
	%		70-130		
Disulfoton Methyl exisphes		103		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		1			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	0/	00	70.400	D	
TRH >C10-C16	%	96	70-130	Pass	
LCS - % Recovery	0/	00	70.400	Date	
Chloride	%	99	70-130	Pass	
Sulphate (as SO4)	%	100	70-130	Pass	
LCS - % Recovery					
Heavy Metals	0,	07	70.400	D	
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			/0		70-100	1 433	
Alkali Metals				Т			
Calcium			%	110	70-130	Pass	
Magnesium			%	109	70-130	Pass	
U			%		70-130	Pass	
Potassium				113			
Sodium			%	105	70-130	Pass	
LCS - % Recovery				Т			
Extended Metals Suite			0/	440	70.400	D	
Phosphorus			%	116	70-130	Pass	
Silicon			%	111	70-130	Pass	
Sulphur	<u> </u>		%	100	70-130	Pass	0 117 1
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery						Lilling	Code
Spike - 16 Recovery						Lillies	Code
Total Recoverable Hydrocarbons	- 1999 NEPM Fract			Result 1		Lillito	Code
•	- 1999 NEPM Frac		%	Result 1	70-130	Pass	Code
Total Recoverable Hydrocarbons		tions	% %				Code
Total Recoverable Hydrocarbons TRH C6-C9	S15-Jl25172	tions NCP		90	70-130	Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14	S15-Jl25172	tions NCP		90	70-130	Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery	S15-Jl25172	tions NCP		90 87	70-130	Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX	\$15-JI25172 \$15-JI25931	NCP NCP	%	90 87 Result 1	70-130 70-130	Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene	\$15-JI25172 \$15-JI25931 \$15-JI25172	NCP NCP	%	90 87 Result 1 89	70-130 70-130 70-130	Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172	NCP NCP NCP NCP	% % %	90 87 Result 1 89 87	70-130 70-130 70-130 70-130	Pass Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP NCP NCP NCP NCP NCP	% % %	90 87 Result 1 89 87 95	70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP NCP NCP NCP NCP NCP NCP	% % % %	90 87 Result 1 89 87 95 98	70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP NCP NCP NCP NCP NCP NCP NCP	% % % % %	90 87 Result 1 89 87 95 98 102	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % %	90 87 Result 1 89 87 95 98 102	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % %	90 87 Result 1 89 87 95 98 102 99	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	Code
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % % %	90 87 Result 1 89 87 95 98 102 99	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % % %	90 87 Result 1 89 87 95 98 102 99	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery	\$15-JI25172 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81	70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbon	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbon Acenaphthene	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbon Acenaphthene Acenaphthylene	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172	NCP	% % % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81 Result 1 99 97	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbon Acenaphthene Acenaphthylene Anthracene	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25721 \$15-JI25721 \$15-JI25721	NCP	% % % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81 Result 1 99 97	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbon Acenaphthene Acenaphthylene Anthracene Benz(a)anthracene	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25721 \$15-JI25721 \$15-JI25721 \$15-JI25721 \$15-JI25721	NCP NCP NCP NCP NCP NCP NCP NCP NCP CP CP CP	% % % % % % % % % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81 Result 1 99 97	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	
Total Recoverable Hydrocarbons TRH C6-C9 TRH C10-C14 Spike - % Recovery BTEX Benzene Toluene Ethylbenzene m&p-Xylenes o-Xylene Xylenes - Total Spike - % Recovery Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 Spike - % Recovery Polycyclic Aromatic Hydrocarbon Acenaphthene Acenaphthylene Anthracene	\$15-JI25172 \$15-JI25931 \$15-JI25931 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25172 \$15-JI25721 \$15-JI25721 \$15-JI25721	NCP	% % % % % % %	90 87 Result 1 89 87 95 98 102 99 Result 1 128 81 Result 1 99 97	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	Pass Pass Pass Pass Pass Pass Pass Pass	



T	Lab Camarla ID	QA	11-24-	D!! 4		Acceptance	Pass	Qualifying
Test	Lab Sample ID	Source	Units	Result 1		Limits	Limits	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 Fract	ions		Result 1				
TRH >C10-C16	S15-Jl25931	NCP	%	92		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Copper	S15-JI25890	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-JI27111	NCP	%	100		70-130	Pass	
a-BHC	S15-JI27111	NCP	%	98		70-130	Pass	
Aldrin	S15-JI27111	NCP	%	100		70-130	Pass	
b-BHC	S15-JI27111	NCP	%	96		70-130	Pass	
d-BHC	S15-JI27111	NCP	%	108		70-130	Pass	
Dieldrin	S15-JI27111	NCP	%	99		70-130	Pass	
Endosulfan I	S15-JI27111	NCP	%	100		70-130	Pass	
Endosulfan II	S15-JI27111	NCP	%	100		70-130	Pass	
Endosulfan sulphate	S15-JI27111	NCP	%	104		70-130	Pass	
Endrin	S15-JI27111	NCP	%	97		70-130	Pass	
Endrin aldehyde	S15-3I27111	NCP	%	93		70-130	Pass	
Endrin ketone	S15-3I27111	NCP	%	102		70-130	Pass	
g-BHC (Lindane)	S15-3I27111	NCP	%	102		70-130	Pass	
Heptachlor	S15-JI27111	NCP	%	98		70-130	Pass	
Heptachlor epoxide		NCP	%	98		70-130	Pass	
	S15-JI27111							
Methoxychlor	S15-Jl27111	NCP	%	92		70-130	Pass	
Spike - % Recovery	\D\			Decult 4				
Organophosphorus Pesticides (C		NOD	0/	Result 1		70.400	D	
Chlorpyrifos	S15-JI27112	NCP	%	95		70-130	Pass	
Dimethoate	S15-JI27112	NCP	%	101		70-130	Pass	
Disulfoton	S15-JI27112	NCP	%	126		70-130	Pass	
Methyl azinphos	S15-JI27112	NCP	%	92		70-130	Pass	
Methyl parathion	S15-JI27112	NCP	%	94		70-130	Pass	
Parathion	S15-JI27112	NCP	%	95		70-130	Pass	
Phorate	S15-Jl27112	NCP	%	103		70-130	Pass	
Spike - % Recovery				T _				
Heavy Metals	1 -			Result 1			_	
Manganese	S15-JI25890	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	
	S15-Jl25735	CP	%	95	1 1	70-130	Pass	1



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-JI25735	CP	%	104			70-130	Pass	
Cadmium	S15-JI25735	CP	%	104			70-130	Pass	
Chromium	S15-JI25735	СР	%	105			70-130	Pass	
Cobalt	S15-JI25735	СР	%	87			70-130	Pass	
Lead	S15-Jl25735	СР	%	108			70-130	Pass	
Mercury	S15-JI25735	СР	%	113			70-130	Pass	
Molybdenum	S15-JI25735	СР	%	70			70-130	Pass	
Nickel	S15-JI25735	СР	%	74			70-130	Pass	
Selenium	S15-Jl25735	СР	%	99			70-130	Pass	
Silver	S15-Jl25735	СР	%	89			70-130	Pass	
Thallium	S15-Jl25735	СР	%	88			70-130	Pass	
Uranium	S15-Jl25735	СР	%	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-JI25735	CP	%	78			70-130	Pass	
Potassium	S15-JI25735	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				1					
				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-JI24046	NCP	mg/kg	120	120	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons	1999 NEPM Fract	ions		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		1		Result 1	Result 2	RPD			
Chlordanes - Total	B15-JI26040	NCP	mg/kg	**	< 0.1	<1	30%	Pass	
4.4'-DDD	B15-JI26040	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-JI26040	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-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin	B15-Jl26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin aldehyde	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin ketone	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
g-BHC (Lindane) Heptachlor	B15-Jl26040 B15-Jl26040	NCP NCP	mg/kg	**	< 0.05	<1	30%	Pass	
	- D44 HOCO 40	NCD	mg/kg	**	< 0.05	<1	30%	Pass	ı



Duplicate				ı			I		
Organochlorine Pesticides		1	I	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				l	I I		l		
Organophosphorus Pesticides	`		1	Result 1	Result 2	RPD		<u> </u>	
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-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S15-JI26280	NCP NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion Fensulfothion	S15-JI26280		mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensuliotnion	S15-JI26280	NCP NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S15-Jl26280 S15-Jl26280	NCP	mg/kg	< 0.5 < 0.5	< 0.5 < 0.5	<1 <1	30%	Pass Pass	
Malathion	S15-JI26280	NCP	mg/kg mg/kg	< 0.5	< 0.5	<u> </u>	30%	Pass	
Methyl parathion	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<u><1</u>	30%	Pass	
Mevinphos	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S15-JI26280	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S15-JI26280	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	0.00.2020		199	1 0.0	1 0.0	**	3070	1 400	
Total Recoverable Hydrocarbor	s - 2013 NEPM Fract	ions		Result 1	Result 2	RPD		T	
TRH >C10-C16	S15-Jl25725	СР	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	СР	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-JI25734	CP	mg/kg	21	35	49	30%	Fail	Q15
Duplicate									
Extended Metals Suite				Result 1	Result 2	RPD			
Phosphorus	S15-Jl25734	СР	mg/kg	74	70	5.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons -	1999 NEPM Fract	ions		Result 1	Result 2	RPD			
TRH C6-C9	S15-JI25735	СР	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-JI25735	СР	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-JI25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-JI25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-JI25735	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-JI25735	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-JI25735	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate							2272	1 1111	
Total Recoverable Hydrocarbons -	2013 NEPM Fract	ions		Result 1	Result 2	RPD			
Naphthalene	S15-JI25735	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-JI25735	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-JI25735	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate	0100120100	<u> </u>	i iiig/iig	120	120		3070	1 400	
Alkali Metals				Result 1	Result 2	RPD		T	
Calcium	S15-JI26988	NCP	mg/kg	4300	4100	5.0	30%	Pass	
Potassium	S15-JI26988	NCP	mg/kg	1700	1800	8.0	30%	Pass	
Duplicate	013-0120300	1101	i iig/kg	1700	1000	0.0	3070	1 433	
Extended Metals Suite				Result 1	Result 2	RPD			
Sulphur	S15-JI26988	NCP	mg/kg	5500	6700	19	30%	Pass	
Duplicate	013-0120300	1101	i iig/kg	3300	0700	13	3070	1 433	
Polycyclic Aromatic Hydrocarbons	•			Result 1	Result 2	RPD			
Acenaphthene	S15-JI25737	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S15-JI25737	CP		< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene Benzo(b&i)fluoranthene	\$15-JI25737 \$15-JI25737	CP	mg/kg		< 0.5	<1	30%	Pass	
, <i>u</i>		CP	mg/kg	< 0.5	1				
Benzo(g.h.i)perylene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene Dibonz(a b)anthracona	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S15-JI25737		mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S15-JI25737	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S15-JI25737	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

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).

N01

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.

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. N04

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 N07

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

N02

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

Eurofins. Impt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins I mgt be liable for consequential changes including, but not limited to, lost profits, damages for relative to meet declarities and other production arising from this report. This document shall be reported used except in full and retrietates only to the letters tested. Unless indicated otherwise, the tests were performed on the samples as received.

Report Number: 466918-S



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 asbestoscontaining 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.







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.

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.

Report Number: 466918-AID



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.

DescriptionTesting SiteExtractedHolding TimeAsbestos - LTM-ASB-8020SydneyJul 31, 2015Indefinite



MSB UNSW

Address:

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 Order No.: Received: Jul 30, 2015 11:32 AM

> Level 18, Tower B, Citadel Tower 799 Pacific Highway Report #: 466918 Due: Aug 6, 2015 Chatswood Phone: +61 2 9406 1000 Priority: 5 Day

NSW 2067 Fax: +61 2 9406 1002 **Contact Name:** Matthew Locke

Project Name:

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 wh	ere analysis is c	onducted												
Melbourne Lab	oratory - NATA	Site # 1254 & 14	1271				Х		Х			Х	Х	
Sydney Labora	atory - NATA Site	# 18217			Х	Х		Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794												
External Labor	atory													
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
BH04 7.0-7.5	Jul 17, 2015		Soil	S15-Jl25721				Х				Х		Χ
BH04 2.5-2.95	Jul 17, 2015		Soil	S15-Jl25722		Х								
BH01 8.5-8.95	Jul 22, 2015		Soil	S15-Jl25723			Х	Х	Х			Х	Х	Х
BH01 1.0-1.45	Jul 22, 2015		Soil	S15-Jl25724		Х								
BH02 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25725	Х			Х			Х	Х		Х
BH02 5.5-5.95	Jul 21, 2015		Soil	S15-Jl25726			Х	Х	Х			Х	Х	Х
BH02 2.5-2.95	Jul 21, 2015		Soil	S15-Jl25727		Х								
BH01 2.5-2.95	Jul 22, 2015		Soil	S15-Jl25728		Х								
BH01 0.1-0.2	Jul 22, 2015		Soil	S15-Jl25729	Х					Х	Х	Х		Χ



Address:

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
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NATA # 1261 Site # 20794

Company Name: Coffey Geotechnics Pty Ltd Chatswood Order No.: Received: Jul 30, 2015 11:32 AM

Level 18, Tower B, Citadel Tower 799 Pacific Highway Report #: 466918 Due: Aug 6, 2015

 Chatswood
 Phone:
 +61 2 9406 1000
 Priority:
 5 Day

NSW 2067 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 wh	ere analysis is co	onducted												
Melbourne Lak	oratory - NATA	Site # 1254 & 142	271				Х		Х			Х	Х	
Sydney Labora	atory - NATA Site	# 18217			X	Х		Х	Х	Х	Х	Х	Χ	Х
	ratory - NATA Si	te # 20794												
External Labor	ratory													
BH01 1.0	Jul 22, 2015		Soil	S15-JI25730		Х								
BH02 1.0	Jul 21, 2015		Soil	S15-JI25731		Х								
BH02 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25732						Х		Х		Х
BH04 1.5-1.6	Jul 17, 2015		Soil	S15-Jl25733		Х								
BH04 0.2-0.3	Jul 17, 2015		Soil	S15-Jl25734	Х					Х		Х		Х
BH06 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25735				Χ				Х		Х
BH04 1.0	Jul 17, 2015		Soil	S15-Jl25736						Х		Х		Χ
BH01 0.5-0.6	Jul 22, 2015		Soil	S15-Jl25737						Х		Х		Х
BH06 1.0	Jul 21, 2015		Soil	S15-Jl25738		Χ								
BH05 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25739				Х				Х		Χ



MSB UNSW

Address:

Project Name:

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

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 Contact Name:
 Matthew Locke

NSW 2067 Fax: +61 2 9406 1002 Contact Name: Matthew Locke

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 wh	ere analysis is c	onducted												
Melbourne Lab	ooratory - NATA	Site # 1254 & 14	271				Х		Х			Х	Х	
Sydney Labora	atory - NATA Site	# 18217			Х	Х		Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794												
External Labor	ratory													
BH05 0.1-0.2	Jul 21, 2015		Soil	S15-Jl25740				Х				Х		Х
BH05 1.0	Jul 21, 2015		Soil	S15-Jl25741				Χ				Χ		Х
BH06 0.5-0.6	Jul 21, 2015		Soil	S15-Jl25742				Χ				Χ		Х
BH1 0.1-0.2 DUPLICATE	Jul 17, 2015		Soil	S15-JI25838		Х								



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

ΑF

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.

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 substantial 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)

Jij jan

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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Report Number: 466918-AID

Page _ 1 _ of _ 4+

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_		Invoices to	Priva Doss	Matthocke		Phone:		Email:	Holes	@coffey.co
	GEOTLCON24080AS Task	No:	-					Analysis Request S	suction wh	
Project Nan	ne: MSB UNSVV Labo	ratory: Eurof	INSMGT				1	5////	19/1	7///
Sampler's N	lame: Pri a Dass Proje	ect Manager: Pri	a Doss / M	att Locke		1	100	14/19/1	0/12/	////
Special Inst	ructions:	-	J.				182	/// ////	14/	///
Relevant agri	pements: Eurofins COF_ENAUABTF00952AA_MSA1	; ALS COF_ENAUABTI	00952AA_MSA2 and S0	S COF_ENAUABTF00	952AA_MSA3		13/3/	19374	3//	//
Lab No.	Sample ID	Sample Date	Matrix Time (Soiletc)	Container Type & Preservative*	T-A-T (specify)	1			////	NOTES
	BH7_0.22-0.32	27/7/15	Soil	1×250NI GT+	standar		111	1111		
	BH7_0.5-0.6	V.		ix ziplock bog						
	BH7A 0.22-0.32	28/7/15		Ice/bricks		V	~	V		
	8H7A_0.5-0.6			1		V				
	BH7A 1.0-1.1									
	BHTA 2-1-2-2									
	BH7A 3.0-3.1									
	BH7A 4.0-4.1									
	BH7A 5.0-5.1									
	8H7A 6.0-6.1					VV	1			
	BH7A_7.0-7.1									
	BH7A 7.9-8.0	V								
	BH8 0.4-0,5	37/1/15				~	~	VV		
	BH8_ 1.0 -1.1									
	BH8 2.0-2.1									
	BH8 3.0-3.1									
	BH8 4.0 - 4.1					1				
	BH8_5.0-5.1	V	V	V						
	RELINQUISHED BY			REC	EIVED BY				t Advice: (Lab Use	Only)
Name: Pri	yor Dass Date: 29/7/19 Time: (2:30)		Name: P L I Company: To C				19/7/17		cieved in Good Cond	
Name:	Date:		Name: Secu		_		230		tion is in Proper Ord	
Company:	Time:		Company: Ef	Not		Date:	30/7		ed Properly Chilled	M
*Container	Type & Preservation Codes: P - Plastic, G- Gla ric Acid Preserved, I - Ice, ST - Sodium Thiosul	iss Bottle, J - Glass Ja	r, V- Vial, Z - Ziplock B	ag, N - Nitric Acid Pr	eserved, C - I	Time: Hydrochlo				933

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8				poons																
coffey	Report R	esults to:	Prive	1 Dass	1 / Matt Locke	Locke	Mob	ile:					Ema	ail:					@cc	offey.com
	Invoices	to: Priy	a Daes	s/Matt	Locke		Phor	ne:					Ema	ail:	*	<u></u>				offey.com
Project No: GEOTLCOV24080AS Task No:											А	nalysis	Requ	est Ş	ection	أبين				
	:_Eurof										/5/	7	//	Sex	13	351	77.	77	77	-
	nager: Pr	riya L	<u>) 220<</u>	Matt	Locke]			1	X/.	5/,			/(S)X	12	\mathbf{Y}/\mathbf{I}	//	//	
Special Instructions:]		/	(8%)	?%\\`\		Xx,	(8)	3/	37	//	///		
Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS C	OF_ENAUAB	3TF00952AA	_MSA2 an]	/.		\Z	3/2		* / </td <td>9</td> <td>/3//</td> <td>7/</td> <td></td> <td></td> <td></td> <td></td>	9	/3//	7/				
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Name: Priga Dass Date: 29/7/15	-)	Name:	Y	41			Date	. 79	9/7	1/15		_				-	od Conditi			
Coffey Environments Time: 12.30p.M.		Compar	1y: 7	011				: 12	•								per Order			
Name: Date:	→	Name:					Date		-,		•	_				operly (
Company: Time:		Compar	ıy:				Time	:				- 1	o. Ref/E			,				
*Container Type & Preservation Codes: P - Plastic, G- Glass Bot S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, N	tle, J - Glass IP - No Prese	Jar, V-Via ervative, O	il, Z - Ziplo P - Other I	ck Bag, N - Preservativ	Nitric Acid Pr e	reserved, C - I	Hydro	chlori	c Acid	l Prese	rved,									

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Page <u>3</u> of <u>4</u>

0953

		Consigning	Office: Chat	W00	9																	
CO	offey	Report Re	sults to: Prive	Das	s/Matt Lo	che	Mobi	ile:						Ema	il:						@coffe	ev.com
			: Priya Bo				Phon	e:						Ema	il:	Í	<u></u>			-	@coffe	
Project	NO: GEOTLCOV 24080 AS	Task No:)									Analy	/sis R	equ	est S	ach.	ın V	ζ\ <u>\</u>				
Project	Name: MSB, UNSW	Laboratory: Eurof	ins MGT								15	7	//		0.7			}	77	77	7	
	r's Name: Priva Dass	Project Manager: Pri		Natt	Locke		1			/.	Bix	//	//		7		×,	/,	///	'//		
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Name:	Priya Dass Date: 29/	7/15 >	Name: 7	1			Date:	フ	7/	7/	(5		1						Condition			
Coffey I	invironments Time: 12	:30p.m.	, ,	all			Time:		2										r Order			
Name:	Date:	→	Name:				Date:						1					rly Ch				
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*Conta	ner Type & Preservation Codes: P - Plastic	G-Glass Rottle 1 Glass Is	ve W West 7 77-	oak C	N. Niteta A -1-1-0		1						1			- 1						
S - Sul	phuric Acid Preserved, I - Ice, ST - Sodium	Thiosulfate, NP - No Preser	77, v- viai, <u>Z</u> - Zip Vative, OP - Othe	Preserva	n - mitric Acid Pr tive	eservea, C - F	туагос	niorie	c Acid	rrese	erved,											

Page _ + of _ +

0954

	Consign	ng Officer	Chatswo	1				 .										_		334
coffov?	Poner 6	ang Office:	Chatswo	000	1															
coffey	Invoices	tesuits to:	Triud Oc	Matt Locke	che	Mob	ile:					Em	ail:							@coffey.com
		TO: FYIL	ta Doss I	Matt Pocks		Phor	ne:					Em	ail:	X	<u>,) </u>				@	⊕coffey.co r
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	t Manager: 🔭	iya Das	22 / Matt	Locke				/			//	19			^/	K		//		
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Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1		BTF00952AA									X.	74	75)	/ /	5%	7	//			
Lab No. Sample ID	Sample Date	Time	Matrix (Soiletc)	Container Type & Preservative*	T-A-T (specify)	/				An	Z)	7,3°,			//	//	//		NOTES	S
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Name: Date:	7					Date:		40					Receiv							
Company: Time:		Compan	y:			Time:							Receiv Batch		operi	iy Unii	пеа			
*Container Type & Preservation Codes: P - Plastic, G- Glas S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfi	s Bottle, J - Glass ate, NP - No Prese	Jar, V- Vial	, Z - Ziplock Ba - Other Prese	g, N - Nitric Acid Pre vative		-		Acid Pr	eserve	ed,	Lab	, nwi/	Datch	140.						

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web: www.eurofins.com.au

Melbourne 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

Coffey Geotechnics Pty Ltd Chatswood Company name:

Contact name: Priya Dass Project name: MSB UNSW

Project ID: GEOTLCOV24080AS

0951-54 COC number: Turn around time: 5 Day

Jul 30, 2015 11:32 AM Date/Time received:

Eurofins | mgt reference: 466933

Sample information

- \mathbf{V} A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- \mathbf{V} Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt: 3.8 degrees Celsius.
- \mathbf{V} All samples have been received as described on the above COC.
- \square COC has been completed correctly.
- **7** Attempt to chill was evident.
- \mathbf{V} Appropriately preserved sample containers have been used.
- **7** All samples were received in good condition.
- \mathbf{V} Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- \mathbf{V} Appropriate sample containers have been used.
- \mathbf{V} Sample containers for volatile analysis received with zero headspace.
- \boxtimes 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.



Environmental Laboratory Soil Contamination Analysis

NATA Accreditation Stack Emission Sampling & Analysis Trade Waste Sampling & Analysis Groundwater Sampling & Analysis





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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Order No.:

Report #:

Phone:

Fax:

web : www.eurofins.com.au

+61 2 9406 1000

+61 2 9406 1002

466933

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 Received: Jul 30, 2015 11:32 AM

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

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	tory - NATA Site	# 18217			Х	Х	Х	Х	Χ	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-JI25878		Х									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-JI25879		Х									
BH7A_0.22- 0.32	Jul 28, 2015		Soil	S15-JI25880	Х						Х			Х	Х
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-JI25881							Χ			Χ	Х
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-JI25882		Χ									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-JI25883		Χ									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-JI25884		Χ									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-JI25885		Х									



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

Received:

Priority:

Contact Name:

Due:

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

Coffey Geotechnics Pty Ltd Chatswood

Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway

> Chatswood NSW 2067

Project Name: MSB UNSW

Company Name:

Project ID: GEOTLCOV24080AS Order No.: 466933

web : www.eurofins.com.au

Phone: +61 2 9406 1000 Fax: +61 2 9406 1002

Report #:

Eurofins | mgt Client Manager: Charl Du Preez

Aug 6, 2015

Priya Dass

5 Day

Jul 30, 2015 11:32 AM

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	tory - NATA Site	e # 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Х
Brisbane Labor	ratory - NATA Si	ite # 20794													
External Labora	atory		_												
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-Jl25886		Χ									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-Jl25887				Х						Х	Х
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-Jl25888		Χ									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-Jl25889		Χ									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-JI25890	Χ		Х				Х			Х	Х
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25891		Χ									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25892		Χ									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-JI25893		Χ									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-JI25894				Х						Х	Х
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-Jl25895		Χ									

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au



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Brisbane I/21 Smallwood Place
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NATA # 1261 Site # 20794

Eurofins | mgt Client Manager: Charl Du Preez

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

web : www.eurofins.com.au

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.: Received: Jul 30, 2015 11:32 AM

Report #: 466933 Due: Aug 6, 2015 Phone: +61 2 9406 1000 Priority: 5 Day **Contact Name:** Fax: +61 2 9406 1002 Priya Dass

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	nere analysis is c	onducted													
	boratory - NATA		271												
	atory - NATA Site				Х	Χ	Х	Х	Х	Χ	Х	Х	Х	Х	Х
Brisbane Labo	oratory - NATA Si	ite # 20794													
External Labo	ratory														
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-JI25896		Χ									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		Χ									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	Х						Х			Х	Х
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		Χ									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-JI25900		Χ									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25901		Χ									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-Jl25902		Χ									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25903		Χ									Ш
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25904		Χ									
BH10_0.11- 0.21	Jul 27, 2015		Soil	S15-JI25905			Х				Х	Х		Х	Х



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

Order No.:

+61 2 9406 1000

+61 2 9406 1002

Report #:

Phone:

Fax:

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

Received: Jul 30, 2015 11:32 AM 466933 **Due:** Aug 6, 2015

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

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	# 18217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-JI25906							Х			Х	Χ
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25907		Х									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-JI25908		Х									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-JI25909		Х									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		Χ									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				Х						Х	Х
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		Χ									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				Х						Х	Х
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		Х									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		Χ									



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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Order No.:

Report #:

Phone:

Fax:

web : www.eurofins.com.au

+61 2 9406 1000

+61 2 9406 1002

466933

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 Received: Jul 30, 2015 11:32 AM

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

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	# 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH11_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25916		Х									
BH12_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25917	Х						Х			Х	Χ
BH12_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25918		Χ									
BH12_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25919		Х									
BH12_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25920		Χ									
BH12_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25921		Χ									
BH12_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25922		Χ									
BH13_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25923				Х						Х	Х
BH13_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25924				Х						Х	Х
BH13_2.0-2.1	Jul 28, 2015		Soil	S15-Jl25925		Χ									



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

Eurofins | mgt Client Manager: Charl Du Preez

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.: Received: Jul 30, 2015 11:32 AM

 Report #:
 466933
 Due:
 Aug 6, 2015

 Phone:
 +61 2 9406 1000
 Priority:
 5 Day

 Fax:
 +61 2 9406 1002
 Contact Name:
 Priya Dass

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lak	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	e # 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA S	ite # 20794													
External Labor	atory														
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-JI25926		Χ									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-JI25927		Х									
DUP1	Jul 27, 2015		Soil	S15-JI25928		Х									
DUP2	Jul 27, 2015		Soil	S15-Jl25929		Х									
DUP3	Jul 28, 2015		Soil	S15-JI25930							Х			Х	Х
DUP4	Jul 28, 2015		Soil	S15-Jl25931				Х						Х	Х
DUP5	Jul 28, 2015		Soil	S15-Jl25932		Х									
RB	Jul 28, 2015		Water	S15-Jl25933					Х						Х
ТВ	Jul 28, 2015		Water	S15-Jl25934									Х		\square
TS	Jul 28, 2015		Water	S15-JI25935						Х					



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





Certificate of Analysis

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-JI25880	S15-JI25881	S15-JI25887	S15-JI25890
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-JI25880	S15-JI25881	S15-JI25887	S15-JI25890
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 28, 2015	Jul 27, 2015
Test/Reference	LOR	Unit	001 20, 2010	oui 20, 2010	Jul 20, 2010	Jul 27, 2010
Polycyclic Aromatic Hydrocarbons	LOR	Unit				
	0.5	m a/l.a	.05	- 0.5	. O F	+ O F
Naphthalene Phenanthrene	0.5	mg/kg	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5 < 0.5
	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
	1	mg/kg %	132	112	118	118
2-Fluorobiphenyl (surr.)	1	%	126	113	120	120
p-Terphenyl-d14 (surr.) Polychlorinated Biphenyls		70	120	113	120	120
	0.5					.0.5
Aroclor 4004	0.5	mg/kg	-	-	-	< 0.5
Aroclor 1222	0.1	mg/kg	-	-	-	< 0.1
Aroclor 1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor 1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1248 Aroclor-1254	0.5	mg/kg	-	-	-	< 0.5
	0.5	mg/kg	-	-		< 0.5
Aroclor-1260 Total PCB*	0.5	mg/kg	-	-	-	< 0.5
Dibutylchlorendate (surr.)		mg/kg	-		-	< 0.1 72
` '	1	%	-	-		92
Tetrachloro-m-xylene (surr.)		%	-	-	-	92
Total Recoverable Hydrocarbons - 2013 NEPM Fra						
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		T #	2.122			
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	- 0.4	< 10
Characium	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 Margury	5	mg/kg	5.4	36	- - 0.05	< 5
Methodonum	0.05	mg/kg	< 0.05	0.63	< 0.05	< 0.05
Molybdenum Nietzel	5	mg/kg	< 5	< 5	- - F	< 5
Nickel Solonium	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 Vanadium	10	mg/kg mg/kg	< 1 < 10	< 1 < 10	-	< 1 < 10
						10



Client Sample ID Sample Matrix			BH7A_0.22- 0.32 Soil	BH7A_0.5-0.6 Soil	BH7A_6.0-6.1 Soil	BH8_0.4-0.5 Soil
Eurofins mgt Sample No.			S15-JI25880	S15-JI25881	S15-JI25887	S15-JI25890
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 Sample Matrix			BH8_4.0-4.1 Soil	BH9_0.1-0.2 Soil	BH10_0.11- 0.21 Soil	BH10_0.5-0.6 Soil
Eurofins mgt Sample No.			S15-JI25894	S15-JI25898	S15-JI25905	S15-JI25906
Date Sampled			Jul 27, 2015	Jul 27, 2015	Jul 27, 2015	Jul 27, 2015
Test/Reference	LOR	Unit	, , , , , , , , ,	2., 2., 2.	, , , , , , , , , ,	, , , , , , , , , ,
Total Recoverable Hydrocarbons - 1999 NEPM		O.m.				
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	<u>'</u>					
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)fluorantheneN07	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-JI25894	S15-JI25898	S15-JI25905	S15-JI25906
Date Sampled			Jul 27, 2015	Jul 27, 2015	Jul 27, 2015	Jul 27, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons	'	1				
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	<u>-</u> -
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	<u>-</u> -
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	<u>-</u> -
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	<u>-</u> -
Total PCB*	0.1	mg/kg	-	-	< 0.1	<u>-</u> -
Dibutylchlorendate (surr.)	1	%	-	-	81	<u>-</u> -
Tetrachloro-m-xylene (surr.)	1	%	-	-	109	-



						1
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-JI25894	S15-JI25898	S15-JI25905	S15-JI25906
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 F	ractions	•				
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 Sample Matrix Eurofins mgt Sample No. Date Sampled			BH8_4.0-4.1 Soil S15-JI25894 Jul 27, 2015	BH9_0.1-0.2 Soil S15-JI25898 Jul 27, 2015	BH10_0.11- 0.21 Soil S15-JI25905 Jul 27, 2015	BH10_0.5-0.6 Soil S15-JI25906 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-JI25911	S15-JI25913	S15-JI25917	S15-JI25923
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 27, 2015	Jul 28, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fra	ctions					
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 Fra	ctions					
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 Semale ID			DU44 0000	D1144 4 0 4 4	D1140 0 4 0 0	D140 05 00
Client Sample ID			BH11_0.2-0.3 Soil	BH11_1.0-1.1 Soil	BH12_0.1-0.2 Soil	BH13_0.5-0.6 Soil
Sample Matrix						
Eurofins mgt Sample No.			S15-JI25911	S15-JI25913	S15-JI25917	S15-JI25923
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 Frac	tions					
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 Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH11_0.2-0.3 Soil S15-JI25911 Jul 28, 2015	BH11_1.0-1.1 Soil S15-JI25913 Jul 28, 2015	BH12_0.1-0.2 Soil S15-JI25917 Jul 27, 2015	BH13_0.5-0.6 Soil S15-JI25923 Jul 28, 2015
Alkali Metals	LOIX	Offic				
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-JI25924	S15-JI25930	S15-JI25931
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-JI25924	S15-JI25930	S15-JI25931
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 NEP	// 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 Sample Matrix			BH13_1.0-1.1 Soil	DUP3 Soil	DUP4 Soil
Eurofins mgt Sample No.			S15-JI25924	S15-JI25930	S15-JI25931
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



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

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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Phone:

Fax:

web : www.eurofins.com.au

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.: Received: Jul 30, 2015 11:32 AM

Report #: 466933 Due: Aug 6, 2015 +61 2 9406 1000 Priority: 5 Day +61 2 9406 1002 **Contact Name:** Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Sample Detail						HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	tory - NATA Site	# 18217			Х	Χ	Х	Х	Х	Х	Χ	Х	Х	Х	Х
Brisbane Labor	ratory - NATA Si	te # 20794													
External Labora	atory														
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-Jl25878		Χ									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25879		Χ									
BH7A_0.22- 0.32	Jul 28, 2015		Soil	S15-JI25880	Х						Х			Х	х
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25881							Х			Х	Х
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25882		Χ									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25883		Х									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25884		Х									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-Jl25885		Х									

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN: 50 005 085 521 Telephone: +61 2 9900 8400 Facsimile: +61 2 9420 2977

Page 12 of 30 Report Number: 466933-S



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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Fax:

web : www.eurofins.com.au

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.: Received: Jul 30, 2015 11:32 AM

Report #: 466933 Due: Aug 6, 2015 Phone: +61 2 9406 1000 Priority: 5 Day **Contact Name:** +61 2 9406 1002 Priya Dass

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	tory - NATA Site	# 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Χ	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-JI25886		Х									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-JI25887				Х						Х	Χ
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-JI25888		Χ									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-JI25889		Х									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-JI25890	Х		Х				Х			Х	Х
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-JI25891		Χ									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-JI25892		Χ									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-JI25893		Χ									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-JI25894				Х						Х	Х
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-JI25895		Χ									



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

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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Order No.:

Report #:

Phone:

Fax:

web : www.eurofins.com.au

+61 2 9406 1000

+61 2 9406 1002

466933

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 Received: Jul 30, 2015 11:32 AM

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

Sample Detail						HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													\square
	oratory - NATA		271												
Sydney Labora	atory - NATA Site	# 18217			Х	Х	Х	Χ	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	ite # 20794													
External Labor	ratory														
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-JI25896		Х									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		Х									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	Х						Χ			Х	Χ
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		Х									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-JI25900		Χ									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-JI25901		Х									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-JI25902		Χ									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-JI25903		Χ									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-JI25904		Χ									
BH10_0.11- 0.21	Jul 27, 2015		Soil	S15-JI25905			Х				Х	Х		Х	х



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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

Order No.:

Report #:

Phone:

Fax:

web : www.eurofins.com.au

+61 2 9406 1000

+61 2 9406 1002

466933

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 Received: Jul 30, 2015 11:32 AM

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

Sample Detail					Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	# 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25906							Х			Х	Х
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25907		Χ									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-JI25908		Χ									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-JI25909		Χ									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		Х									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				Х						Х	Х
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		Χ									Ш
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				Х						Х	Х
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		Χ									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		Χ									



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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.: Received: Jul 30, 2015 11:32 AM

Report #: 466933 Due: Aug 6, 2015 Phone: +61 2 9406 1000 Priority: 5 Day **Contact Name:** +61 2 9406 1002 Priya Dass

	Sample Detail		Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory where analysis is co	nducted												
Melbourne Laboratory - NATA S	te # 1254 & 14271												
Sydney Laboratory - NATA Site	‡ 18217		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Laboratory - NATA Site	e # 20794												
External Laboratory													
BH11_3.8-3.9 Jul 28, 2015	Soil	S15-JI25916		Х									
BH12_0.1-0.2 Jul 27, 2015	Soil	S15-JI25917	Х						Х			Х	Χ
BH12_0.5-0.6 Jul 27, 2015	Soil	S15-Jl25918		Χ									
BH12_1.0-1.1 Jul 27, 2015	Soil	S15-Jl25919		Х									
BH12_2.0-2.1 Jul 27, 2015	Soil	S15-Jl25920		Х									
BH12_3.0-3.1 Jul 27, 2015	Soil	S15-Jl25921		Х									
BH12_3.8-3.9 Jul 27, 2015	Soil	S15-Jl25922		Х									
BH13_0.5-0.6 Jul 28, 2015	Soil	S15-Jl25923				Х						Х	Х
BH13_1.0-1.1 Jul 28, 2015	Soil	S15-Jl25924				Х						Х	Х
BH13_2.0-2.1 Jul 28, 2015	Soil	S15-JI25925		Χ									



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

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Murarrie QLD 4172
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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

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	e # 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	ite # 20794													
External Labor	atory														
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-JI25926		Х									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25927		Χ									
DUP1	Jul 27, 2015		Soil	S15-JI25928		Χ									
DUP2	Jul 27, 2015		Soil	S15-JI25929		Χ									
DUP3	Jul 28, 2015		Soil	S15-JI25930							Χ			Х	Χ
DUP4	Jul 28, 2015		Soil	S15-JI25931				Х						Х	Х
DUP5	Jul 28, 2015		Soil	S15-Jl25932		Χ									
RB	Jul 28, 2015		Water	S15-JI25933					Х						Х
ТВ	Jul 28, 2015		Water	S15-JI25934									Х		
TS	Jul 28, 2015		Water	S15-JI25935						Х					



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
 mg/l: milligrams per litre

 ug/l: micrograms per litre
 ppm: Parts per million

 ppb: Parts per billion
 %: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

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.
- 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.
- $10. \ \, \text{Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data}.$

Report Number: 466933-S



Quality Control Results

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank					
Total Recoverable Hydrocarbons - 1999 NEPM Fra	ctions				
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					
втех					
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	1 3 3				
Total Recoverable Hydrocarbons - 2013 NEPM Fra	ctions				
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	mg/kg	120		1 400	
Polycyclic Aromatic Hydrocarbons				Π	
Acenaphthene	mg/kg	< 0.5	0.5	Pass	
Acenaphthylene	mg/kg	< 0.5	0.5	Pass	
Anthracene		< 0.5	0.5	Pass	
	mg/kg	< 0.5	0.5	Pass	
Benz(a)anthracene	mg/kg	1			
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		ı ı			
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	. 2 0				
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 F	ractions				
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	ı				
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	<u> </u>				
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 Fraction	s				
TRH C6-C9	%	93	70-130	Pass	
TRH C10-C14	%	109	70-130	Pass	
LCS - % Recovery	1 /0	1.00	1 70 100	1 . 000	
BTEX					
Benzene	%	105	70-130	Pass	
Toluene	%	98	70-130	Pass	
	%	92	70-130	Pass	
Ethylbenzene ms n Xvlenes	%				
m&p-Xylenes		104	70-130	Pass	
o-Xylene	%	106	70-130	Pass	
Xylenes - Total	%	105	70-130	Pass	
LCS - % Recovery		T 1			
Total Recoverable Hydrocarbons - 2013 NEPM Fraction					
Naphthalene	%	88	70-130	Pass	
TRH C6-C10	%	94	70-130	Pass	



Test	Units	Result 1		ceptance 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	70	107		0 100	1 455	
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	70				. 200	
Total Recoverable Hydrocarbons - 2013 NEPM Fr.	actions					
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			<u> </u>	97		70-130	Pass	
Thallium			<u> </u>	90		70-130	Pass	
Tin			<u> </u>	120		70-130	Pass	
Titanium			%	100			Pass	
						70-130		
Uranium			%	123		70-130	Pass	
Vanadium			%	96		70-130	Pass	
Zinc			%	94		70-130	Pass	
Zinc			%	116		70-130	Pass	
LCS - % Recovery				T	T T	T	I	
Alkali Metals		1					_	
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					1			
Polychlorinated Biphenyls		, ,		Result 1				
Aroclor-1260	B15-Jl26046	NCP	%	112		70-130	Pass	
Spike - % Recovery								
Heavy Metals	_			Result 1				
Antimony	S15-JI25890	CP	%	102		70-130	Pass	
Arsenic	S15-Jl25890	СР	%	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	СР	%	100	70-130	Pass	
Manganese	S15-JI25890	СР	%	107	70-130	Pass	
Mercury	S15-JI25890	СР	%	115	70-130	Pass	
Molybdenum	S15-JI25890	СР	%	112	70-130	Pass	
Nickel	S15-JI25890	СР	%	101	70-130	Pass	
Selenium	S15-JI25890	СР	%	107	70-130	Pass	
Silver	S15-JI25890	CP	%	109	70-130	Pass	
Thallium	S15-JI25890	CP	%	104	70-130	Pass	
Uranium	S15-JI25890	CP	%	107	70-130	Pass	
Vanadium	S15-JI25890	CP	%	105	70-130	Pass	
Zinc	S15-JI25890	CP	//	101	70-130	Pass	
Spike - % Recovery	010 0120000	Oi I	70	101	70 130	1 433	
Extended Metals Suite				Result 1			
Phosphorus	S15-JI25890	СР	%	111	70-130	Pass	
<u>, </u>	313-3123690	L CF	70		70-130	Fass	
Spike - % Recovery	4000 NEDM Front	iono		Dogult 1	T	I	
Total Recoverable Hydrocarbons			0/	Result 1	70.400	Dana	
TRH C6-C9	S15-Jl25894	CP	%	93	70-130	Pass	
Spike - % Recovery				D			
BTEX	0.5	0.0		Result 1			
Benzene	S15-JI25894	CP	%	93	70-130	Pass	
Toluene	S15-JI25894	CP	%	97	70-130	Pass	
Ethylbenzene	S15-JI25894	CP	%	93	70-130	Pass	
m&p-Xylenes	S15-JI25894	CP	%	108	70-130	Pass	
o-Xylene	S15-JI25894	CP	%	109	70-130	Pass	
Xylenes - Total	S15-JI25894	CP	%	108	70-130	Pass	
Spike - % Recovery				T T			
Total Recoverable Hydrocarbons	- 2013 NEPM Fract	ions		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 Fract	ions		Result 1			
TRH C10-C14	S15-JI25898	CP	%	87	70-130	Pass	
Spike - % Recovery							
Total Recoverable Hydrocarbons	- 2013 NEPM Fract	ions		Result 1			
TRH >C10-C16	S15-Jl25898	CP	%	89	70-130	Pass	
Spike - % Recovery							
Polycyclic Aromatic Hydrocarbon	s			Result 1			
Acenaphthene	S15-JI25905	СР	%	94	70-130	Pass	
Acenaphthylene	S15-JI25905	СР	%	90	70-130	Pass	
Anthracene	S15-JI25905	СР	%	92	70-130	Pass	
Benz(a)anthracene	S15-JI25905	СР	%	104	70-130	Pass	
Benzo(a)pyrene	S15-JI25905	СР	%	103	70-130	Pass	
Benzo(b&j)fluoranthene	S15-JI25905	CP	%	118	70-130	Pass	
Benzo(g.h.i)perylene	S15-JI25905	CP	%	81	70-130	Pass	
						Pass	
Benzo(k)fluoranthene	S15-Jl25905	CP	%	90	70-130	I Pass	



Test	Lab Sample ID	QA Source	Units	Result 1	A	cceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	S15-JI25905	СР	%	84		70-130	Pass	
Fluoranthene	S15-JI25905	СР	%	93		70-130	Pass	
Fluorene	S15-JI25905	СР	%	92		70-130	Pass	
Indeno(1.2.3-cd)pyrene	S15-JI25905	СР	%	84		70-130	Pass	
Naphthalene	S15-JI25905	СР	%	92		70-130	Pass	
Phenanthrene	S15-JI25905	СР	%	88		70-130	Pass	
Pyrene	S15-JI25905	СР	%	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-JI27111	NCP	%	100		70-130	Pass	
b-BHC	S15-JI27111	NCP	%	96		70-130	Pass	
d-BHC	S15-JI27111	NCP	%	108		70-130	Pass	
Dieldrin	S15-JI27111	NCP	%	99		70-130	Pass	
Endosulfan I	S15-JI27111	NCP	%	100		70-130	Pass	
Endosulfan II	S15-JI27111	NCP	%	100		70-130	Pass	
Endosulfan sulphate	S15-JI27111	NCP	%	104		70-130	Pass	
Endrin	S15-JI27111	NCP	%	97		70-130	Pass	
Endrin aldehyde	S15-JI27111	NCP	%	93		70-130	Pass	
Endrin ketone	S15-JI27111	NCP	%	102		70-130	Pass	
g-BHC (Lindane)	S15-JI27111	NCP	%	102		70-130	Pass	
Heptachlor	S15-JI27111	NCP	%	98		70-130	Pass	
Heptachlor epoxide	S15-JI27111	NCP	%	98		70-130	Pass	
Methoxychlor	S15-JI27111	NCP	//	92		70-130	Pass	
Spike - % Recovery	013 3127111	INOI	70	32		70-130	1 433	
Organophosphorus Pesticides (C)P)			Result 1				
Chlorpyrifos	S15-JI27112	NCP	%	95		70-130	Pass	
Dimethoate	S15-JI27112	NCP	%	101		70-130	Pass	
Disulfoton	S15-JI27112	NCP	%	126		70-130	Pass	
Methyl azinphos	S15-JI27112	NCP	%	92		70-130	Pass	
Methyl parathion	S15-JI27112	NCP	%	94		70-130	Pass	
Parathion	S15-JI27112	NCP	%	95		70-130	Pass	
Phorate	S15-JI27112	NCP	%	103		70-130	Pass	
Spike - % Recovery	0.00.22					10 100		
Heavy Metals				Result 1				
Antimony	S15-JI25930	СР	%	116		70-130	Pass	
Arsenic	S15-JI25930	CP	%	106		70-130	Pass	
Barium	S15-JI25930	CP	%	124		70-130	Pass	
Beryllium	S15-JI25930	CP	%	105		70-130	Pass	
Bismuth	S15-JI25930	CP	%	116		70-130	Pass	
Boron	S15-JI25930	CP	%	116		70-130	Pass	
Cadmium	S15-JI25930	CP	%	111		70-130	Pass	
Chromium	S15-JI25930	CP	%	113		70-130	Pass	
Cobalt	S15-JI25930	CP	%	104		70-130	Pass	
Copper	S15-JI25930	CP	%	107		70-130	Pass	
Lead	S15-JI25930	CP	<u> </u>	107		70-130	Pass	
	S15-JI25930	CP	<u> </u>	121		70-130	Pass	
Manganese	1 010-0120300	UI.	/0	141		10.100	1 000	
Manganese		CD	0/_	117		70-130	Pacc	l
Manganese Mercury Molybdenum	S15-Jl25930 S15-Jl25930	CP CP	%	117 110		70-130 70-130	Pass Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium	S15-JI25930	CP	%	103			70-130	Pass	
Silver	S15-JI25930	CP	%	109			70-130	Pass	
Thallium	S15-JI25930	СР	%	109			70-130	Pass	
Uranium	S15-JI25930	СР	%	115			70-130	Pass	
Vanadium	S15-JI25930	СР	%	124			70-130	Pass	
Zinc	S15-JI25930	СР	%	87			70-130	Pass	
Spike - % Recovery									
Extended Metals Suite				Result 1					
Phosphorus	S15-JI25930	CP	%	112			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons	- 1999 NEPM Fract	ions		Result 1					
TRH C6-C9	S15-Jl25931	СР	%	83			70-130	Pass	
TRH C10-C14	S15-Jl25931	СР	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S15-JI25931	СР	%	96			70-130	Pass	
Toluene	S15-JI25931	CP	%	99			70-130	Pass	
Ethylbenzene	S15-JI25931	CP	%	93			70-130	Pass	
m&p-Xylenes	S15-JI25931	CP	%	103			70-130	Pass	
o-Xylene	S15-JI25931	CP	%	105			70-130	Pass	
Xvlenes - Total	S15-JI25931	CP	%	104			70-130	Pass	
Spike - % Recovery	010 0120001	Oi	70	104			70-130	1 433	
Total Recoverable Hydrocarbons	- 2013 NEDM Fract	ione		Result 1					
Naphthalene	S15-JI25931	CP	%	88			70-130	Pass	
TRH C6-C10	S15-JI25931	CP	%	75			70-130	Pass	
Spike - % Recovery	313-3123931	CF	/0	13			70-130	газэ	
Total Recoverable Hydrocarbons	2012 NEDM Front	ione		Result 1			T		
TRH >C10-C16	S15-JI25931	CP	%	92			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate		Source					Lillits	Lillits	Code
						DDD			
Hoavy Motals				Result 1	Result 2	RPD			
Heavy Metals	915- II2573 <i>1</i>	NCP	ma/ka	Result 1	Result 2	RPD 11	30%	Page	
Aluminium	\$15-JI25734	NCP	mg/kg	1500	1400	11	30%	Pass	
Aluminium Iron	\$15-JI25734 \$15-JI25734	NCP NCP	mg/kg mg/kg				30%	Pass Pass	
Aluminium Iron Duplicate	1 0 10 0 1 1 1 1	_		1500 1800	1400 1500	11 16			
Aluminium Iron Duplicate Heavy Metals	S15-JI25734	NCP	mg/kg	1500 1800 Result 1	1400 1500 Result 2	11 16 RPD	30%	Pass	
Aluminium Iron Duplicate Heavy Metals Antimony	S15-JI25734 S15-JI25887	NCP CP	mg/kg	1500 1800 Result 1 < 10	1400 1500 Result 2 < 10	11 16 RPD <1	30%	Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic	\$15-JI25734 \$15-JI25887 \$15-JI25887	CP CP	mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2	1400 1500 Result 2 < 10 < 2	11 16 RPD <1 <1	30% 30% 30%	Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium	\$15-JI25734 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP	mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10	1400 1500 Result 2 < 10 < 2 < 10	11 16 RPD <1 <1 <1	30% 30% 30% 30%	Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium	\$15-JI25734 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP	mg/kg mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2	1400 1500 Result 2 < 10 < 2 < 10 < 2	11 16 RPD <1 <1 <1 <1	30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth	\$15-JI25734 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP CP	mg/kg mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2 < 10	1400 1500 Result 2 < 10 < 2 < 10 < 2 < 10	11 16 RPD <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP CP CP	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2 < 10 < 2	1400 1500 Result 2 < 10 < 2 < 10 < 2 < 10 < 2 < 10	11 16 RPD <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium	\$15-JI25734 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP CP CP	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2 < 10 < 2 < 10	1400 1500 Result 2 < 10 < 2 < 10 < 2 < 10 < 2 < 10 < 2	11 16 RPD <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium	\$15-JI25734 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP CP CP CP	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2 < 10 < 2 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 2 < 10 < 2 < 10 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt	\$15-JI25734 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP CP CP CP CP	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2 < 10 < 10 < 10 < 5 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 2 < 10 < 10 < 10 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP CP CP CP CP CP CP CP	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 10 < 0.4 < 5 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 2 < 10 < 10 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 2 < 10 < 15 < 5 < 5 < 5	Result 2 < 10 < 2 < 10 < 10 < 10 < 10 < 5 < 5 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5	Result 2 < 10 < 2 < 10 < 2 < 10 < 10 < 5 < 5 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese Mercury	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 0.05	1400 1500 Result 2 < 10 < 2 < 10 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 0.05	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese Mercury Molybdenum	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese Mercury Molybdenum Nickel	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 10 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese Mercury Molybdenum	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese Mercury Molybdenum Nickel	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 10 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	1400 1500 Result 2 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	
Aluminium Iron Duplicate Heavy Metals Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Chromium Cobalt Copper Lead Manganese Mercury Molybdenum Nickel Selenium	\$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887 \$15-JI25887	CP C	mg/kg	1500 1800 Result 1 < 10 < 2 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 5 < 0.05 < 5 < 2 < 2	1400 1500 Result 2 < 10 < 2 < 10 < 10 < 10 < 0.4 < 5 < 5 < 5 < 5 < 5 < 2	11 16 RPD <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	30% 30% 30% 30% 30% 30% 30% 30%	Pass Pass Pass Pass Pass Pass Pass Pass	



Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Uranium	S15-JI25887	СР	mg/kg	< 1	< 1	<1	30%	Pass	
Vanadium	S15-Jl25887	СР	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	S15-Jl25887	СР	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Extended Metals Suite				Result 1	Result 2	RPD			
Phosphorus	S15-JI25887	СР	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate			, , ,						
				Result 1	Result 2	RPD		\Box	
% Moisture	S15-JI25887	СР	%	22	21	3.0	30%	Pass	
Duplicate	0.000		1.2			7.0	22.12	1 5.55	
Total Recoverable Hydrocarbons	- 1999 NFPM Fract	ions		Result 1	Result 2	RPD			
TRH C6-C9	S15-JI25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-JI25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-JI25890	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-JI25890	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate	010-0120090	l Cl-	ı myrky	_ \ \ 00	_ \ 00		JU /0	1 033	
BTEX				Result 1	Result 2	RPD			
Benzene	S15-JI25890	СР	mg/kg	< 0.1	< 0.1	KPD <1	30%	Pass	
Toluene	S15-JI25890 S15-JI25890	CP		< 0.1	< 0.1	<1 <1	30%	Pass	
		CP	mg/kg					Pass	
Ethylbenzene m&p-Xylenes	S15-JI25890 S15-JI25890	CP	mg/kg mg/kg	< 0.1	< 0.1 < 0.2	<1 <1	30%	Pass	
· <i>'</i>		<u> </u>							
o-Xylene	S15-JI25890	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S15-JI25890	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate Table 1 Tabl	0040 NEDM 5	•		Door It 4	D 11 0	DDD		T	
Total Recoverable Hydrocarbons			T ,,	Result 1	Result 2	RPD	000/	-	
Naphthalene	S15-JI25890	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S15-JI25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S15-JI25890	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate				Ι	T T		Ī	T	
Polychlorinated Biphenyls	1	Τ	T	Result 1	Result 2	RPD			
Aroclor-1016	B15-JI26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1221	B15-JI26040	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-JI26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Aroclor-1260	B15-JI26040	NCP	mg/kg	**	< 0.5	<1	30%	Pass	
Total PCB*	S15-JI24560	NCP	mg/kg	4.1	5.2	23	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons	- 2013 NEPM Fract	ions		Result 1	Result 2	RPD			
TRH >C10-C16	S15-JI25890	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 Hydrocarbon	s			Result 1	Result 2	RPD			
Acenaphthene	S15-Jl25898	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S15-JI25898	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S15-JI25898	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S15-JI25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S15-JI25898	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S15-JI25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S15-JI25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\				i				1 1	
Benzo(k)fluoranthene	S15-JI25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	



Duplicate					1		I		
Polycyclic Aromatic Hydrocarbo	ons		1	Result 1	Result 2	RPD			<u> </u>
Dibenz(a.h)anthracene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	<u> </u>
Fluoranthene	S15-Jl25898	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	<u> </u>
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	1			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-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin aldehyde	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Endrin ketone	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Heptachlor	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Heptachlor epoxide	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Hexachlorobenzene	B15-JI26040	NCP	mg/kg	**	< 0.05	<1	30%	Pass	
Methoxychlor	B15-JI26040	NCP	mg/kg	**	< 0.03	<1	30%	Pass	
Toxaphene	B15-JI26040	NCP	mg/kg	**	< 1	<1	30%	Pass	
Duplicate	D13-3120040	INCF	ilig/kg		_ < 1	<u> </u>	30 /6	Fass	
Organophosphorus Pesticides	(OP)			Result 1	Result 2	RPD	I	I	
Chlorpyrifos	S15-Jl26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
, ,		NCP							
Coumaphos Dometon (total)	S15-JI26280	 	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S15-JI26280	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S15-JI26280	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S15-JI26280	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									
•				Doguit 4	Descrit 0	DDD			
Heavy Metals	C45 1105004	CD		Result 1	Result 2	RPD	200/	Dana	
Antimony	S15-JI25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Arsenic	S15-JI25924	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Barium	S15-JI25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Beryllium	S15-JI25924	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bismuth	S15-JI25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Boron	S15-JI25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	S15-JI25924	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S15-JI25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Cobalt	S15-JI25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S15-JI25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S15-JI25924	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Manganese	S15-JI25924	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				T.			I		
Extended Metals Suite		ī	1	Result 1	Result 2	RPD			
Phosphorus	S15-Jl25924	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate				T.			I		
		ı	T	Result 1	Result 2	RPD			
% Moisture	S15-Jl25924	CP	%	2.7	2.2	18	30%	Pass	
Duplicate				T.			I		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 2	RPD			
TRH C6-C9	S15-JI25930	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S15-JI25930	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S15-JI25930	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S15-JI25930	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S15-JI25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S15-JI25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S15-JI25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S15-JI25930	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S15-JI25930	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
<u> </u>				0 0	. 0 0	<1	30%	Pass	
Xylenes - Total	S15-JI25930	CP	mg/kg	< 0.3	< 0.3	<u> </u>	0070		
Xylenes - Total Duplicate	S15-Jl25930	СР	mg/kg	< 0.3	< 0.3		0070		
			mg/kg	< 0.3	Result 2	RPD	3070		
Duplicate			mg/kg				30%	Pass	
Duplicate Total Recoverable Hydrocarbons	- 2013 NEPM Fract	ions	1	Result 1	Result 2	RPD		Pass Pass	
Duplicate Total Recoverable Hydrocarbons Naphthalene	- 2013 NEPM Fract S15-JI25930	ions CP	mg/kg	Result 1 < 0.5	Result 2 < 0.5	RPD <1	30%		
Duplicate Total Recoverable Hydrocarbons Naphthalene TRH C6-C10	- 2013 NEPM Fract S15-JI25930 S15-JI25930	ions CP CP	mg/kg mg/kg	Result 1 < 0.5 < 20	Result 2 < 0.5 < 20	RPD <1 <1	30% 30%	Pass	
Duplicate Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 TRH C6-C10 less BTEX (F1)	- 2013 NEPM Fract S15-JI25930 S15-JI25930 S15-JI25930	ions CP CP CP	mg/kg mg/kg	Result 1 < 0.5 < 20	Result 2 < 0.5 < 20	RPD <1 <1	30% 30%	Pass	
Duplicate Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 TRH C6-C10 less BTEX (F1) Duplicate	- 2013 NEPM Fract S15-JI25930 S15-JI25930 S15-JI25930 - 2013 NEPM Fract	ions CP CP CP	mg/kg mg/kg	Result 1 < 0.5 < 20 < 20	Result 2 < 0.5 < 20 < 20	RPD <1 <1 <1 <1	30% 30%	Pass	
Duplicate Total Recoverable Hydrocarbons Naphthalene TRH C6-C10 TRH C6-C10 less BTEX (F1) Duplicate Total Recoverable Hydrocarbons	- 2013 NEPM Fract S15-JI25930 S15-JI25930 S15-JI25930	ions CP CP CP	mg/kg mg/kg mg/kg	Result 1 < 0.5 < 20 < 20 Result 1	Result 2 < 0.5 < 20 < 20 Result 2	RPD <1 <1 <1 <1 <1 RPD	30% 30% 30%	Pass 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

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).

N01

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.

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. N04

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 N07

Authorised By

N02

Charl Du Preez Analytical Services Manager Bob Symons Senior Analyst-Asbestos (NSW) Bob Symons Senior Analyst-Inorganic (NSW) Ivan Taylor Senior Analyst-Metal (NSW) Rvan 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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Coffey Geotechnics Pty Ltd Chatswood Level 18, Tower B, Citadel Tower 799 Pacific Highway Chatswood NSW 2067





Certificate of Analysis

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	тв	TS
Sample Matrix			Water	Water	Water
Eurofins mgt Sample No.			S15-JI25933	S15-JI25934	S15-JI25935
Date Sampled			Jul 28, 2015	Jul 28, 2015	Jul 28, 2015
Test/Reference	LOR	Unit	,	,	, , ,
Total Recoverable Hydrocarbons - 1999 NEPM		Offic			
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		19 =			
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)fluorantheneN07	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	ТВ	TS
Sample Matrix			Water	Water	Water
Eurofins mgt Sample No.			S15-JI25933	S15-JI25934	S15-JI25935
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 N	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



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

Received:

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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

web : www.eurofins.com.au

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 #:

Phone: +61 2 9406 1000 Fax: +61 2 9406 1002

466933

Due: Aug 6, 2015

Priority: 5 Day **Contact Name:** Priya Dass

Eurofins | mgt Client Manager: Charl Du Preez

Jul 30, 2015 11:32 AM

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	1271												
Sydney Labora	tory - NATA Site	# 18217			Х	Χ	Х	Х	Х	Х	Χ	Х	Х	Х	Х
Brisbane Labor	ratory - NATA Si	te # 20794													
External Labora	atory														
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-Jl25878		Х									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25879		Х									
BH7A_0.22- 0.32	Jul 28, 2015		Soil	S15-Jl25880	Х						Х			Х	Х
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25881							Χ			Х	Х
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25882		Х									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25883		Х									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25884		Х									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-Jl25885		Х									

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066 ABN: 50 005 085 521 Telephone: +61 2 9900 8400 Facsimile: +61 2 9420 2977

Page 4 of 15



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

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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway

> Chatswood NSW 2067

Project Name: MSB UNSW

Project ID: GEOTLCOV24080AS Order No.: Received: Jul 30, 2015 11:32 AM

Report #: 466933 Due: Aug 6, 2015 Phone: +61 2 9406 1000 Priority: 5 Day **Contact Name:** Fax: +61 2 9406 1002 Priya Dass

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	tory - NATA Site	# 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Χ	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-JI25886		Х									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-JI25887				Х						Х	Χ
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-JI25888		Χ									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-JI25889		Х									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-JI25890	Х		Х				Х			Х	Х
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-JI25891		Χ									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-JI25892		Χ									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-JI25893		Χ									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-JI25894				Х						Х	Х
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-JI25895		Χ									



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

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Laboratory wh	ere analysis is c	onducted													\square
	oratory - NATA		271												
Sydney Labora	atory - NATA Site	# 18217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	ite # 20794													
External Labor	ratory														
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-JI25896		Х									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		Х									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-JI25898	Х						Х			Х	Χ
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		Х									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-JI25900		Χ									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-JI25901		Х									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-JI25902		Χ									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-JI25903		Χ									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-JI25904		Χ									
BH10_0.11- 0.21	Jul 27, 2015		Soil	S15-JI25905			Х				Х	Х		Х	х



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Project ID: GEOTLCOV24080AS Received: Jul 30, 2015 11:32 AM

Report #: 466933 Due: Aug 6, 2015 Phone: +61 2 9406 1000 Priority: 5 Day **Contact Name:** +61 2 9406 1002 Priya Dass

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is co	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	ntory - NATA Site	# 18217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-JI25906							Х			Х	Х
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-JI25907		Х									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-JI25908		Х									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-JI25909		Х									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		Х									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				Х						Х	Χ
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		Х									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				Х						Χ	Χ
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		Χ									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-JI25915		Х									



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Laboratory who	ere analysis is co	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	ntory - NATA Site	# 18217			Х	Х	Х	Х	Х	Χ	Х	Х	Χ	Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH11_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25916		Χ									
BH12_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25917	Χ						Х			Х	Х
BH12_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25918		Х									
BH12_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25919		Χ									
BH12_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25920		Χ									
BH12_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25921		Х									
BH12_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25922		Х									
BH13_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25923				Х						Х	Х
BH13_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25924				Х						Х	Х
BH13_2.0-2.1	Jul 28, 2015		Soil	S15-Jl25925		Χ									



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

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Project Name: MSB UNSW

Project ID: GEOTLCOV24080AS Order No.: Received: Jul 30, 2015 11:32 AM Report #:

466933 Due: Aug 6, 2015 +61 2 9406 1000 Priority: 5 Day **Contact Name:** +61 2 9406 1002 Priya Dass

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	e # 18217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA S	ite # 20794													
External Labor	atory														
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-JI25926		Х									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-JI25927		Х									
DUP1	Jul 27, 2015		Soil	S15-JI25928		Χ									
DUP2	Jul 27, 2015		Soil	S15-JI25929		Χ									
DUP3	Jul 28, 2015		Soil	S15-JI25930							Х			Х	Х
DUP4	Jul 28, 2015		Soil	S15-JI25931				Х						Х	Χ
DUP5	Jul 28, 2015		Soil	S15-JI25932		Χ									
RB	Jul 28, 2015		Water	S15-JI25933					Х						Х
ТВ	Jul 28, 2015		Water	S15-JI25934									Х		
TS	Jul 28, 2015		Water	S15-JI25935						Х					



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
 mg/l: milligrams per litre

 ug/l: micrograms per litre
 ppm: Parts per million

 ppb: Parts per billion
 %: Percentage

org/100ml: Organisms per 100 millilitres NTU: Nephelometric Turbidity Units

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

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.

DuplicateA 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.
- 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	1				
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	<u> </u>				
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		10.02	0.02		
Volatile Organics					
Naphthalene	mg/L	< 0.02	0.02	Pass	
Method Blank	1119/2	V 0.02	0.02	1 455	
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		< 0.001	0.001	Pass	
Dibenz(a.h)anthracene	mg/L	1			
· · ·	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		1		Τ	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions		0.05		_	
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	1			1	
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	Oode
Zinc (filtered)	mg/L	< 0.005	0.005	Pass	
LCS - % Recovery	ı mg/L	V 0.000	0.000	1 400	
Total Recoverable Hydrocarbons - 1999 NEPM Fraction	ns			Ι	1
TRH C6-C9	%	83	70-130	Pass	
TRH C10-C14	%	106	70-130	Pass	
LCS - % Recovery	70	100	70-130	1 033	
BTEX				I	
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	70	94	70-130	Fass	
Total Recoverable Hydrocarbons - 2013 NEPM Fraction	ne			I	
TRH C6-C10	% %	92	70-130	Poss	
	%	92	/0-130	Pass	
LCS - % Recovery				I	
Volatile Organics	0/	00	70.400	Dane	
Naphthalene	%	89	70-130	Pass	
LCS - % Recovery				I	
Polycyclic Aromatic Hydrocarbons		74	70.400	_	
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				ı	
Total Recoverable Hydrocarbons - 2013 NEPM Fraction					
TRH >C10-C16	%	123	70-130	Pass	
LCS - % Recovery				ı	
Heavy Metals	I				
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 Hydrocarbon	s			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-JI26397	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 Hydrocarbon	s			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			<u> </u>						
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S15-JI26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S15-JI26396	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium (filtered)	S15-JI26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S15-JI26396	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
	1	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S15-JI26396	י ש.וען ן	[[1](1/1	< (1 ()(1)	 < () ()()	<i>-</i> - 1	.30.70	l Page	



Duplicate										
Heavy Metals				Result 1	Result 2	RPD				
Mercury (filtered)	S15-JI26396	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass		
Nickel (filtered)	S15-JI26396	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
Code	Describitori

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). N01

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.

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. N04

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 N07

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 Q08

Authorised By

N02

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





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 asbestoscontaining 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.







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.

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	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH8_0.4-0.5	15-Jl25890	Jul 27, 2015	Approximate Sample 107g	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH9_0.1-0.2	15-Jl25898	Jul 27, 2015	Approximate Sample 94g	No asbestos detected. Organic fibre detected. No respirable fibres detected.
BH12_0.1-0.2	15-Jl25917	Jul 27, 2015	Approximate Sample 97g	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.

DescriptionTesting SiteExtractedHolding TimeAsbestos - LTM-ASB-8020SydneyJul 31, 2015Indefinite



MSB UNSW

Project Name:

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

Eurofins | mgt Client Manager: Charl Du Preez

Brisbane 1/21 Smallwood Place 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 Report #: 466933 Due: Aug 6, 2015 Chatswood Phone: +61 2 9406 1000 Priority: 5 Day

NSW 2067 Fax: +61 2 9406 1002 **Contact Name:** Priya Dass

Project ID: GEOTLCOV24080AS

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
•	ere analysis is co														
Melbourne Lab	oratory - NATA S	Site # 1254 & 14	271												
Sydney Labora	tory - NATA Site	# 18217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Brisbane Labor	ratory - NATA Si	te # 20794													
External Labora	atory		ı												
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
BH7_0.22-0.32	Jul 27, 2015		Soil	S15-JI25878		Х									
BH7_0.5-0.6	Jul 27, 2015		Soil	S15-JI25879		Х									
BH7A_0.22- 0.32	Jul 28, 2015		Soil	S15-Jl25880	Х						Х			Х	Х
BH7A_0.5-0.6	Jul 28, 2015		Soil	S15-JI25881							Χ			Х	Χ
BH7A_1.0-1.1	Jul 28, 2015		Soil	S15-JI25882		Χ									
BH7A_2.1-2.2	Jul 28, 2015		Soil	S15-JI25883		Χ									
BH7A_3.0-3.1	Jul 28, 2015		Soil	S15-JI25884		Χ									
BH7A_4.0-4.1	Jul 28, 2015		Soil	S15-JI25885		Χ									



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 Order No.: Received: Jul 30, 2015 11:32 AM

Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway Report #: 466933 Due: Aug 6, 2015

 Chatswood
 Phone:
 +61 2 9406 1000
 Priority:
 5 Day

 NSW 2067
 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	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory who	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	ntory - NATA Site	# 18217			Χ	Х	Х	Х	Х	Х	Х	Х	Х	Χ	Χ
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory														
BH7A_5.0-5.1	Jul 28, 2015		Soil	S15-Jl25886		Χ									
BH7A_6.0-6.1	Jul 28, 2015		Soil	S15-Jl25887				Х						Х	Х
BH7A_7.0-7.1	Jul 28, 2015		Soil	S15-Jl25888		Χ									
BH7A_7.9-8.0	Jul 28, 2015		Soil	S15-Jl25889		Χ									
BH8_0.4-0.5	Jul 27, 2015		Soil	S15-JI25890	Χ		Х				Х			Χ	Х
BH8_1.0-1.1	Jul 27, 2015		Soil	S15-Jl25891		Χ									
BH8_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25892		Χ									
BH8_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25893		Χ									
BH8_4.0-4.1	Jul 27, 2015		Soil	S15-Jl25894				Х						Χ	Х
BH8_5.0-5.1	Jul 27, 2015		Soil	S15-Jl25895		Χ									



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

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

Sydney Unit F3, Building F

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

Coffey Geotechnics Pty Ltd Chatswood

Address:

Company Name:

Level 18, Tower B, Citadel Tower 799 Pacific Highway

Chatswood

NSW 2067

Project Name:

MSB UNSW

Project ID:

GEOTLCOV24080AS

Order No.: Report #:

466933

Phone: Fax:

+61 2 9406 1000

+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 wh	nere analysis is o	onducted													
Melbourne Lal	boratory - NATA	Site # 1254 & 142	271												
Sydney Labor	atory - NATA Site	e # 18217			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Brisbane Labo	oratory - NATA S	ite # 20794													
External Labo	ratory														
BH8_6.0-6.1	Jul 27, 2015		Soil	S15-Jl25896		Х									
BH8_6.9-7.0	Jul 27, 2015		Soil	S15-Jl25897		Х									
BH9_0.1-0.2	Jul 27, 2015		Soil	S15-Jl25898	Х						Х			Х	Х
BH9_0.5-0.6	Jul 27, 2015		Soil	S15-Jl25899		Х									
BH9_1.0-1.1	Jul 27, 2015		Soil	S15-JI25900		Х									
BH9_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25901		Х									
BH9_2.2-2.3	Jul 27, 2015		Soil	S15-Jl25902		Х									
BH9_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25903		Χ									
BH9_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25904		Χ									
BH10_0.11- 0.21	Jul 27, 2015		Soil	S15-Jl25905			Х				Х	Х		Х	Х



MSB UNSW

Address:

Project Name:

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 Order No.: Received: Jul 30, 2015 11:32 AM

Level 18, Tower B, Citadel Tower 799 Pacific Highway

Report #: 466933

Chatswood

Phone: +61 2 9406 1000

Priority: 5 Day

NSW 2067 Fax: +61 2 9406 1000 Priority: 5 Day

NSW 2067 Fax: +61 2 9406 1002 Contact Name: Priya Dass

Project ID: GEOTLCOV24080AS

Eurofins | mgt Client Manager: Charl Du Preez

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	# 18217			Х	Х	Х	Х	Х	Χ	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	te # 20794													
External Labor	atory	Ī													
BH10_0.5-0.6	Jul 27, 2015		Soil	S15-JI25906							Х			Χ	Х
BH10_1.0-1.1	Jul 27, 2015		Soil	S15-JI25907		Х									
BH10_2.0-2.1	Jul 27, 2015		Soil	S15-Jl25908		Χ									
BH10_3.0-3.1	Jul 27, 2015		Soil	S15-Jl25909		Χ									
BH10_3.8-3.9	Jul 27, 2015		Soil	S15-Jl25910		Χ									
BH11_0.2-0.3	Jul 28, 2015		Soil	S15-Jl25911				Х						Х	Х
BH11_0.5-0.6	Jul 28, 2015		Soil	S15-Jl25912		Χ									
BH11_1.0-1.1	Jul 28, 2015		Soil	S15-Jl25913				Х						Х	Х
BH11_2.1-2.2	Jul 28, 2015		Soil	S15-Jl25914		Χ									
BH11_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25915		Х									



Address:

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 Order No.: Received: Jul 30, 2015 11:32 AM

Level 18, Tower B, Citadel Tower 799 Pacific Highway

Report #: 466933

Due: Aug 6, 2015

Phone: +61 2 9406 1000

Priority: 5 Day

 Chatswood
 Phone:
 +61 2 9406 1000
 Priority:
 5 Day

 NSW 2067
 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	ВТЕХ	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory where analysis is co	nducted												
Melbourne Laboratory - NATA S	te # 1254 & 14271												
Sydney Laboratory - NATA Site	‡ 18217		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Laboratory - NATA Site	e # 20794												
External Laboratory													
BH11_3.8-3.9 Jul 28, 2015	Soil	S15-JI25916		Х									
BH12_0.1-0.2 Jul 27, 2015	Soil	S15-JI25917	Х						Х			Х	Χ
BH12_0.5-0.6 Jul 27, 2015	Soil	S15-Jl25918		Χ									
BH12_1.0-1.1 Jul 27, 2015	Soil	S15-Jl25919		Х									
BH12_2.0-2.1 Jul 27, 2015	Soil	S15-Jl25920		Х									
BH12_3.0-3.1 Jul 27, 2015	Soil	S15-Jl25921		Х									
BH12_3.8-3.9 Jul 27, 2015	Soil	S15-Jl25922		Х									
BH13_0.5-0.6 Jul 28, 2015	Soil	S15-Jl25923				Х						Х	Х
BH13_1.0-1.1 Jul 28, 2015	Soil	S15-Jl25924				Х						Х	Х
BH13_2.0-2.1 Jul 28, 2015	Soil	S15-Jl25925		Х									



MSB UNSW

Address:

Project Name:

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

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

Sydney Unit F3, Building F Brisbane
1/21 Smallwood Place
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

Level 18, Tower B, Citadel Tower 799 Pacific Highway

Report #: 466933

Phone: +61 2 9406 1000

Priority: 5 Day

NSW 2067 Fax: +61 2 9406 1000 Priority: 5 Day

NSW 2067 Fax: +61 2 9406 1002 Contact Name: Priya Dass

Project ID: GEOTLCOV24080AS

Eurofins | mgt Client Manager: Charl Du Preez

		Sample Detail			Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Metals M8	Metals M8 filtered	втех	Extended Metals Suite	Eurofins mgt Suite B14	BTEX and Volatile TRH	Moisture Set	Eurofins mgt Suite B4
Laboratory wh	ere analysis is c	onducted													
Melbourne Lab	oratory - NATA	Site # 1254 & 14	271												
Sydney Labora	atory - NATA Site	e # 18217			Х	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Χ
Brisbane Labo	ratory - NATA Si	ite # 20794													
External Labor	atory														
BH13_3.0-3.1	Jul 28, 2015		Soil	S15-Jl25926		Х									
BH13_3.8-3.9	Jul 28, 2015		Soil	S15-Jl25927		Χ									
DUP1	Jul 27, 2015		Soil	S15-Jl25928		Χ									
DUP2	Jul 27, 2015		Soil	S15-Jl25929		Χ									
DUP3	Jul 28, 2015		Soil	S15-JI25930							Χ			Х	Х
DUP4	Jul 28, 2015		Soil	S15-Jl25931				Χ						Х	Х
DUP5	Jul 28, 2015		Soil	S15-Jl25932		Χ									
RB	Jul 28, 2015		Water	S15-Jl25933					Х						Х
ТВ	Jul 28, 2015		Water	S15-Jl25934									Х		
TS	Jul 28, 2015		Water	S15-Jl25935						Χ					



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

ΑF

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.

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 substantial 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	t (if used)	N/A
Attempt to Chill was e	evident	Yes
Sample correctly pres	served	Yes
Appropriate sample c	containers have been used	Yes
Sample containers for	or volatile analysis received with minimal headspace	Yes
Samples received wit	ithin HoldingTime	Yes
Some samples have I	been subcontracted	No

Qualifier Codes/Comments

Code Description N/A Not applicable

Authorised by:

Bob Symons Senior Analyst-Asbestos (NSW)

Giffelland of the second of th

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

Eurofins; Impt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins; Impt be liable for consequential claimages including, but not limited to, log troffics, damages for refailure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and refates only to the terms tested. Unless indicated otherwise, the tests were performed on the samples as receiving.

Sample Receipt 1 Syd

From: Priya Dass <Priya.Dass@coffey.com>
Sent: Priya Dass <Priya.Dass@coffey.com>

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.

Priva 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





ABN - 50 005 085 521 e.mail: EnviroSales@eurofins.com.au

web: www.eurofins.com.au

Melbourne 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

Coffey Geotechnics Pty Ltd Chatswood Company name:

Contact name: Priya Dass

Project name: ADDITIONAL: UNSW Project ID: GEOTLCOV24080AS

COC number: Not provided

Turn around time: 5 Day

Aug 7, 2015 5:56 PM Date/Time received:

Eurofins | mgt reference: 468090

Sample information

- \mathbf{V} A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- \mathbf{V} Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 5 degrees Celsius.
- \mathbf{V} All samples have been received as described on the above COC.
- \square COC has been completed correctly.
- **7** Attempt to chill was evident.
- \mathbf{V} Appropriately preserved sample containers have been used.
- \mathbf{V} All samples were received in good condition.
- \square Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- \mathbf{V} Appropriate sample containers have been used.
- \boxtimes Some samples have been subcontracted.
- Custody Seals intact (if used). N/A

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.





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

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

ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

web : www.eurofins.com.au

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

Aug 7, 2015 5:56 PM Received: Due: Aug 17, 2015

Priority: 5 Day **Contact Name:** Priya Dass

		Sample Detail			Lead	Nickel	USA Leaching Procedure	Benzo[a]pyrene
Laboratory wh	ere analysis is c	onducted						
Melbourne Lab	oratory - NATA	Site # 1254 & 14	1271		Х	Х		
Sydney Labora	atory - NATA Site	# 18217					Х	Х
Brisbane Labo	ratory - NATA Si	te # 20794						
External Labor	atory		1	ı				
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
BH3_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06371		Х	Х	
BH1_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06372		Х	Х	
BH02_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06373		Х	Х	
BH05_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06374		Х	Х	
BH06_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06375		Х	Х	
BH11_0.2-0.3	Jul 13, 2015		TCLP	S15-Au06376	X	ļ	Х	
BH05_0.5-0.6	Jul 13, 2015		TCLP	S15-Au06377	Х		Х	X



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





Certificate of Analysis

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 Sample Matrix Eurofins mgt Sample No. Date Sampled			BH3_0.1-0.2 TCLP S15-Au06371 Jul 13, 2015	BH1_0.1-0.2 TCLP S15-Au06372 Jul 13, 2015	BH02_0.1-0.2 TCLP S15-Au06373 Jul 13, 2015	BH05_0.1-0.2 TCLP S15-Au06374 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 Sample Matrix Eurofins mgt Sample No. Date Sampled			BH06_0.1-0.2 TCLP S15-Au06375 Jul 13, 2015	BH11_0.2-0.3 TCLP S15-Au06376 Jul 13, 2015	BH05_0.5-0.6 TCLP S15-Au06377 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 HCI 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



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ABN - 50 005 085 521 e.mail : EnviroSales@eurofins.com.au

web : www.eurofins.com.au

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

Sample Detail								Benzo[a]pyrene
Laboratory who								
Melbourne Lab	Х	Х						
Sydney Labora			Х	Х				
Brisbane Labo								
External Labor								
Sample ID								
BH3_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06371		Х	Х	
BH1_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06372		Х	Х	
BH02_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06373		Х	Х	
BH05_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06374		Х	Х	
BH06_0.1-0.2	Jul 13, 2015		TCLP	S15-Au06375		Х	Х	
BH11_0.2-0.3 Jul 13, 2015 TCLP S15-Au06376							Х	
BH05_0.5-0.6	Χ		Χ	Х				



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
 mg/l: milligrams per litre

 ug/l: micrograms per litre
 ppm: Parts per million

 ppb: Parts per billion
 %: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

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.
- 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.
- $10. \ \ Duplicate \ RPD's \ are \ calculated \ from \ raw \ analytical \ data \ thus \ it \ is \ possible \ to \ have \ two \ sets \ of \ data.$

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Quality Control Results

Test			Units	Result 1			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	СР	%	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

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