

AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

PRELIMINARY/INTERIM REPORT

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-44

Stag Brewery 329060

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

This is a preliminary report which has not had final authorisation.

Approved By:



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PRELIMINARY/INTERIM REPORT

Preliminary

 SDG:
 150828-44
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329060

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977692	BH210		0.80	26/08/2015
11977693	BH210		2.20 - 2.80	26/08/2015
11977694	BH211		0.70	26/08/2015
11977695	BH211		2.20	26/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

(), <i>i</i>	ALcontrol La	aborator	ies	PRE	LIMI	NAR	Y/IN1	FERI			Preliminary
SDG: Job: Client	Reference:	150828-44 H_URS_W	IM-273	Location: Custome Attention	: St r: AE	ag Brev ECOM arv Mar	very		Order Number: Report Number: Superseded Report:	329060	
SOLIE)										
Results	s Legend		Lab Sample	No(s)	11977	11977	11977	11977			
x	Test				692	693	694	695			
	No Determinat	ion									
N	Possible		Custom Sample Refe	er erence	BH210	BH210	BH211	BH211			
			AGS Refer	ence							
			Depth (I	m)	0.80	2.20 - 2.80	0.70	2.20			
			Contain	er	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL			
Ammoniu	um Soil by Titration	1	All	NDPs: 0 Tests: 4	x	x	x	×			
Asbestos	s ID in Solid Sampl	es	All	NDPs: 0 Tests: 2	x		x				
Asbestos	s Quant Waste Li	imit	All	NDPs: 0 Tests: 1	x						
Easily Lil	berated Sulphide		All	NDPs: 0 Tests: 4	x	x	x	x			
EPH CW	/G (Aliphatic) GC (\$	S)	All	NDPs: 0 Tests: 4	x	x	x	x			
EPH CW	/G (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	x	x	x	x			
GRO by	GC-FID (S)		All	NDPs: 0 Tests: 4	x	x	x	x			
Hexavale	ent Chromium (s)		All	NDPs: 0 Tests: 4	x	x	×	×			
Metals in	n solid samples by (OES	All	NDPs: 0 Tests: 4	x	x	x	x			
PAH by (GCMS		All	NDPs: 0 Tests: 4	x	x	x	x			
рН			All	NDPs: 0 Tests: 4	x	x	x	x			
Sample of	description		All	NDPs: 0 Tests: 4	x	x	x	x			
Total Org	ganic Carbon		All	NDPs: 0 Tests: 4	x	x	x	x			
Total Sul	lphate		All	NDPs: 0 Tests: 4	x	x	x	x			
TPH CW	/G GC (S)		All	NDPs: 0 Tests: 4	x	x	x	x			

ALcontrol Labo	oratories	PRE	LIMI	NAR	//INT	I REPORT	Preliminary	
SDG: 150 Job: H_0 Client Reference: 150	SDG: 150828-44 Locatio Iob: H_URS_WIM-273 Custom Client Reference: Attention				ery shall		Order Number: Report Number: 329060 Superseded Report:	
SOLID Results Legend X Test	Lab Sample I	No(s)	11977692	11977693	11977694	11977695		
No Determination Possible	Custome Sample Refe	r œnce	BH210	BH210	BH211	BH211		
	AGS Refere	nce						
	Depth (m)	0.80	2.20 - 2.80	0.70	2.20		
	Containe		60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL		
VOC MS (S) All		NDPs: 0 Tests: 4	x	x	x	x		

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-44	Location:	Stag Brewery	Order Number:	329060
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Sample Descriptions

Grain Sizes												
very fine	<0.063mm	<0.063mm fine 0.06		med	dium 0.1m	m - 2mm	coarse	2mm - 1	0mm	very coars	se >10m	m
Lab Sample I	No(s) Custo	omer Sample Re	f. Depth (m)		Colour	Descrip	tion	Grain size	Inclu	isions	Inclusions 2	1
11977692	2	BH210	0.80		Dark Brown	Sandy (Loar	Clay n	0.1 - 2 mm	Sto	ones	None	I
11977693	3	BH210	2.20 - 2.80		Light Brown	Loamy S	Sand	0.1 - 2 mm	Vege	etation	Stones	
11977694	1	BH211	0.70		Dark Brown	Sandy (Loar	Clay n	0.1 - 2 mm	Sto	ones	Vegetation	
1197769	5	BH211	2.20		Light Brown	Loamy S	Sand	0.1 - 2 mm	Sto	ones	Vegetation]

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

PRELIMINARY/INTERIM REPORT

Preliminary

- Results Legend	0	uctomor Sampla P	DU040	DU040	DUD44	DUD44	
# ISO17025 accredited.		ustomer Sample R	BH210	BH210	BH211	BH211	
M mCERTS accredited. aq Aqueous / settled sample.		Bandh (m)					
diss.filt Dissolved / filtered sample.		Sample Type	0.80 Soil/Solid	2.20 - 2.80 Soil/Solid	0.70 Soil/Solid	2.20 Soil/Solid	
* Subcontracted test.		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015	
check the efficiency of the method.	The	Sampled Time Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
results of individual compounds wi samples aren't corrected for the rec	thin covery	SDG Ref	150828-44	150828-44	150828-44	150828-44	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s)	11977692	11977693	11977694	11977695	
Component	LOD/Units	Method					
Moisture Content Ratio (%	%	PM024	13	6.9	12	8.9	
of as received sample)							
Exchangeable Ammonia	<15	TM024	45.6	<15	<15	<15	
as NH4	mg/kg	T14400	M	M	M	M	
Organic Carbon, Total	<0.2 %	IM132	0.358	<0.2	<0.2	<0.2	
	1 nU	TM122	M	N 25	10.2	N 66	
pri	Units	110100	3.07 M	0.55 M	10.5 M	0.00 M	
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6	<0.6	<0.6	
	mg/kg		#	#	#	#	
Sulphide, Easily liberated	<15	TM180	<15	<15	<15	<15	
	mg/kg		♦ #	♦ #	♦ #	♦ #	
Arsenic	< 0.6	TM181	23.6	20.2	11.8	19.5	
Cadmium	rng/kg	TM104	M	M	M	0.201	
Caumum	<0.02 ma/ka	ιΝΙΟΊ	U.449 M	U.341 M	U.347 M	0.591	
Chromium	<0.9	TM181	25.9	16.6	17	24 1	
C. I O III O III	mg/kg		20.0 M	M	.,	<u>л</u> .,	
Copper	<1.4	TM181	31.2	5.29	9.01	6.47	
	mg/kg		М	М	М	М	
Lead	<0.7	TM181	32.7	5.73	44.5	7.8	
	mg/kg		М	М	М	М	
Mercury	<0.14	TM181	<0.14	<0.14	0.152	<0.14	
Niekol	mg/kg	TM101	M	M	16 F	M	
NICKEI	<0.2 ma/ka	11/11/01	24.5 M	21.2 M	10.0 M	22.0	
Selenium	<1 mg/kg	TM181	<1	<1	<1	<1	
	- ing/itg	,	#	#	#	#	
Zinc	<1.9	TM181	43.4	21.9	41.3	28.4	
	mg/kg		М	М	М	М	
Sulphate, Total	<48	TM221	481	<48	545	88.2	
	mg/kg		M	M	M	M	

ALcontrol Labor	atories	5								Preliminary
SDG: 1508. Job: H_UF	28-44 RS_WIM-	273	PREL Location: Customer:	Sta AE	ARY/INTE	ERI	M REPORT	Order Number: Report Number	: 329060	
Client Reference:			Attention:	Ga	ary Marshall			Superseded Re	port:	
PAH by GCMS Results Legend		Customer Sample R	BH210		BH210		BH211	BH211		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. totunfilt Total / unfiltered sample.		Depth (m) Sample Type	0.80 Soil/Solid		2.20 - 2.80 Soil/Solid		0.70 Soil/Solid	2.20 Soil/Solid		
 Subcontracted test. ** % recovery of the surrogate stand- check the efficiency of the method results of individual compounds w samples aren't corrected for the re 	ard to . The ithin covery	Date Sampled Sampled Time Date Received SDG Ref	26/08/2015 28/08/2015 150828-44		26/08/2015 28/08/2015 150828-44		26/08/2015 28/08/2015 150828-44	26/08/2015 28/08/2015 150828-44		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11977692		11977693		11977694	11977695		
Component	LOD/Un	its Method								
Naphthalene-d8 % recovery**	%	TM218	103		102		97.1	95.7		
Acenaphthene-d10 % recovery**	%	TM218	98.9		94.5		95.1	96.4		
Phenanthrene-d10 % recovery**	%	TM218	95.9		94.2		92.9	96.8		
Chrysene-d12 % recovery**	%	TM218	92.5		78.5		92	88.1		
Perylene-d12 % recovery**	%	TM218	94.6		86.2		97	95.7		
Naphthalene	<9 µg/	/kg TM218	<9	м	<9	М	53.8 M	<9	м	
Acenaphthylene	<12 µg/kg	TM218	<12	м	<12	М	14.8 M	<12	м	
Acenaphthene	<8 µg/	/kg TM218	<8	м	<8	М	48.1 M	<8	м	
Fluorene	<10 µg/ko	TM218	<10	м	<10	м	48.6 M	<10	м	
Phenanthrene	<15 µg/kc	TM218	27.7	м	<15	м	352 M	<15	м	
Anthracene	<16 ua/ka	TM218	<16	м	<16	м	78.8 M	<16	м	
Fluoranthene	<17 ug/kg	TM218	47	M	<17	M	389 M	<17	M	
Pyrene	<15 ug/kg	TM218	43.6	N	<15	M	317 M	<15		
Benz(a)anthracene	<14 ug/kg	TM218	48.1	N	<14	M	174 M	<14		
Chrysene	<10	, TM218	28.5		<10	IVI	151	<10		
Benzo(b)fluoranthene	<15	TM218	38.8		<15		199	<15		
Benzo(k)fluoranthene	<14	TM218	18.1		<14		90.7	<14		
Benzo(a)pyrene	<15	TM218	30		<15		147	<15		
Indeno(1,2,3-cd)pyrene	<18	TM218	<18		<18		77.5	<18		
Dibenzo(a,h)anthracene	<23	TM218	<23	IVI	<23	IVI	<23	<23		
Benzo(g,h,i)perylene	μg/κς <24	TM218	28.6	M	<24	M	M 105	<24		
PAH, Total Detected	μg/κς <118	3 TM218	311	M	<118	M	2250	<118		
USEPA 16	μg/κε]								
	L								-	

Preliminary

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SDG: 15082 Job: H_UR Client Reference: 1000000000000000000000000000000000000	28-44 8S_WIM-:	273	Location: Customer: Attention:	Sta AE	ag Brewery COM wy Marshall				Order Number: Report Number: Superseded Repo	329060	
			Attention.	08					ouperseucu repo		
Results Legend		Customer Sample R	BH210		BH210		BH211		BH211		
# ISO17025 accredited. M mCERTs accredited. aq Aqueous / settled sample. diss.fit Dissolved / filtered sample. tournfilt Total / unfiltered sample. Subcontracted test. " % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi	rd to The thin	Depth (m) Sample Type Date Sampled Sampled Time Date Received	0.80 Soil/Solid 26/08/2015 28/08/2015		2.20 - 2.80 Soil/Solid 26/08/2015 28/08/2015		0.70 Soil/Solid 26/08/2015 28/08/2015		2.20 Soil/Solid 26/08/2015 28/08/2015		
samples aren't corrected for the rec (F) Trigger breach confirmed	covery	SDG Ref Lab Sample No (s)	150828-44 11977692		150828-44 11977693		150828-44 11977694		150828-44 11977695		
1-5&+§@ Sample deviation (see appendix)		AGS Reference									
Component	LOD/Un	its Method									
GRO Surrogate % recovery**	%	1M089	105		119		109		110		
GRO TOT (Moisture	<44 ua/ka	TM089	<44	Ν.	<44	м	5160	м	<44 M		
Methyl tertiary butyl ether	<5 µq/	kg TM089	<5	IVI	<5	IVI	<5	IVI	<5		
(MTBE)		3	-	М	_	м	-	М	Μ		
Benzene	<10 µg/kg	TM089	<10	М	<10	м	<10	м	<10 M		
Toluene	<2 µg/	kg TM089	<2	М	<2	м	<2	м	<2 M		
Ethylbenzene	<3 µg/	kg TM089	<3	М	<3	м	<3	м	<3 M		
m,p-Xylene	<6 µg/	kg TM089	<6	М	<6	м	<6	м	<6 M		
o-Xylene	<3 µg/	kg TM089	<3	М	<3	м	<3	м	<3 M		
sum of detected mpo xylene by GC	<9 µg/	kg TM089	<9		<9		<9		<9		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24		<24		<24		<24		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10		<10		<10		<10		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10		<10		34.2		<10		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10		<10		1010		13.1		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10		<10		2060		<10		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100		<100		15100		<100		
Aliphatics >C16-C21	<100 µg/kg	TM173	3150		<100		23200		<100		
Aliphatics >C21-C35	<100 4100 µg/kg	TM173	18600		<100		57300		<100		
Aliphatics >C35-C44	<100 µg/kg	TM173	1920		<100		10600		<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	23700		<100		106000		<100		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10		<10		<10		<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10		<10		<10		<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10		<10		671		<10		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10		<10		1380		<10		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100		<100		4150		<100		
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100		<100		10500		<100		
Aromatics >EC21-EC35	<100 µg/kg	TM173	4960		<100		26600		<100		
Aromatics >EC35-EC44	<100 µg/kg	TM173	1400		<100		10500		<100		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100		<100		3890		<100		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	6360		<100		51900		<100		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	30000		<100		163000		<100		

ALcontrol Labora	ontrol Laboratories PRELIMINARY/INTERIM REPORT								Prelimina	ary	
SDG: 15082 Job: H_UF Client Reference: 15082	28-44 RS_WIM-:	273	Location: Customer: Attention:	Sta AE Ga	ag Brewery COM ary Marshall			Order Number: Report Number: Superseded Repor	329060 t :		
VOC MS (S)											
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Customer Sample R Depth (m)	BH210 0.80		BH210 2.20 - 2.80	BH211 0.70		BH211 2.20			
tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method.	ard to . The	Sample Type Date Sampled Sampled Time	Soil/Solid 26/08/2015 		Soil/Solid 26/08/2015	Soil/Solid 26/08/2015 28/08/2015		Soil/Solid 26/08/2015 			
results of individual compounds wi samples aren't corrected for the red (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	ithin covery	SDG Ref Lab Sample No.(s)	150828-44 11977692		150828-44 11977693	150828-44 11977694		150828-44 11977695			
Component	LOD/Un	its Method									
Dibromofluoromethane**	%	TM116	130		119	128		123			
Toluene-d8**	%	TM116	102		111	103		111			
4-Bromofluorobenzene**	%	TM116	89.8		102	94.5		102			
Dichlorodifluoromethane	<6 µg/	kg TM116	<6	м	<6 M	<6	м	<6 M			
Chloromethane	<7 µg/	kg TM116	<7	#	<7 #	<7	#	<7 #			
Vinyl Chloride	<6 µg/	kg TM116	<6	м	<6 M	<6	м	<6 M			
Bromomethane	<10 µg/kg	TM116	<10	м	<10 M	<10	м	<10 M			
Chloroethane	<10 µg/kg	TM116	<10	м	<10 M	<10	м	<10 M			
Trichlorofluorormethane	<6 µg/	kg TM116	<6	м	<6 M	<6	м	<6 M			
1,1-Dichloroethene	<10 µg/kg	TM116	<10	#	<10 #	<10	#	<10 #			
Carbon Disulphide	<7 µg/	kg TM116	<7	M	<7 M	<7	м	<7 M			
Dichloromethane	<10 µg/kg	TM116	<10	#	<10 #	<10	#	<10 #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	M	<10 M	<10	м	<10 M			
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	м	<10 M	<10	м	<10 M			
1,1-Dichloroethane	<8 µg/	kg TM116	<8	м	<8 M	<8	м	<8 M			
cis-1,2-Dichloroethene	<6 µg/	kg TM116	<6	м	<6 M	<6	м	<6 M			
2,2-Dichloropropane	<10 µg/kg	TM116	<10	м	<10 M	<10	м	<10 M			
Bromochloromethane	<10 µg/kg	TM116	<10	м	<10 M	<10	м	<10 M			
Chloroform	<8 µg/	kg TM116	<8	М	<8 M	<8	м	<8 M			
1,1,1-Trichloroethane	<7 µg/	kg TM116	<7	м	<7 M	<7	м	<7 M			
1,1-Dichloropropene	<10 µg/kg	TM116	<10	М	<10 M	<10	м	<10 M			
Carbontetrachloride	<10 µg/kg	TM116	<10	М	<10 M	<10	м	<10 M			
1,2-Dichloroethane	<5 µg/	kg TM116	<5	м	<5 M	<5	м	<5 M			
Benzene	<9 µg/	kg TM116	<9	м	<9 M	<9	м	<9 M			
Trichloroethene	<9 µg/	kg TM116	<9	#	<9 #	<9	#	<9 #			
1,2-Dichloropropane	<10 µg/kg	TM116	<10	м	<10 M	<10	м	<10 M			
Dibromomethane	<9 µg/	kg TM116	<9	м	<9 M	<9	м	<9 M			
Bromodichloromethane	<7 µg/	kg TM116	<7	M	<7 M	<7	м	<7 M			
cis-1,3-Dichloropropene	<10 µg/k <u>c</u>	TM116	<10	М	<10 M	<10	м	<10 M			
Toluene	<7 µg/	kg TM116	<7	M	<7 M	<7	м	<7 M			
trans-1,3-Dichloropropene	<10 µg/k <u>c</u>	TM116	<10		<10	<10		<10			
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	М	<10 M	<10	м	<10 M			

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-44	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329060
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

# ISO17025 accredited.			DIIZIU	DIIZIU	DIIZII	DIIZII	
aq Aqueous / settled sample.		Depth (m)	0.80	2,20 - 2,80	0.70	2 20	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
* Subcontracted test. ** % recovery of the surrogate standa	ard to	Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015	
check the efficiency of the method.	. The	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
samples aren't corrected for the re-	covery	SDG Ref	150828-44 11977692	150828-44 11977693	150828-44 11977694	150828-44 11977695	
1-5&+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Un	its Method					
1,3-Dichloropropane	<7 µg/	kg TM116	<7	<7	<7	<7	
Tatua ablana ath an a	4 5		M	M	M	M	
retrachioroethene	<5 µg/	кд пипть	<5 M	<5 M	<5 M	<5 M	
Dibromochloromethane	<10	TM116	<10	<10	<10	<10	
	µg/kg		М	М	м	М	
1,2-Dibromoethane	<10	TM116	<10	<10	<10	<10	
	µg/kg		M	M	M	M	
Chlorobenzene	<5 µg/	kg IM116	<5	<5	<5	<5	
1 1 1 2-Tetrachloroethane	<10	TM116	<10	<10	<10	<10	
.,.,	µg/kg		M	M	М	М	
Ethylbenzene	<4 µg/	kg TM116	<4	<4	<4	<4	
			М	М	М	М	
p/m-Xylene	<10	TM116	<10	<10	<10	<10	
	μg/kg	TM116	#	#	#	#	
О-Лунене	µq/kc	TIVITIO	<10 M	<10 M	<10 M	<10 M	
Styrene	<10	TM116	<10	<10	<10	<10	
-	µg/kg		#	#	#	#	
Bromoform	<10	TM116	<10	<10	<10	<10	
	µg/kg		M	M	M	M	
Isopropylbenzene	<5 µg/	kg IM116	<5	<5	<5 	<5	
1 1 2 2-Tetrachloroethane	<10	TM116	+ <10	+ <10	<10	+ <10	
1,1,2,2 101100110100110110	µg/kg		M	M	M	M	
1,2,3-Trichloropropane	<16	TM116	<16	<16	<16	<16	
	µg/kg	I	М	М	М	М	
Bromobenzene	<10	TM116	<10	<10	<10	<10	
Propylbenzene	μg/kg	TM116	M	M	M	M	
гторушение	ua/ka	TIVITIO	<10 M	<10 M	<10 M	<10 M	
2-Chlorotoluene	<9 µg/	kg TM116	<9	<9	<9	<9	
		-	М	М	М	М	
1,3,5-Trimethylbenzene	<8 µg/	kg TM116	<8	<8	<8	<8	
1 Ohlanstalisens	.10	T1440	M	M	M	M	
4-Chiorotoluene	<10 ua/ka	11/1116	<10 M	<10 M	<10 M	<10 M	
tert-Butvlbenzene	<14	TM116	<14	<14	<14	<14	
	µg/kg		М	М	м	М	
1,2,4-Trimethylbenzene	<9 µg/	kg TM116	<9	<9	<9	<9	
			#	#	#	#	
sec-Butylbenzene	<10	IM116	<10	<10	<10	<10	
4-Isopropyltoluene	<10	TM116	<10	<10	<10	<10	
	µg/kg		M	M	M	M	
1,3-Dichlorobenzene	<8 µg/	kg TM116	<8	<8	<8	<8	
			М	М	М	М	
1,4-Dichlorobenzene	<5 µg/	kg TM116	<5	<5	<5	<5	
n Putulbanzana	<i></i> 11	TM116	M	M	M	M	
n-Bulyibenzene	ua/ka	TIVITIO	\$11	\$11	\$11	\$11	
1,2-Dichlorobenzene	<10	TM116	<10	<10	<10	<10	
	µg/kg		М	М	м	М	
1,2-Dibromo-3-chloroprop	<14	TM116	<14	<14	<14	<14	
ane	µg/kg		M	M	M	M	
i ert-amyl methyl ether	<10 uo/ko	IM116	<10 <u>"</u>	<10 <u>"</u>	<10 	<10 <u>"</u>	
1.2.4-Trichlorobenzene	<20	TM116	# <20	# <20	# <20	# <20	
, .,	µg/kg						
Hexachlorobutadiene	<20	TM116	<20	<20	<20	<20	
	µg/kg						
Naphthalene	<13	TM116	<13	<13	<13	<13	
	µу/ко		M	M	M	M	

PRELIMINARY/INTERIM REPORT

Preliminary

Results Legend Results Legend ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fitt Disolved / fittered sample. toLunfitt Total / unfittered sample. Subcontracted fest.		Customer Sample R Depth (m) Sample Type	0.80 Soil/Solid 26(08/2015	BH210 2.20 - 2.80 Soil/Solid 26(08/2015	0.70 Soil/Solid 28(08/2015	BH211 2.20 Soil/Solid 28(08/2015	
** % recovery of the surrogate stan	dard to	Sampled Time					
check the efficiency of the methor results of individual compounds	d. The within	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
samples aren't corrected for the (F) Trigger breach confirmed	ecovery	Lab Sample No.(s)	11977692	11977693	11977694	11977695	
1-5&+§@ Sample deviation (see appendix)	1	AGS Reference					
Component	LOD/Unit	s Method	-00	-00	-00	-00	
1,2,3-Trichlorobenzene	<20	TM116	<20 #	<20 #	<20 #	<20 #	
	µ9/N9		#	#	#	#	
	<u> </u>						
		_					
	+						
	1						

PRELIMINARY/INTERIM REPORT

Preliminary

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	SDG:	150828-44	Location:	Stag Brewery	Order Number:	
	Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329060
	Client Reference:		Attention [.]	Gary Marshall	Superseded Report:	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH210 0.80 SOLID 26/08/2015 00:00:00 29/08/2015 10:30:50 150828-44 11977692 TM048	03/09/2015	Rebecca Rawlings	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH211 0.70 SOLID 26/08/2015 00:00:00 29/08/2015 10:17:28 150828-44 11977694 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

SDG:

Job:

PRELIMINARY/INTERIM REPORT

Preliminary

150828-44 Location: Stag Brewery Order Number: H_URS_WIM-273 AEČOM 329060 Customer: Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP			Campio	Controllow
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C.

NA = not applicable.

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SDG:

Job:

PRELIMINARY/INTERIM REPORT

150828-44 Location: Stag Brewery Order Number: H_URS_WIM-273 AEČOM 329060 Customer: Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Test Completion Dates

Lab Sample No(s)	11977692	11977693	11977694	11977695
Customer Sample Ref.	BH210	BH210	BH211	BH211
AGS Ref.				
Depth	0.80	2.20 - 2.80	0.70	2.20
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	03-Sep-2015		03-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	02-Sep-2015	07-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pН	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	29-Aug-2015	28-Aug-2015	29-Aug-2015	28-Aug-2015
Total Organic Carbon	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Total Sulphate	08-Sep-2015	04-Sep-2015	07-Sep-2015	04-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

150828-44

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 3 Superseded Report:

329060

Preliminary

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1219	QC 1231
Easily Liberated Sulphide	TM180	93.21 49.14 : 123.89	94.71 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1165	QC 1197
Total Aliphatics	TM173	97.92	92.08
>C12-C35		69.19 : 111.75	71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1197
Total Aromatics >EC12-EC35	TM173	85.33 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1100	QC 1290	QC 1294
Benzene by GC	TM089	110.0	100.0	101.5
(Moisture Corrected)		82.67 : 117.96	76.23 : 120.71	79.00 : 121.00
Ethylbenzene by GC	TM089	110.5	100.5	104.0
(Moisture Corrected)		80.45 : 118.61	73.32 : 122.02	79.00 : 121.00
m & p Xylene by GC	TM089	110.0	100.75	104.25
(Moisture Corrected)		79.25 : 119.43	72.90 : 122.64	79.00 : 121.00
MTBE GC-FID (Moisture	TM089	114.5	101.0	106.5
Corrected)		79.10 : 122.51	72.17 : 124.81	74.48 : 125.29
o Xylene by GC (Moisture	TM089	111.5	100.5	104.5
Corrected)		80.03 : 117.19	71.65 : 124.40	79.00 : 121.00
QC	TM089	102.79 75.74 : 124.65	105.5 55.00 : 145.00	98.6 73.70 : 123.60
Toluene by GC (Moisture	TM089	110.5	100.5	102.5
Corrected)		82.06 : 117.54	74.60 : 120.38	79.00 : 121.00

150828-44

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329060 Superseded Report:

Hexavalent Chromium (s)

Client Reference:

SDG:

Job:

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	100.0 92.20 : 106.60	102.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1206	QC 1292
Aluminium	TM181	99.23	108.46
		86.49 : 129.71	86.49 : 129.71
Antimony	TM181	94.27	95.34
		77.50 : 122.50	77.50 : 122.50
Arsenic	TM181	92.92	92.92
		82.63 : 117.37	82.63 : 117.37
Barium	TM181	96.24	99.25
		79.45 : 120.55	79.45 : 120.55
Beryllium	TM181	98.91	100.31
		85.92 : 121.27	85.92 : 121.27
Boron	TM181	105.34	109.92
		77.41 : 143.83	77.41 : 143.83
Cadmium	TM181	95.8	95.63
		81.95 : 118.05	81.95 : 118.05
Chromium	TM181	93.33	96.47
		81.29 : 118.71	81.29 : 118.71
Cobalt	TM181	95.83	96.67
		83.86 : 116.14	83.86 : 116.14
Copper	TM181	97.7	98.51
		78.57 : 121.43	78.57 : 121.43
Iron	TM181	95.86	101.38
		87.50 : 122.82	87.50 : 122.82
Lead	TM181	93.7	92.91
		74.18 : 117.25	74.18 : 117.25
Manganese	TM181	100.0	100.0
		82.91 : 117.09	82.91 : 117.09
Mercury	TM181	94.3	93.47
		81.99 : 118.01	81.99 : 118.01
Molybdenum	TM181	92.2	92.36
		81.45 : 118.55	81.45 : 118.55
Nickel	TM181	95.93	97.67
		79.64 : 120.36	79.64 : 120.36
Phosphorus	TM181	97.76	97.32
		81.03 : 118.97	81.03 : 118.97
Selenium	TM181	105.3	105.47
		87.05 : 121.93	87.05 : 121.93
Strontium	TM181	98.08	98.47
		83.64 : 116.36	83.64 : 116.36
Thallium	TM181	87.56	91.38
		77.50 : 122.50	77.50 : 122.50
Tin	TM181	92.03	92.69
		78.30 : 113.98	78.30 : 113.98
Titanium	TM181	103.91	103.13
		71.02 : 128.98	71.02 : 128.98

150828-44

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329060 Superseded Report:

Metals in solid samples by OES

		QC 1206	QC 1292
Vanadium	TM181	93.53 86.61 : 113.39	95.0 86.61 : 113.39
Zinc	TM181	97.73 89.82 : 114.54	98.05 89.82 : 114.54

PAH by GCMS

Client Reference:

SDG:

Job:

Component	Method Code	QC 1134	QC 1154	QC 1106
Acenaphthene	TM218	88.5 78.41 : 114.87	92.0 77.34 : 118.20	91.5 78.84 : 114.36
Acenaphthylene	TM218	80.5 72.38 : 111.60	86.5 62.65 : 116.35	85.5 65.50 : 119.50
Anthracene	TM218	89.5 72.78 : 117.53	89.5 73.54 : 114.21	91.0 75.54 : 110.88
Benz(a)anthracene	TM218	88.0 79.50 : 130.50	102.5 74.99 : 132.24	97.5 78.02 : 127.38
Benzo(a)pyrene	TM218	91.0 79.50 : 130.50	102.0 80.75 : 127.25	99.5 79.21 : 128.01
Benzo(b)fluoranthene	TM218	87.5 78.10 : 127.57	99.5 75.84 : 127.12	96.0 86.21 : 131.42
Benzo(ghi)perylene	TM218	95.0 81.67 : 122.61	97.0 74.74 : 124.03	95.0 80.11 : 120.52
Benzo(k)fluoranthene	TM218	97.0 81.20 : 118.10	98.0 80.00 : 125.00	97.0 78.77 : 120.72
Chrysene	TM218	94.5 80.60 : 117.80	98.0 77.24 : 120.84	94.5 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	104.0 77.93 : 124.42	96.5 76.00 : 122.50	93.5 76.39 : 122.63
Fluoranthene	TM218	91.5 80.39 : 114.39	92.5 78.51 : 118.75	95.0 77.25 : 117.75
Fluorene	TM218	92.0 79.50 : 118.50	93.0 76.95 : 117.18	95.5 79.28 : 117.35
Indeno(123cd)pyrene	TM218	100.0 80.30 : 128.30	98.5 75.34 : 127.46	93.0 78.87 : 122.50
Naphthalene	TM218	97.5 82.25 : 118.25	95.0 76.24 : 112.91	93.0 74.75 : 118.25
Phenanthrene	TM218	95.5 71.53 : 114.48	93.5 76.49 : 119.30	95.0 78.61 : 113.98
Pyrene	TM218	91.5 79.12 : 114.39	91.0 78.25 : 118.17	94.0 76.15 : 115.26

pН

Component	Method Code	QC 1218	QC 1227
pН	TM133	100.25 97.19 : 102.81	100.5 97.19 : 102.81

Total Organic Carbon

PRELIMINARY/INTERIM REPORT

		1 1 1 2 2 1			
SDG: Job: Client Reference:	150828-44 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: 329060 Superseded Report:	

Total Organic Carbon

Component	Method Code	QC 1245	QC 1297
Total Organic Carbon	TM132	98.17 89.40 : 103.09	97.72 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1273	QC 1292
Total Sulphate	TM221	102.27 78.49 : 121.51	103.79 78.49 : 121.51	99.24 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1172	QC 1128
1,1,1,2-tetrachloroethane	TM116	101.0 76.60 : 121.00	95.6 83.24 : 124.28
1,1,1-Trichloroethane	TM116	96.2 77.80 : 123.40	100.8 81.77 : 121.07
1,1,2-Trichloroethane	TM116	90.6 75.40 : 119.80	100.4 79.24 : 112.23
1,1-Dichloroethane	TM116	99.8 80.84 : 124.49	103.0 72.58 : 116.06
1,2-Dichloroethane	TM116	104.8 91.00 : 135.67	118.8 77.50 : 122.50
1,4-Dichlorobenzene	TM116	105.6 80.88 : 114.60	96.2 73.23 : 116.39
2-Chlorotoluene	TM116	94.2 74.00 : 117.20	85.6 69.22 : 110.64
4-Chlorotoluene	TM116	90.2 71.20 : 113.20	89.0 68.57 : 106.26
Benzene	TM116	97.6 79.60 : 125.20	103.2 84.33 : 124.27
Carbon Disulphide	TM116	99.4 74.91 : 122.14	110.4 77.20 : 122.80
Carbontetrachloride	TM116	100.2 76.80 : 121.20	98.2 84.20 : 119.90
Chlorobenzene	TM116	102.0 83.47 : 116.82	102.4 85.28 : 129.96
Chloroform	TM116	98.4 82.00 : 128.80	108.2 82.73 : 119.72
Chloromethane	TM116	117.2 74.62 : 135.86	123.4 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	103.6 81.20 : 128.00	108.4 73.56 : 118.93
Dibromomethane	TM116	88.4 73.40 : 116.60	104.4 73.40 : 116.60
Dichloromethane	TM116	101.6 86.60 : 137.00	113.2 76.16 : 121.98

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SDG:	150828-44	Location:	Stag Brewery	Order Number:	220060
Client Reference:		Attention:	Gary Marshall	Superseded Report:	329060
VOC MS (S)					

		QC 1172	QC 1128
Ethylbenzene	TM116	96.6 73.60 : 115.60	94.0 80.07 : 125.98
Hexachlorobutadiene	TM116	114.0 33.65 : 130.56	69.0 30.92 : 132.28
Isopropylbenzene	TM116	92.0 72.52 : 117.52	82.6 69.27 : 125.32
Naphthalene	TM116	107.0 83.23 : 126.48	110.0 79.15 : 121.98
o-Xylene	TM116	92.4 69.60 : 110.40	77.6 75.46 : 111.52
p/m-Xylene	TM116	94.1 71.30 : 112.70	90.2 76.97 : 121.75
Sec-Butylbenzene	TM116	116.4 59.20 : 125.20	69.6 49.27 : 129.90
Tetrachloroethene	TM116	104.6 85.92 : 127.92	102.2 87.96 : 133.65
Toluene	TM116	90.2 76.08 : 110.17	99.0 79.23 : 114.58
Trichloroethene	TM116	96.4 78.17 : 121.37	94.6 84.09 : 114.24
Trichlorofluoromethane	TM116	102.2 83.78 : 132.82	107.4 76.22 : 114.82
Vinyl Chloride	TM116	94.6 66.81 : 138.46	98.2 59.68 : 118.68

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.





















-			a. a			
G:	150828-44 H LIDS M/M 272	Location:	Stag Brewery	Order Nur Benert Nu	nber:	20060
, ent Refere	ח_טוגס_אאוואו-273 nce:	Attention:	Gary Marshall	Supersed	ed Report: 32	23000
			Chromatagram	n		
			Chromatograf	N		
ysis: G	RO by GC-FID (S)	Sample No Sample ID :	EH210	Depth :	0.80	
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		12006569	GRO_S.DATA - HP6850	Signal 1		
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PRELIMINARY/INTERIM REPORT

SDG:	150828-44	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshal

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

329060

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	IATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	ENDOVEREND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	BND OVER BND	GCFID
EPH (OLEANED UP)	D&C	HEXANEACETONE	BND OVER BND	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	BND OVER BND	GCFID
POB TOT / POB CON	D&C	HEXANEACETONE	ENDOVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040)EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAFID GC	WET	HEXANEACETONE	SHAVER	GCEZ
SEM VOLATILEORGANIC	WET	DOMACETONE	SONCATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
E H	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID'LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by R	TCE	LIQUID'LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Orodolte	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Tremolile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Preliminary

PRELIMINARY/INTERIM REPORT

SDG:	150828-44	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329060
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	WhiteAsbestos
Amoste	BrownAsbestos
Oroddalte	Blue Asbestos
Fibrous Adinoite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-48

Stag Brewery 329008

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150828-48
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329008

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977832	BH212		0.60	27/08/2015
11977833	BH212		1.80 - 2.50	27/08/2015
11977835	BH213		0.60	27/08/2015
11977837	BH213		1.70 - 2.00	27/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories CERTIFICATE OF ANALYSIS					[Validated			
SDG: 15 Job: H_ Client Reference: 15	0828-48 _URS_WIM-273	Location: Customer Attention	Sta r: AE : Ga	ag Brew COM ary Mars	very shall		Order Number: Report Number: 32900 Superseded Report:)8	
SOLID Results Legend	Lab Sample	No(s)	11977832	11977833	11977835	11977837			
No Determination Possible	Custom Sample Refe	er erence	BH212	BH212	BH213	BHZ 13			
	AGS Refer	AGS Reference Depth (m)							
	Depth (r			1.80 - 2.50	0.60	1.70 - 2.00			
	Contain	er	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	400g VUC (ALE2 15) 400g Tub (ALE214) 250g Amber Jar (AL			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4	x	×	x	x			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	x		x				
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4	x	x	x	x			
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	x	x	x	x			
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	x	x	<mark>x</mark>	x			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4	x	x	x				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4	x	x	x	x			
Metals in solid samples by OES	S All	NDPs: 0 Tests: 4	x	x	x	x			
PAH by GCMS	All	NDPs: 0 Tests: 4	x	x	x	x			
pH	All	NDPs: 0 Tests: 4	×	×	x	x			
Sample description	All	NDPs: 0 Tests: 4	x	x	x	x			
Total Organic Carbon	All	NDPs: 0 Tests: 4	x	x	x	x			
Total Sulphate	All	NDPs: 0 Tests: 4	x	x	x	x			
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	x	x	x	X			
VOC MS (S)	All	NDPs: 0 Tests: 4	x	x	x				
CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-48	Location:	Stag Brewery	Order Number: Report Number:	320008
Client Reference:	11_01(3_00100-275	Attention:	Gary Marshall	Superseded Report:	329000

Sample Descriptions

Grain Sizes											
very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mn	n - 2mm	coarse	2mm - 1	0mm	very coar	rse >10m
Lab Sample	No(s) Custo	omer Sample Ref	. Depth (m)		Colour	Descrip	tion	Grain size	Inclu	usions	Inclusions 2
1197783	2	BH212	0.60	Da	rk Brown	Sandy L	oam	0.1 - 2 mm	Sto	ones	None
1197783	3	BH212	1.80 - 2.50	Lig	ht Brown	Sand	ł	0.1 - 2 mm	Sto	ones	None
1197783	5	BH213	0.60	Da	rk Brown	Sandy C Loan	Clay า	0.1 - 2 mm	Sto	ones	Tile/Insulation Board
1197783	7	BH213	1.70 - 2.00	Lig	ht Brown	Sand	ł	0.1 - 2 mm	Sto	ones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

Results Legend		Customer Sample R	BH212	BH212	BH213	BH213	
# ISO17025 accredited.							
aq Aqueous / settled sample.		Donth (m)	0.00	4 00 0 50	0.00	4 70 0 00	
diss.filt Dissolved / filtered sample.		Sample Type	0.60 Soil/Solid	Soil/Solid	0.60 Soil/Solid	Soil/Solid	
* Subcontracted test.		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015	
** % recovery of the surrogate standar	rd to The	Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00	
results of individual compounds wit	thin	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
samples aren't corrected for the rec (F) Trigger breach confirmed	overy	Lab Sample No (s)	11977832	11977833	11977835	11977837	
1-5&+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	s Method					
Moisture Content Ratio (%	%	PM024	7	5.7	17	6.5	
of as received sample)							
Exchangeable Ammonia	<15	TM024	18.2	<15	<15	<15	
as NH4	mg/kg		М	М	М	M	
Organic Carbon, Total	<0.2 %	5 TM132	<0.2	<0.2	2.07	<0.2	
			М	М	М	М	
рН	1 pH	TM133	8.95	7.72	8.04	7.84	
	Units		M	M	M	M	
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6	<0.6	<0.6	
	mg/kg		#	#	#	#	
Sulphide, Easily liberated	<15	TM180	<15	<15	<15	<15	
	mg/kg		♦ #	♦ #	♦ #	♦ #	
Arsenic	<0.6	TM181	19.2	18.8	19.1	19.1	
	mg/kg		М	М	М	M	
Cadmium	<0.02	TM181	1.44	0.393	0.547	0.389	
	mg/kg		M	M	M	M	
Chromium	<0.9	TM181	6.94	16.9	17.1	20.2	
	mg/kg		Μ	М	Μ	Μ	
Copper	<1.4	TM181	13.9	4.3	29.6	6.42	
	mg/kg		M	M	M	M	
Lead	<0.7	TM181	271	5.92	2910	6.91	
	mg/kg		М	М	М	М	
Mercury	<0.14	TM181	<0.14	<0.14	<0.14	<0.14	
	mg/kg		М	М	М	М	
Nickel	<0.2	TM181	6.81	19.2	14.7	22	
	mg/kg		М	М	М	М	
Selenium	<1 mg/k	g TM181	<1	<1	<1	<1	
		- -	#	#	#	#	
Zinc	<1.9	TM181	276	23.4	906	26.2	
	mg/kg		М	М	М	М	
Sulphate, Total	<48	TM221	1090	49.6	7440	80.7	
· ·	mg/kg		М	М	М	М	

ALcontrol Labo	CER	RTI	FICATE OF AN	NALYSIS			Validated		
SDG: 1508 Job: H_U Client Reference: 1508	328-48 RS_WIM∹	273	Location: Customer: Attention:	Sta AE Ga	ag Brewery ECOM ary Marshall		Order Number: Report Number: Superseded Repo	329008 rt:	
PAH by GCMS									
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fit Disolved / filtered sample. tot.unfit Total / unfiltered sample. * % recovery of the surrogate stancheck the efficiency of the methoresults of individual compounds: samples aren't corrected for the r (F) Trigger breach confirmed 1-5&&§@ Sample deviation (see appendix)	dard to d. The within 'ecovery	Customer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977832		BH212 1.80 - 2.50 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977833	BH213 0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977835	BH213 1.70 - 2.00 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977837		
Component	LOD/Un	its Method							
Naphthalene-d8 %	%	TM218	97.6		94.5	98.6	96.2		
Acenaphthene-d10 % recovery**	%	TM218	94.2		90.6	95	92.2		
Phenanthrene-d10 % recovery**	%	TM218	91.1		87.3	91.2	89.6		
Chrysene-d12 % recovery**	%	TM218	91.4		77.2	90.4	79		
Perylene-d12 % recovery**	%	TM218	97.3		78.4	95.7	80.7		
Naphthalene	<9 µg/	kg TM218	<9	М	<9 M	27.4 M	<9 M		
Acenaphthylene	<12 µg/kc	I M218	20.5	М	<12 M	27.8 M	<12 M		
Acenaphthene	<8 µg/	kg TM218	<8	M	<8 M	15.9 M	<8 M		
Fluorene	<10 µg/kg	TM218	<10	М	<10 M	12.1 M	<10 M		
Phenanthrene	<15 µg/kg	TM218	218	М	<15 M	329 M	<15 M		
Anthracene	<16 µg/kg	TM218	85.9	М	<16 M	71.8 M	<16 M		
Fluoranthene	<17 µg/kg	TM218	1270	М	<17 M	820 M	<17 M		
Pyrene	<15 µg/kg	TM218	975	М	<15 M	729 M	<15 M		
Benz(a)anthracene	<14 µg/kg	TM218	927	М	<14 M	449 M	<14 M		
Chrysene	<10 µg/kg	TM218	908	М	<10 M	414 M	<10 M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	1460	М	<15 M	588 M	<15 M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	503	М	<14 M	255 M	<14 M		
Benzo(a)pyrene	<15 µg/kg	TM218	1050	М	<15 M	485 M	<15 M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	668	М	<18 M	270 M	<18 M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	195	М	<23 M	73.2 M	<23 M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	755	М	<24 M	358 M	<24 M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	9030		<118	4920	<118		

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ALcontrol Labor	atories	3	CER	TI	FICATE OF A		LYSIS				Validated
SDG: 1508: Job: H_UF Client Reference:	28-48 RS_WIM-	273	Location: Customer: Attention:	Sta AE Ga	ag Brewery COM ry Marshall	_ 1			Order Number: Report Number: Superseded Repor	329008 t:	
TPH CWG (S)											
Results Legend ISO17025 accredited. M mCERTs accredited. M mCERTs accredited. aq Aqueous / settide sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate stand, check the efficiency of the method results of individual compounds w samples aren't corrected for the re (F) Trigger preach confirmed 1.58.660 Sample deviation (see approach)	ard to . The ithin covery	Customer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s)	BH212 0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977832		BH212 1.80 - 2.50 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977833		BH213 0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977835		BH213 1.70 - 2.00 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977837		
Component	LOD/Un	AGS Reference its Method									
GRO Surrogate % recovery**	%	TM089	114		127		76		110		
GRO TOT (Moisture	<44	TM089	<44		<44		<44		<44		
Methyl tertiary butyl ether (MTBE)	μg/κί <5 μg/	/kg TM089	<5	M	M <5 M		<5	M	M <5 M		
Benzene	<10 µg/kg	TM089	<10	м	<10 M		<10	м	<10 M		
Toluene	<2 µg	/kg TM089	<2	М	<2 M		<2	М	<2 M		
Ethylbenzene	<3 µg,	/kg TM089	<3	М	<3 M		<3	М	<3 M		
m,p-Xylene	<6 µg,	/kg TM089	<6	М	<6 M		<6	м	<6 M		
o-Xylene	<3 µg,	/kg TM089	<3	М	<3 M		<3	М	<3 M		
sum of detected mpo xylene by GC	<9 µg	rkg I M089	<9		<9		<9		<9		
GC	<24 µg/kg		~24		\$24		~24		×24		
Aliphatics >C5-C6	10<10	1 M089	<10		<10		<10		<10		
Aliphatics >C6-C8	<10 µg/kç	TM089	<10		<10		<10		<10		
Aliphatics >C8-C10	<10 µg/kç	TM089	<10		<10		<10		<10		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10		<10		<10		<10		
Aliphatics >C12-C16	<100 µg/kç) TM173	<100		<100		<100		<100		
Aliphatics >C16-C21	<100 µg/kç) TM173	<100		<100		<100		<100		
Aliphatics >C21-C35	<100 µg/kç) TM173	<100		<100		6060		<100		
Aliphatics >C35-C44	<100 µg/kç) TM173	<100		<100		<100		<100		
Total Aliphatics >C12-C44	<100 µg/kç) TM173	<100		<100		6060		<100		
Aromatics >EC5-EC7	<10 µg/kç	TM089	<10		<10		<10		<10		
Aromatics >EC7-EC8	<10 µg/kç	TM089	<10		<10		<10		<10		
Aromatics >EC8-EC10	<10 µg/kç	TM089	<10		<10		<10		<10		
Aromatics >EC10-EC12	<10 µg/kç	TM089	<10		<10		<10		<10		
Aromatics >EC12-EC16	<100 µg/kg) TM173	<100		<100		2150		<100		
Aromatics >EC16-EC21	<100 µg/kg) TM173	496		<100		10600		<100		
Aromatics >EC21-EC35	<100 µg/kg) TM173	4600		<100		31100		<100		
Aromatics >EC35-EC44	<100 µg/kg) TM173	<100		<100		10900		<100		
Aromatics >EC40-EC44	<100 µg/kg) TM173	<100		<100		3970		<100		
Total Aromatics >EC12-EC44	<100 µg/kg) TM173	5100		<100		54800		<100		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg) TM173	5100		<100		60900		<100		

ALcontrol Labora	atories	i	CER	RLI	FICATE OF AN	NALYSIS			Validated
SDG: 15082 Job: H_UF Client Reference: 15082	28-48 RS_WIM-:	273	Location: Customer: Attention:	Sta AE Ga	ag Brewery COM ary Marshall		Order Number: Report Number: Superseded Report	329008 t:	
VOC MS (S)									
Results Legend ISO17025 accredited. M mCERTS accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. totunfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi sample sample sample for the ree (F) Trigger breach confirmed 1.584x00 Sample deviation (see annendity)	urd to . The ithin covery	Customer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s)	BH212 0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977832		BH212 1.80 - 2.50 Soil/Solid 27/08/2015 00:00 28/08/2015 150828-48 11977833	BH213 0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977835	BH213 1.70 - 2.00 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977837		
Component	LOD/Un	its Method							
Dibromofluoromethane**	%	TM116	114		124	121	116		
Toluene-d8**	%	TM116	102		111	108	110		
4-Bromofluorobenzene**	%	TM116	94.1		105	85.4	104		
Dichlorodifluoromethane	<6 µg/	kg TM116	<6	м	<6 M	<6 M	<6 M		
Chloromethane	<7 µg/	kg TM116	<7	#	<7 #	<7 #	<7 #		
Vinyl Chloride	<6 µg/	kg TM116	<6	M	<6 M	<6 M	<6 M		
Bromomethane	<10 µg/kg	TM116	<10	М	<10 M	<10 M	<10 M		
Chloroethane	<10 µg/kg	TM116	<10	м	<10 M	<10 M	<10 M		
Trichlorofluorormethane	<6 µg/	kg TM116	<6	м	<6 M	<6 M	<6 M		
1,1-Dichloroethene	<10 µg/kg	TM116	<10	#	<10 #	<10 #	<10 #		
Carbon Disulphide	<7 µg/	kg TM116	<7	М	<7 M	<7 M	<7 M		
Dichloromethane	<10 µg/kg	TM116	<10	#	<10 #	<10 #	<10 #		
Methyl Tertiary Butyl Ether	<10 <10 µg/kc	TM116	<10	M	<10 M	<10 M	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	м	<10 M	<10 M	<10 M		
1,1-Dichloroethane	<8 µg/	kg TM116	<8	м	<8 M	<8 M	<8 M		
cis-1,2-Dichloroethene	<6 µg/	kg TM116	<6	М	<6 M	<6 M	<6 M		
2,2-Dichloropropane	<10 µg/kg	TM116	<10	м	<10 M	<10 M	<10 M		
Bromochloromethane	<10 µg/kg	TM116	<10	м	<10 M	<10 M	<10 M		
Chloroform	<8 µg/	kg TM116	<8	М	<8 M	<8 M	<8 M		
1,1,1-Trichloroethane	<7 µg/	kg TM116	<7	М	<7 M	<7 M	<7 M		
1,1-Dichloropropene	<10 µg/kg	TM116	<10	М	<10 M	<10 M	<10 M		
Carbontetrachloride	<10 µg/kg	TM116	<10	М	<10 M	<10 M	<10 M		
1,2-Dichloroethane	<5 µg/	kg TM116	<5	М	<5 M	<5 M	<5 M		
Benzene	<9 µg/	kg TM116	<9	М	<9 M	<9 M	<9 M		
Trichloroethene	<9 µg/	kg TM116	<9	#	<9 #	<9 #	<9 #		
1,2-Dichloropropane	<10 µg/kg	TM116	<10	М	<10 M	<10 M	<10 M		
Dibromomethane	<9 µg/	kg TM116	<9	М	<9 M	<9 M	<9 M		
Bromodichloromethane	<7 µg/	kg TM116	<7	М	<7 M	<7 M	<7 M		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	М	<10 M	<10 M	<10 M		
Toluene	<7 µg/	kg TM116	<7	М	<7 M	<7 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10		<10	<10	<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	М	<10 M	<10 M	<10 M		

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-48	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

Results Legend # ISO17025 accredited.		Customer Sample R	BH212	BH212	BH213	BH213		
M mCERTS accredited. ag Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.60 Soil/Solid	1.80 - 2.50 Soil/Solid	0.60 Soil/Solid	1.70 - 2.00 Soil/Solid		
* Subcontracted test.		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015		
** % recovery of the surrogate standa check the efficiency of the method.	ard to . The	Sampled Time	00:00:00	00:00:00	00:00:00	00:00:00		
results of individual compounds wi samples aren't corrected for the re-	ithin coverv	SDG Ref	150828-48	150828-48	150828-48	150828-48		
(F) Trigger breach confirmed 1-5&+8∕∞ Sample deviation (see appendix)	,	Lab Sample No.(s)	11977832	11977833	11977835	11977837		
Component	LOD/Un	its Method						
1,3-Dichloropropane	<7 µg/	kg TM116	<7	<7	<7	<7		
· · ·	10	5	М	М	м	м		
Tetrachloroethene	<5 µg/	kg TM116	<5	<5	<5	<5		
			М	М	М	М		
Dibromochloromethane	<10	TM116	<10	<10	<10	<10		
4.0 Dibromosthere	μд/кд	TMAAC	M 110	M	M 110	M 110		
1,2-Dibromoethane	<10 ua/ka	TIVITO	<10 M	<10 M	<10 M	<10 M		
Chlorobenzene	<5 µg///g	ka TM116	<5	<5	<5	<5		
	3-		м	M	M	M		
1,1,1,2-Tetrachloroethane	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	М	М	М		
Ethylbenzene	<4 µg/	kg TM116	<4	<4	<4	<4		
a las X de se	.10		M	M	M	M		
p/m-xyiene	<10 ug/kg	11/11/16	<10 #	<10	<10 #	<10 #		
o-Xvlene	µg/kg <10	TM116	<10	# <10	<10	<10		
o Aylone	µg/kg	INTIO	M	M	м	м		
Styrene	<10	TM116	<10	<10	<10	<10		
	µg/kg		#	#	#	#		
Bromoform	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	M	M	М		
Isopropylbenzene	<5 µg/	kg TM116	<5 "	<5	<5 "	<5 "		
1 1 2 2 Tetrachloroethane	<10	TM116	#	#	#	#		
1, 1, 2, 2-160 achioroeunane	ua/ka	TIVITIO	<10 М	<10 M	<10 М	<10 М		
1.2.3-Trichloropropane	<16	TM116	<16	<16	<16	<16		
, ,	µg/kg		М	М	М	М		
Bromobenzene	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	М	М	М		
Propylbenzene	<10	TM116	<10	<10	<10	<10		
2 Chlorotoluono	μg/kg	ka TM116	M	M	M	M		
2-Chiorololuene	≺9 µg/	kg IIVIIIO	~9 M	-9 M	-9	-9 M		
1.3.5-Trimethylbenzene	<8 µa/	ka TM116	<8	<8	<8	<8		
,., ,		5	М	М	М	М		
4-Chlorotoluene	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	М	М	М		
tert-Butylbenzene	<14	TM116	<14	<14	<14	<14		
1.2.4 Trimothylhonzono	µg/кд		M	M	M	M		
1,2,4-11ineutyidenzene	≺9 µg/	kg IIVIIIO	-9 #	-9	-9	-9		
sec-Butylbenzene	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	М	М	М		
4-Isopropyltoluene	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	М	М	М		
1,3-Dichlorobenzene	<8 µg/	kg TM116	<8	<8	<8	<8		
1.4 Dichlorobonzono	<5 ug/	ka TM116	M	M	M <5	M <5		
1,4-Dichiorobenzene	~5 µg/	kg IIVIIIO	~5 M	~5 M	~5 M	~5 M		
n-Butylbenzene	<11	TM116	<11	<11	<11	<11		
,	µg/kg							
1,2-Dichlorobenzene	<10	TM116	<10	<10	<10	<10		
	µg/kg		М	М	М	М		
1,2-Dibromo-3-chloroprop	<14	TM116	<14	<14	<14	<14		
ane Tort any mathed attact	µg/kg	TN4440	M	M	M	M		
ren-amyr metnyr ether	<10 ua/ka	11/11/16	<1U 	×۱۷ ۳	<1U 	<1U 		
1,2,4-Trichlorobenzene	<20	TM116	<20	<20	<20	<20		
, ,	µg/kg							
Hexachlorobutadiene	<20	TM116	<20	<20	<20	<20		
	µg/kg							
Naphthalene	<13	TM116	<13	<13	<13	<13		
	µg/kg		M	M	M	M	ļ	

CERTIFICATE OF ANALYSIS

Validated

VOC MS (S)

VUCI	VIS (S)				-			
# M aq diss.filt tot.unfilt * ** (F) 1-5&+§@ Compo	Results Legend ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi samples aren't corrected for the rec Trigger breach confirmed Sample deviation (see appendix) nent	rd to The thin sovery	ustomer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(5) AGS Reference Method	BH212 0.60 Soii/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977832	BH212 1.80 - 2.50 Soii/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977833	BH213 0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977835	BH213 1.70 - 2.00 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977837	
1,2,3-	Trichlorobenzene	<20	TM116	<20	<20	<20	<20	
		µg/kg		#	#	#	#	

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-48	Location:	Stag Brewery	Order Number:
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH212 0.60 SOLID 27/08/2015 00:000 29/08/2015 13:54:20 150828-48 11977832 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH213 0.60 SOLID 27/08/2015 00:00:00 29/08/2015 13:59:40 150828-48 11977835 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

 SDG:
 150828-48
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329008

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

 SDG:
 150828-48
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329008

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	11977832	11977833	11977835	11977837
Customer Sample Ref.	BH212	BH212	BH213	BH213
AGS Ref.				
Depth	0.60	1.80 - 2.50	0.60	1.70 - 2.00
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	08-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	03-Sep-2015		03-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	07-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
рН	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	29-Aug-2015	28-Aug-2015	29-Aug-2015	28-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	04-Sep-2015	07-Sep-2015	04-Sep-2015	07-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

06:10:17 09/09/2015

150828-48

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329008 Superseded Report:

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1262	QC 1219
Easily Liberated Sulphide	TM180	88.38 49.14 : 123.89	93.21 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1165	QC 1197
Total Aliphatics	TM173	97.92	92.08
>C12-C35		69.19 : 111.75	71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1197
Total Aromatics >EC12-EC35	TM173	85.33 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1100	QC 1232
Benzene by GC	TM089	110.0	104.0
(Moisture Corrected)		82.67 : 117.96	76.33 : 121.87
Ethylbenzene by GC	TM089	110.5	105.5
(Moisture Corrected)		80.45 : 118.61	75.73 : 123.83
m & p Xylene by GC	TM089	110.0	104.5
(Moisture Corrected)		79.25 : 119.43	75.52 : 120.32
MTBE GC-FID (Moisture	TM089	114.5	101.5
Corrected)		79.10 : 122.51	77.89 : 119.70
o Xylene by GC (Moisture	TM089	111.5	100.0
Corrected)		80.03 : 117.19	74.15 : 124.59
QC	TM089	102.79 75.74 : 124.65	101.18 62.31 : 122.61
Toluene by GC (Moisture	TM089	110.5	101.0
Corrected)		82.06 : 117.54	77.91 : 122.33

CERTIFICATE OF ANALYSIS

 SDG:
 150828-48
 Location:
 Stag Brewery

 Job:
 H_URS_WIM-273
 Customer:
 AECOM

 Client Reference:
 Attention:
 Gary Marshall

Order Number: Report Number: 329008 Superseded Report:

Hexavalent Chromium (s)

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	100.0 92.20 : 106.60	102.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1235	QC 1206
Aluminium	TM181	98.46 86.49 : 129.71	99.23 86.49 : 129.71
Antimony	TM181	97.13	94.27
Arsenic	TM181	92.92 82.63 : 117.37	92.92 82.63 : 117.37
Barium	TM181	95.49 79.45 : 120.55	96.24 79.45 : 120.55
Beryllium	TM181	100.47 85.92 : 121.27	98.91 85.92 : 121.27
Boron	TM181	99.24 77.41 : 143.83	105.34 77.41 : 143.83
Cadmium	TM181	96.47 81.95 : 118.05	95.8 81.95 : 118.05
Chromium	TM181	93.73 81.29 : 118.71	93.33 81.29 : 118.71
Cobalt	TM181	96.5 83.86 : 116.14	95.83 83.86 : 116.14
Copper	TM181	99.46 78.57 : 121.43	97.7 78.57 : 121.43
Iron	TM181	97.24 87.50 : 122.82	95.86 87.50 : 122.82
Lead	TM181	94.09 74.18 : 117.25	93.7 74.18 : 117.25
Manganese	TM181	100.0 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	92.46 81.99 : 118.01	94.3 81.99 : 118.01
Molybdenum	TM181	93.79 81.45 : 118.55	92.2 81.45 : 118.55
Nickel	TM181	95.93 79.64 : 120.36	95.93 79.64 : 120.36
Phosphorus	TM181	98.21 81.03 : 118.97	97.76 81.03 : 118.97
Selenium	TM181	108.21 87.05 : 121.93	105.3 87.05 : 121.93
Strontium	TM181	96.55 83.64 : 116.36	98.08 83.64 : 116.36
Thallium	TM181	88.72 77.50 : 122.50	87.56 77.50 : 122.50
Tin	TM181	92.69 78.30 : 113.98	92.03 78.30 : 113.98
Titanium	TM181	97.66 71.02 : 128.98	103.91 71.02 : 128.98

CERTIFICATE OF ANALYSIS

100					
SDG: Job: Client Reference:	150828-48 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Report:	329008

Metals in solid samples by OES

		QC 1235	QC 1206
Vanadium	TM181	93.53 86.61 : 113.39	93.53 86.61 : 113.39
Zinc	TM181	98.05 89.82 : 114.54	97.73 89.82 : 114.54

PAH by GCMS

Component	Method Code	QC 1154	QC 1196
Acenaphthene	TM218	92.0 77.34 : 118.20	89.5 78.75 : 116.25
Acenaphthylene	TM218	86.5 62.65 : 116.35	85.5 76.45 : 110.05
Anthracene	TM218	89.5 73.54 : 114.21	89.0 67.15 : 124.45
Benz(a)anthracene	TM218	102.5 74.99 : 132.24	97.5 82.00 : 127.00
Benzo(a)pyrene	TM218	102.0 80.75 : 127.25	99.5 75.60 : 124.20
Benzo(b)fluoranthene	TM218	99.5 75.84 : 127.12	99.0 81.20 : 121.77
Benzo(ghi)perylene	TM218	97.0 74.74 : 124.03	96.0 77.49 : 119.12
Benzo(k)fluoranthene	TM218	98.0 80.00 : 125.00	96.5 83.50 : 116.50
Chrysene	TM218	98.0 77.24 : 120.84	95.5 78.35 : 114.42
Dibenzo(ah)anthracene	TM218	96.5 76.00 : 122.50	95.0 77.15 : 122.45
Fluoranthene	TM218	92.5 78.51 : 118.75	92.5 79.08 : 114.40
Fluorene	TM218	93.0 76.95 : 117.18	91.5 79.03 : 113.38
Indeno(123cd)pyrene	TM218	98.5 75.34 : 127.46	96.5 75.65 : 125.15
Naphthalene	TM218	95.0 76.24 : 112.91	92.5 77.25 : 112.60
Phenanthrene	TM218	93.5 76.49 : 119.30	92.0 78.25 : 115.44
Pyrene	TM218	91.0 78.25 : 118.17	91.0 78.07 : 114.06

рH

Component	Method Code	QC 1218	QC 1227
рН	TM133	100.25 97.19 : 102.81	100.5 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

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SDG: Job: Client Reference:	150828-48 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Report:	329008

Total Organic Carbon

Component	Method Code	QC 1254	QC 1297
Total Organic Carbon	TM132	100.46 88.82 : 111.18	97.72 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1273
Total Sulphate	TM221	102.27 78.49 : 121.51	103.79 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1172	QC 1128
1,1,1,2-tetrachloroethane	TM116	101.0 76.60 : 121.00	95.6 83.24 : 124.28
1,1,1-Trichloroethane	TM116	96.2 77.80 : 123.40	100.8 81.77 : 121.07
1,1,2-Trichloroethane	TM116	90.6 75.40 : 119.80	100.4 79.24 : 112.23
1,1-Dichloroethane	TM116	99.8 80.84 : 124.49	103.0 72.58 : 116.06
1,2-Dichloroethane	TM116	104.8 91.00 : 135.67	118.8 77.50 : 122.50
1,4-Dichlorobenzene	TM116	105.6 80.88 : 114.60	96.2 73.23 : 116.39
2-Chlorotoluene	TM116	94.2 74.00 : 117.20	85.6 69.22 : 110.64
4-Chlorotoluene	TM116	90.2 71.20 : 113.20	89.0 68.57 : 106.26
Benzene	TM116	97.6 79.60 : 125.20	103.2 84.33 : 124.27
Carbon Disulphide	TM116	99.4 74.91 : 122.14	110.4 77.20 : 122.80
Carbontetrachloride	TM116	100.2 76.80 : 121.20	98.2 84.20 : 119.90
Chlorobenzene	TM116	102.0 83.47 : 116.82	102.4 85.28 : 129.96
Chloroform	TM116	98.4 82.00 : 128.80	108.2 82.73 : 119.72
Chloromethane	TM116	117.2 74.62 : 135.86	123.4 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	103.6 81.20 : 128.00	108.4 73.56 : 118.93
Dibromomethane	TM116	88.4 73.40 : 116.60	104.4 73.40 : 116.60
Dichloromethane	TM116	101.6 86.60 : 137.00	113.2 76.16 : 121.98

CERTIFICATE OF ANALYSIS

SDG:	150828-48	Location:	Stag Brewery	Order Num
Job:	H_URS_WIM-273	Customer:	AECOM	Report Nur
Client Reference):	Attention:	Gary Marshall	Supersede
VOC MS (S)				

der Number: port Number: 329008 perseded Report:

		QC 1172	QC 1128
Ethylbenzene	TM116	96.6	94.0
		73.60 : 115.60	80.07 : 125.98
Hexachlorobutadiene	TM116	114.0	69.0
		33.65 : 130.56	30.92 : 132.28
Isopropylbenzene	TM116	92.0	82.6
		72.52 : 117.52	69.27 : 125.32
Naphthalene	TM116	107.0	110.0
		83.23 : 126.48	79.15 : 121.98
o-Xylene	TM116	92.4	77.6
		69.60 : 110.40	75.46 : 111.52
p/m-Xylene	TM116	94.1	90.2
		71.30 : 112.70	76.97 : 121.75
Sec-Butylbenzene	TM116	116.4	69.6
		59.20 : 125.20	49.27 : 129.90
Tetrachloroethene	TM116	104.6	102.2
		85.92 : 127.92	87.96 : 133.65
Toluene	TM116	90.2	99.0
		76.08 : 110.17	79.23 : 114.58
Trichloroethene	TM116	96.4	94.6
		78.17 : 121.37	84.09 : 114.24
Trichlorofluoromethane	TM116	102.2	107.4
		83.78 : 132.82	76.22 : 114.82
Vinyl Chloride	TM116	94.6	98.2

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

59.68 : 118.68

The figure detailed is the percentage recovery result for the AQC.

66.81 : 138.46

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

























CERTIFICATE OF ANALYSIS

SDG:	150828-48	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

329008

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	CYCLOHEXANE SOXTHERM	
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	IATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	ENDOVEREND	GCFD
EPH (MNOL)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (OLEANED UP)	D&C	HEXANEACETONE	BND OVER BND	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	ENDOVEREND	GCFID
PCB TOT / PCB CON	D&C	HEXANEACETONE	ENDOVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAFID GC	WET	HEXANEACETONE	SHAVER	GCEZ
SEM VOLATILEORGANIC	WET	DOMACETONE	SONCATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH .	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST 00P/0PP	DOM	LIQUID'LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Orodolte	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Tremolile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

CERTIFICATE OF ANALYSIS

SDG:	150828-48	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

Container with Headspace provided for volatiles analysis
Incorrect container received
Deviation from method
Holding time exceeded before sample received
Samples exceeded holding time before presevation was performed
Sampled on date not provided
Sample holding time exceeded in laboratory
Sample holding time exceeded due to sampled on date
Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name						
Chrysolie	WhiteAsbestos						
Amoste	BrownAsbestos						
Oroddalte	Blue Asbestos						
Fibrous Adinoite	-						
Fibrous Anthophylite	-						
Fibrous Trendile	-						

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-57

Stag Brewery 329023

We received 5 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



CERTIFICATE OF ANALYSIS

Validated

		~ = 1			
SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11978081	BH8A		0.50	26/08/2015
11978082	BH8A		0.90	26/08/2015
11978083	BH8A		3.00 - 3.50	26/08/2015
11978079	BH9A		0.50	26/08/2015
11978080	BH9A		2.20 - 3.30	26/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol L	aborato.	ries	C	FR	۲ ۱	IFI	C۵	TF	0	FΔI					Validated
SDG: Job: Client Reference:	150828-57 H_URS_V	7 VIM-273	Location Custome Attentior	er: h:	Si Al G	tag I ECC	Brew DM Mars	very			C F S	Order Num Report Nun Supersede	ber: nber: d Report:	329023	
SOLID Results Legend		Lab Sample	No(s)		1 000 / 61 1	11078081	11978083		11978079	11978080					
No Determina Possible	ation	Custome Sample Refe	er rence		рпод		BH8A		BH9A	ВН9А					
		AGS Refere	ence												
		Depth (n	1)		0.30	0 70	3.00 - 3.50		0.50	2.20 - 3.30					
		Containe	ər	250g Amber Jar (AL	400g Tub (ALE213)	250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214)	400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215)	60g VOC (ALE215) 400g Tub (ALE214) 250n Amber Jar (Al					
Ammonium Soil by Titratio	n	All	NDPs: 0 Tests: 4		x		x	×		x					
Asbestos ID in Solid Samp	oles	All	NDPs: 0 Tests: 2		x			×							
Easily Liberated Sulphide		All	NDPs: 0 Tests: 4		x		<mark>x</mark>	x		x					
EPH CWG (Aliphatic) GC	(S)	All	NDPs: 0 Tests: 4	x		x		x	2	×					
EPH CWG (Aromatic) GC	(S)	All	NDPs: 0 Tests: 4	x		x		x	2	×					
GRO by GC-FID (S)		All	NDPs: 0 Tests: 4)	×	x		x	x					
Hexavalent Chromium (s)		All	NDPs: 0 Tests: 4		x		x	×		x					
Metals in solid samples by	OES	All	NDPs: 0 Tests: 4	x		x		×	2	×					
PAH by GCMS		All	NDPs: 0 Tests: 4	x		x		x	2	×					
pH		All	NDPs: 0 Tests: 4		x		x	×		x					
Sample description			NDPs: 0 Tests: 4	x		x		×	2	×					
Total Sulphoto			NDPs: 0 Tests: 4	x		x		×		×					
			NDPs: 0 Tests: 4	x		x		×		×					
			NDPs: 0 Tests: 4	x		x		x		×					
VUC M5 (5)		All	NDPs: 0 Tests: 4)	×	×		x	x					

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-57	Location:	Stag Brewery	Order Number:	329023
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Sample Descriptions

Grain Sizes															
very fine	fine <0.063mm fine 0.0		0.06	63mm - 0.1mm	me	edium 0.1mm		- 2mm	coarse		2mm - 10mm		very coarse		>10mm
Lab Sample No(s) Customer Sample Ref.		Ref.	Depth (m)	1	Colo	our	Description		Grain size		Inclusions		Inc	lusions 2	
1197808	1	BH8A		0.50		Bla	ck	Sand	1	0.1	- 2 mm	Sto	ones		None
11978083	3	BH8A		3.00 - 3.50		Light Brown		Sand		0.1 - 2 mm		Stones			None
11978079	9	BH9A		0.50		Light Brown Sand		Sand 0.1 - 2 r		0.1 - 2 mm Stones		ones		None	
11978080	D	BH9A		2.20 - 3.30		Dark Brown Sa		Sandy Clay Loam		0.1	- 2 mm	Sto	ones		None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

- Results Legend		ustomer Sample R			_	PHOA	_	PHOA		· · · · · · · · · · · · · · · · · · ·	
# ISO17025 accredited.		vasionier oampie it	впоя	БПОА		рияч		БПЭА			
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.50	3.00 - 3.50		0.50		2.20 - 3.30			
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid 26/08/2015	Soil/Solid 26/08/2015		Soil/Solid 26/08/2015		Soil/Solid 26/08/2015			
** % recovery of the surrogate standa check the efficiency of the method.	rd to The	Sampled Time	28/08/2015	28/08/2015		28/08/2015		28/08/2015			
results of individual compounds wi samples aren't corrected for the rec	thin covery	SDG Ref	150828-57	150828-57		150828-57		150828-57			
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11978081	11978083		11978079		11978080			
Component	LOD/Units	Method									
Moisture Content Ratio (%	%	PM024	17	9.5		7.3		14			
Exchangeable Ammonia	<15	TM024	<15	18.4	\rightarrow	<15		71.4			
as NH4	mg/kg		М		м		м		М		
Organic Carbon, Total	<0.2 %	TM132	19.1	<0.2		<0.2		0.443			
nH	1 nH	TM133	8.38	7.66	M	10.2	M	11.2	M		
b.	Units		M		м		М		М		
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6		<0.6		<0.6			
Sulphide, Easily liberated	mg/kg ≤15	TM180	#	<15	#	<15	#	252	#		
Cuprice, Lusity incruted	mg/kg	TWITE	+0.+	4	• #	410	♦ #	202	♦ #		
Arsenic	<0.6	TM181	13.7	14.7		16.5		15.5			
Cadmium	mg/kg	TM181	0.344	0.338	М	0 305	М	0 378	М		
Caumum	<0.02 mg/kg	TIVITOT	0.344 M	0.556	м	0.595	м	0.570	м		
Chromium	<0.9	TM181	13.9	19.1		18.9		21.1			
0	mg/kg	TN404	M	5.00	М	0.00	М	40	М		
Copper	<1.4 ma/ka	TM181	80.7 M	5.98	м	8.36	м	12	м		
Lead	<0.7	TM181	41.4	6.89	101	12.4	101	23.7	101		
	mg/kg		М		м		М		М		
Mercury	<0.14 ma/ka	TM181	<0.14	<0.14	м	<0.14	м	<0.14	м		
Nickel	<0.2	TM181	37.6	18.8		23.6	IVI	20.7	IVI		
	mg/kg		М		м		М		М		
Selenium	<1 mg/k	g TM181	<1 "	<1	ш	<1	щ	<1	щ		
Zinc	<1.9	TM181	24.4	25.5	#	34.5	#	62.4	#		
	mg/kg		M		м		М		М		
Sulphate, Total	<48 ma/ka	TM221	775 M	80.9	м	212	м	1040	м		
			101						IVI		
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ALcontrol La	boratories	6	CER		F ANA				Validated
SDG: Job:	150828-57 H_URS_WIM-	273	Location: Customer: Attention	Stag Brewery AECOM Gary Marshall			Order Number: Report Number: Superseded Report	329023	
PAH by GCMS			Auchtion.				Cuporocucu Roport	•	
Results Legend # ISO17025 accredited.		Customer Sample R	BH8A	BH8A		BH9A	BH9A		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test.		Depth (m) Sample Type Date Sampled	0.50 Soil/Solid 26/08/2015	3.00 - 3.50 Soil/Solid 26/08/2015		0.50 Soil/Solid 26/08/2015	2.20 - 3.30 Soil/Solid 26/08/2015		
 % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 		Sampled Time Date Received SDG Ref Lab Sample No.(s)	28/08/2015 150828-57 11978081	28/08/2015 150828-57 11978083		28/08/2015 150828-57 11978079	28/08/2015 150828-57 11978080		
Component	LOD/Un	nits Method							
Naphthalene-d8 %	%	TM218	122	101		99	95.4		
Acenaphthene-d10 %	%	TM218	124	97.4		98.4	94.8		
Phenanthrene-d10 % recovery**	%	TM218	118	93.6		96.9	93.4		
Chrysene-d12 %	%	TM218	99.3	83.8		92.1	84.9		
Perylene-d12 %	%	TM218	96.2	83.6		99	91.4		
Naphthalene	<9 µg/	/kg TM218	111	<9		<9	32.7		
Acenaphthylene	<12	TM218	16	M <12	M	M <12	15		
Acenaphthene	μg/kg <8 μg/) /kg TM218	<8	M <8	M	M <8	11 M		
Fluorene	<10	TM218	<10	M <10	M	M <10	M 54.6		
Phenanthrene	µg/kg <15	TM218	215	M <15	м	M <15	M 360		
Anthracene	μg/kg] TM218	33.0	M <16	м	M	105		
	μg/kg		007	M	м	M	M		
	<17 µg/kg	J IM218	237	<17 M	м	<17 M	400 M		
Pyrene	<15 μg/kg	TM218	186	<15 M	м	16.7 M	317 M		
Benz(a)anthracene	<14 µg/kg	TM218	128	<14 M	м	24.7 M	283 M		
Chrysene	<10 ug/kg	TM218	137	<10	м	<10 M	218 M		
Benzo(b)fluoranthene	<15 ug/kc	TM218	193	<15		24.6	306 M		
Benzo(k)fluoranthene	<14	TM218	59.9	<14	N4	<14	108		
Benzo(a)pyrene	<15	TM218	122	<15		18.2	259		
Indeno(1,2,3-cd)pyrene	µg/kg <18	TM218	76.6	M <18		M <18	121 M		
Dibenzo(a,h)anthracene	µg/kg <23	TM218	<23	M <23	M	M <23	40.4		
Benzo(g,h,i)perylene	μg/kg <24	TM218	108	M <24	M	M <24	M 144		
PAH, Total Detected	µg/kg <118	3 TM218	1620	M <118	М	M <118	M 2780		
USEPA 16	µg/kg]				-			
		_							

ALcontrol Labo	oratories		CER		ICATE O	F AI	NALYSIS			Validated
SDG: 150 Job: H_U Client Reference: 150	828-57 JRS_WIM-2	273	Location: Customer: Attention:	Stag AEC Gary	Brewery OM Marshall			Order Number: Report Number: Superseded Repo	329023 rt:	
TPH CWG (S)										
Results Legend # ISO17025 accredited.		Customer Sample R	BH8A		BH8A		BH9A	BH9A		
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate stat	ndard to	Depth (m) Sample Type Date Sampled Sampled Time	0.50 Soil/Solid 26/08/2015		3.00 - 3.50 Soil/Solid 26/08/2015		0.50 Soil/Solid 26/08/2015	2.20 - 3.30 Soil/Solid 26/08/2015		
check the efficiency of the meth results of individual compounds samples aren't corrected for the	od. The s within	Date Received SDG Ref	28/08/2015 150828-57		28/08/2015 150828-57		28/08/2015 150828-57	28/08/2015 150828-57		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	Lab Sample No.(s) AGS Reference	11978081		11978083		11978079	11978080		
Component	LOD/Un	its Method								
GRO Surrogate % recovery**	%	I M089	72		107		113	97		
GRO TOT (Moisture	<44	TM089	<44		<44		178	106		
Methyl tertiary butyl ether	μg/κg <5 μg/	kg TM089	<5	M	<5	M	<5	M M <5 M M		
Benzene	<10	TM089	<10		<10	IVI	<10	<10		
Toluene	µg/kg	ka TM080	2 4 2	М	-2	М		M M		
	~2 μg/	kg 110009	2.42	м	~2	м		M N		
Ethylbenzene	<3 µg/	kg TM089	<3	м	<3	м	<3	<3		
m,p-Xylene	<6 µg/	kg TM089	<6	м	<6	м	<6	<6 M M		
o-Xylene	<3 µg/	kg TM089	<3	M	<3	м	<3	<3 M M		
sum of detected mpo xvlene by GC	<9 µg/	kg TM089	<9		<9	IVI	<9	<9		
sum of detected BTEX by	<24	TM089	<24		<24		<24	<24		
Aliphatics >C5-C6	μg/kg <10	TM089	<10	+	<10		<10	<10		
Aliphatics >C6-C8	μg/kg <10	TM089	14.5	+	<10		<10	19.7		
Aliphatics >C8-C10	<pre>/// / / / / / / / / / / / / / / / / /</pre>	TM089	10.9		<10		11.9	22		
Aliphatics >C10-C12	<10 ug/kg	TM089	<10	+	<10		87.4	25.5		
Aliphatics >C12-C16	<100 µg/kg	TM173	555		<100		<100	1290		
Aliphatics >C16-C21	<100 µg/kg	TM173	1230		<100		<100	3060		
Aliphatics >C21-C35	<100 µg/kg	TM173	5830		<100		<100	6690		
Aliphatics >C35-C44	<100 µg/kg	TM173	567		<100		<100	<100		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	8180		<100		<100	11000		
Aromatics >EC5-EC7	<10 ug/kg	TM089	<10		<10		<10	<10		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10		<10		<10	<10		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10		<10		<10	15.1		
Aromatics >EC10-EC12	<10 <10 µg/kg	TM089	<10		<10		58.3	17.4		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100		<100		<100	2810		
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100		<100		<100	19400		
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100		<100		<100	66300		
Aromatics >EC35-EC44	<100 μg/kg	TM173	<100		<100		<100	16400		
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100		<100		<100	5980		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	<100		<100		<100	105000		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	8220		<100		111	116000		
CERTIFICATE OF ANALYSIS

SDG: 15082 Job: H_UF Client Reference:	28-57 RS_WIM-2	273	Location: Customer: Attention:	Sta AE Ga	ag Brewery COM ary Marshall		Order Number: Report Number: Superseded Repo	329023 rt:	
VOC MS (S)					<u>,</u>				
Results Legend		Customer Sample R	BH8A		BH8A	BH9A	BH9A		
M mCERTS accredited. aq Aqueous / settied sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate standa check the efficiency of the method.	ird to . The	Depth (m) Sample Type Date Sampled Sampled Time Date Received	0.50 Soil/Solid 26/08/2015 28/08/2015		3.00 - 3.50 Soil/Solid 26/08/2015 28/08/2015	0.50 Soil/Solid 26/08/2015 28/08/2015	2.20 - 3.30 Soil/Solid 26/08/2015 28/08/2015		
results of individual compounds wi samples aren't corrected for the re-	ithin covery	SDG Ref	150828-57 11978081		150828-57 11978083	150828-57 11978079	150828-57 11978080		
(r) rrigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		AGS Reference							
Component	LOD/Uni	its Method				100			
Dibromofluoromethane**	%	IM116	114		109	120	112		
Toluene-d8**	%	TM116	102		101	102	102		
4-Bromofluorobenzene**	%	TM116	88.1		95	96.1	92.2		
Dichlorodifluoromethane	<6 µg/l	kg TM116	<60	М	<6 M	<6 M	<6 M		
Chloromethane	<7 µg/l	kg TM116	<70	#	<7 #	<7	<7 #		
Vinyl Chloride	<6 µg/l	kg TM116	<60	М	<6 M	<6 M	<6 M		
Bromomethane	<10 µg/kg	TM116	<100	М	<10 M	<10 M	<10 M		
Chloroethane	<10 µg/kg	TM116	<100	М	<10 M	<10 M	<10 M		
Trichlorofluorormethane	<6 µg/	kg TM116	<60	М	<6 M	<6	<6 M		
1,1-Dichloroethene	<10 µg/kg	TM116	<100	#	<10	<10	<10 #		
Carbon Disulphide	<7 µg/l	kg TM116	<70	М	<7 M	<7 M	<7 M		
Dichloromethane	<10 µg/kg	TM116	<100	#	<10	<10	<10 #		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	М	<10 M	<10	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100	М	<10 M	<10 M	<10 M		
1,1-Dichloroethane	<8 µg/l	kg TM116	<80	М	<8 M	<8	<8 M		
cis-1,2-Dichloroethene	<6 µg/l	kg TM116	<60	М	<6 M	<6	<6 M		
2,2-Dichloropropane	<10 µg/kg	TM116	<100	М	<10 M	<10	<10 M		
Bromochloromethane	<10 µg/kg	TM116	<100	М	<10 M	<10	<10 M		
Chloroform	<8 µg/l	kg TM116	<80	М	<8 M	<8	<8 		
1,1,1-Trichloroethane	<7 µg/l	kg TM116	<70	М	<7 M	<7 M	<7 M		
1,1-Dichloropropene	<10 µg/kg	TM116	<100	М	<10 M	<10	<10 M		
Carbontetrachloride	<10 µg/kg	TM116	<100	М	<10 M	<10	<10 M		
1,2-Dichloroethane	<5 µg/l	kg TM116	<50	М	<5 M	<5 M	<5 M		
Benzene	<9 µg/l	kg TM116	<90	М	<9 M	<9 M	<9 M		
Trichloroethene	<9 µg/l	kg TM116	<90	#	<9 #	<9	<9 #		
1,2-Dichloropropane	<10 µg/kg	TM116	<100	М	<10 M	<10 M	<10 M		
Dibromomethane	<9 µg/l	kg TM116	<90	М	<9 M	<9 M	<9 M		
Bromodichloromethane	<7 µg/	kg TM116	<70	М	<7 M	<7 M	<7 M		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100	M	<10 M	<10 M	<10 M		
Toluene	<7 µg/l	kg TM116	<70	M	<7 M	<7 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/ka	TM116	<100		<10	<10	<10		
1,1,2-Trichloroethane	<10 ug/kg	TM116	<100	М	<10	<10	<10		

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

Results Legend		Customer Sample R	BH8A	BH8A	BH9A	BH9A	
M mCERTS accredited.							
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30	
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
* Subcontracted test. ** % recovery of the surrogate standa	ard to	Date Sampled Sampled Time	26/08/2015	26/08/2015	26/08/2015	26/08/2015	
check the efficiency of the method	. The ithin	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
samples aren't corrected for the re	covery	SDG Ref	150828-57	150828-57	150828-57	150828-57	
1-5&+§@ Sample deviation (see appendix)		AGS Reference	11010001	11010000	11010010	11010000	
Component	LOD/Un	its Method					
1,3-Dichloropropane	<7 µg/	/kg TM116	<70	<7	<7	<7	
		-	М	м	М	М	
Tetrachloroethene	<5 µg/	/kg TM116	<50	<5	<5	<5	
			М	М	М	М	
Dibromochloromethane	<10	TM116	<100	<10	<10	<10	
	µg/kg	1	M	M	M	M	
1,2-Dibromoethane	<10	TM116	<100	<10	<10	<10	
	µg/kg]	M	M	M	M	
Chlorobenzene	<5 µg/	/kg TM116	<50	<5	<5	<5	
			M	M	M	M	
1,1,1,2-l etrachloroethane	<10	IM116	<100	<10	<10	<10	
Ethylhonzono	μ9/κ9		M	M	M	M	
Euryidenzene	<4 µg/	rkg HVITTO	<40 M	~4 M	~4 M	~4 M	
n/m-Xylene	<10	TM116	<100	<10	<10	<10	
p/m/xylene	ua/ka	1	#	#	#	#	
o-Xvlene	<10	, TM116	<100	<10	<10	<10	
	µg/kg	1	M	M	M	M	
Styrene	<10	TM116	<100	<10	<10	<10	
	µg/kg	3	#	#	#	#	
Bromoform	<10	TM116	<100	<10	<10	<10	
	µg/kg	J	М	м	М	М	
Isopropylbenzene	<5 µg/	/kg TM116	<50	<5	<5	<5	
			#	#	#	#	
1,1,2,2-Tetrachloroethane	<10	TM116	<100	<10	<10	<10	
	µg/kg	1	М	М	M	М	
1,2,3-Trichloropropane	<16	TM116	<160	<16	<16	<16	
	µg/kg]	M	M	M	M	
Bromobenzene	<10	TM116	<100	<10	<10	<10	
	µg/kg		M	M	M	M	
Propyidenzene	<10	11/11/16	<100	<10	<10	<10	
2 Chlorotoluono) /kg TM116	M	M <0	N	M <0	
2-Chlorotoldene	~9 µg/	Ng HVITTO	~90 M	-9 M	-5 M	-9 M	
1 3 5-Trimethylbenzene	<8 un	/kg TM116	<80	<8	<8	<8	
	·ο μg,	Ng IMITO	M	.e M	M	 M	
4-Chlorotoluene	<10	TM116	<100	<10	<10	<10	
	µg/kg]	М	М	М	М	
tert-Butylbenzene	<14	TM116	<140	<14	<14	<14	
	µg/kg	1	М	М	М	М	
1,2,4-Trimethylbenzene	<9 µg/	/kg TM116	<90	<9	<9	<9	
			#	#	#	#	
sec-Butylbenzene	<10	TM116	<100	<10	<10	<10	
	µg/kg]	М	M	M	M	
4-Isopropyltoluene	<10	TM116	<100	<10	<10	<10	
1.2 Dishlaraharrara	µg/kg		M (100	M 10	M	M	
1,3-Dichlorobenzene	<8 µg/	кд пипть	<8U	<8 M	<8 M	<8 M	
1 4-Dichlorobenzene	<5.00	/kg TM116	<50	<5	N	N	
1,4-Dichlorobenzene	~0 µg/	Ng INTIO	чоо м	чо м	ч С	чо м	
n-Butylbenzene	<11	TM116	<110	<11	<11	<11	
	µg/kg	1					
1,2-Dichlorobenzene	<10	TM116	<100	<10	<10	<10	
	µg/kg	J	М	м	М	М	
1,2-Dibromo-3-chloroprop	<14	TM116	<140	<14	<14	<14	
ane	µg/kg]	М	М	М	M	
Tert-amyl methyl ether	<10	TM116	<100	<10	<10	<10	
	µg/kg	1	#	#	#	#	
1,2,4-Trichlorobenzene	<20	TM116	<200	<20	<20	<20	
	µg/kg]					
Hexachlorobutadiene	<20	TM116	<200	<20	<20	<20	
Nanhthalana	µg/ко		~100	-10	-10	~10	
napittialelle	<13 uo/ko		<13U	<13 	NI 3	<13 	
	P9/ K9	·	IVI	IVI IVI	IVI	IVI IVI	

CERTIFICATE OF ANALYSIS

Validated

VOC MS (S)							
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fit Disolved / filtered sample. tot.unfilt Total / unfiltered sample. * % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi samples aren't corrected for the rec (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix) Component	rd to The thin sovery	Ustomer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference Method	0.50 Soii/Solid 26/08/2015 28/08/2015 150828-57 11978081	BH8A 3.00 - 3.50 Soii/Solid 26/08/2015 28/08/2015 150828-57 11978083	0.50 Soii/Solid 26/08/2015 28/08/2015 150828-57 11978079	BH9A 2.20 - 3.30 Soii/Solid 26/08/2015 28/08/2015 150828-57 11978080	
1,2,3-Trichlorobenzene	<20	TM116	<200	<20	<20	<20	
	µg/kg		#	#	#	#	

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-57	Location:	Stag Brewery	Order Number:
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH8A 0.50 SOLID 26/08/2015 00:00:00 01/09/2015 12:03:31 150828-57 11978081 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH9A 0.50 SOLID 26/08/2015 00:00:00 01/09/2015 11:54:18 150828-57 11978079 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

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CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150828-57
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329023

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method	No Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PF	EP			
PM00		Preparation of Samples for Metals Analysis		
PM02	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM02	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM04	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM08	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM11	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM13	2 In - house Method	ELTRA CS800 Operators Guide		
TM13	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM15	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM17	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM18	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM18	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM21	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM22	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM24	}	Mixed Anions In Soils By Kone		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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CERTIFICATE OF ANALYSIS

 SDG:
 150828-57
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329023

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	11978081	11978083	11978079	11978080
Customer Sample Ref.	BH8A	BH8A	BH9A	BH9A
AGS Ref.				
Depth	0.50	3.00 - 3.50	0.50	2.20 - 3.30
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	04-Sep-2015		04-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	02-Sep-2015	02-Sep-2015	03-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	08-Sep-2015	04-Sep-2015
рН	08-Sep-2015	08-Sep-2015	08-Sep-2015	04-Sep-2015
Sample description	01-Sep-2015	29-Aug-2015	01-Sep-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	07-Sep-2015	07-Sep-2015	07-Sep-2015	04-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
VOC MS (S)	03-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

09:10:12 09/09/2015

150828-57

H_URS_WIM-273

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SDG:

Job:

Client Reference:

CERTIFICATE OF ANALYSIS

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall

Order Number: Report Number: 3 Superseded Report:

329023

Validated

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1262	QC 1219
Easily Liberated Sulphide	TM180	88.38 49.14 : 123.89	93.21 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194	QC 1146
Total Aliphatics	TM173	85.21	87.08	90.21
>C12-C35		62.50 : 112.50	70.80 : 111.51	71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194	QC 1146
Total Aromatics	TM173	82.67	82.67	83.33
>EC12-EC35		60.62 : 126.95	65.21 : 121.32	59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1105	QC 1173
Benzene by GC	TM089	83.5	95.0
(Moisture Corrected)		79.00 : 121.00	76.33 : 121.87
Ethylbenzene by GC (Moisture Corrected)	TM089	83.5 79.00 : 121.00	99.0 75.73 : 123.83
m & p Xylene by GC	TM089	83.75	97.5
(Moisture Corrected)		79.00 : 121.00	75.52 : 120.32
MTBE GC-FID (Moisture	TM089	85.5	94.0
Corrected)		74.48 : 125.29	77.89 : 119.70
o Xylene by GC (Moisture	TM089	83.5	93.5
Corrected)		79.00 : 121.00	74.15 : 124.59
QC	TM089	112.68 73.70 : 123.60	99.2 62.31 : 122.61
Toluene by GC (Moisture	TM089	83.5	93.5
Corrected)		79.00 : 121.00	77.91 : 122.33

CERTIFICATE OF ANALYSIS

150828-57 Location: Stag Brewery H_URS_WIM-273 AEČOM Customer: **Client Reference:** Attention: Gary Marshall

Order Number: 329023 Report Number: Superseded Report:

Hexavalent Chromium (s)

SDG:

Job:

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	100.0 92.20 : 106.60	102.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1272	QC 1286	QC 1235
Aluminium	TM181	108.46 86.49 : 129.71	109.23 86.49 : 129.71	98.46 86.49 : 129.71
Antimony	TM181	98.92 77.50 : 122.50	98.21 77.50 : 122.50	97.13 77.50 : 122.50
Arsenic	TM181	94.69 82.63 : 117.37	93.81 82.63 : 117.37	92.92 82.63 : 117.37
Barium	TM181	99.25 79.45 : 120.55	99.25 79.45 : 120.55	95.49 79.45 : 120.55
Beryllium	TM181	101.09 85.92 : 121.27	101.24 85.92 : 121.27	100.47 85.92 : 121.27
Boron	TM181	112.21 77.41 : 143.83	115.27 77.41 : 143.83	99.24 77.41 : 143.83
Cadmium	TM181	97.65 81.95 : 118.05	97.31 81.95 : 118.05	96.47 81.95 : 118.05
Chromium	TM181	109.41 81.29 : 118.71	99.22 81.29 : 118.71	93.73 81.29 : 118.71
Cobalt	TM181	97.83 83.86 : 116.14	97.17 83.86 : 116.14	96.5 83.86 : 116.14
Copper	TM181	100.68 78.57 : 121.43	100.14 78.57 : 121.43	99.46 78.57 : 121.43
Iron	TM181	102.76 87.50 : 122.82	100.69 87.50 : 122.82	97.24 87.50 : 122.82
Lead	TM181	95.28 74.18 : 117.25	93.7 74.18 : 117.25	94.09 74.18 : 117.25
Manganese	TM181	100.0 82.91 : 117.09	100.0 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	94.47 81.99 : 118.01	93.97 81.99 : 118.01	92.46 81.99 : 118.01
Molybdenum	TM181	100.64 81.45 : 118.55	94.75 81.45 : 118.55	93.79 81.45 : 118.55
Nickel	TM181	109.88 79.64 : 120.36	98.26 79.64 : 120.36	95.93 79.64 : 120.36
Phosphorus	TM181	99.11 81.03 : 118.97	97.91 81.03 : 118.97	98.21 81.03 : 118.97
Selenium	TM181	106.5 87.05 : 121.93	107.01 87.05 : 121.93	108.21 87.05 : 121.93
Strontium	TM181	102.3 83.64 : 116.36	102.68 83.64 : 116.36	96.55 83.64 : 116.36
Thallium	TM181	92.21 77.50 : 122.50	90.55 77.50 : 122.50	88.72 77.50 : 122.50
Tin	TM181	94.35 78.30 : 113.98	93.69 78.30 : 113.98	92.69 78.30 : 113.98
Titanium	TM181	103.91 71.02 : 128.98	103.13 71.02 : 128.98	97.66 71.02 : 128.98

09:10:12 09/09/2015

150828-57

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329023 Superseded Report:

Metals in solid samples by OES

		QC 1272	QC 1286	QC 1235
Vanadium	TM181	97.06 86.61 : 113.39	96.76 86.61 : 113.39	93.53 86.61 : 113.39
Zinc	TM181	100.97 89.82 : 114.54	100.32 89.82 : 114.54	98.05 89.82 : 114.54

PAH by GCMS

Client Reference:

SDG:

Job:

Component	Method Code	QC 1191	QC 1196	QC 1106	QC 1137
Acenaphthene	TM218	85.5 70.00 : 130.00	89.5 78.75 : 116.25	91.5 78.84 : 114.36	96.0 78.84 : 114.36
Acenaphthylene	TM218	78.0 70.00 : 130.00	85.5 76.45 : 110.05	85.5 65.50 : 119.50	90.0 65.50 : 119.50
Anthracene	TM218	79.0 70.00 : 130.00	89.0 67.15 : 124.45	91.0 75.54 : 110.88	97.5 75.54 : 110.88
Benz(a)anthracene	TM218	81.0 70.00 : 130.00	97.5 82.00 : 127.00	97.5 78.02 : 127.38	104.0 78.02 : 127.38
Benzo(a)pyrene	TM218	80.0 70.00 : 130.00	99.5 75.60 : 124.20	99.5 79.21 : 128.01	105.5 79.21 : 128.01
Benzo(b)fluoranthene	TM218	78.0 70.00 : 130.00	99.0 81.20 : 121.77	96.0 86.21 : 131.42	101.5 86.21 : 131.42
Benzo(ghi)perylene	TM218	83.0 70.00 : 130.00	96.0 77.49 : 119.12	95.0 80.11 : 120.52	100.0 80.11 : 120.52
Benzo(k)fluoranthene	TM218	79.0 70.00 : 130.00	96.5 83.50 : 116.50	97.0 78.77 : 120.72	103.0 78.77 : 120.72
Chrysene	TM218	77.5 70.00 : 130.00	95.5 78.35 : 114.42	94.5 78.77 : 118.99	100.5 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	79.0 70.00 : 130.00	95.0 77.15 : 122.45	93.5 76.39 : 122.63	100.0 76.39 : 122.63
Fluoranthene	TM218	83.5 70.00 : 130.00	92.5 79.08 : 114.40	95.0 77.25 : 117.75	101.0 77.25 : 117.75
Fluorene	TM218	86.0 70.00 : 130.00	91.5 79.03 : 113.38	95.5 79.28 : 117.35	98.5 79.28 : 117.35
Indeno(123cd)pyrene	TM218	78.5 70.00 : 130.00	96.5 75.65 : 125.15	93.0 78.87 : 122.50	99.0 78.87 : 122.50
Naphthalene	TM218	91.5 70.00 : 130.00	92.5 77.25 : 112.60	93.0 74.75 : 118.25	95.0 74.75 : 118.25
Phenanthrene	TM218	84.0 70.00 : 130.00	92.0 78.25 : 115.44	95.0 78.61 : 113.98	100.5 78.61 : 113.98
Pyrene	TM218	82.5 70.00 : 130.00	91.0 78.07 : 114.06	94.0 76.15 : 115.26	99.5 76.15 : 115.26

pН

Component	Method Code	QC 1208	QC 1218	QC 1227	QC 1293
рН	TM133	100.13 97.19 : 102.81	100.25 97.19 : 102.81	100.5 97.19 : 102.81	100.63 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

			•••••••••		
SDG:	150828-57	Location:	Stag Brewery	Order Number:	000000
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Total Organic Carbon

Component	Method Code	QC 1254	QC 1245
Total Organic Carbon	TM132	100.46 88.82 : 111.18	98.17 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1218	QC 1273
Total Sulphate	TM221	115.15 78.49 : 121.51	103.79 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1128	QC 1175
1,1,1,2-tetrachloroethane	TM116	95.6 83.24 : 124.28	102.6 83.24 : 124.28
1,1,1-Trichloroethane	TM116	100.8 81.77 : 121.07	102.4 81.77 : 121.07
1,1,2-Trichloroethane	TM116	100.4 79.24 : 112.23	94.2 79.24 : 112.23
1,1-Dichloroethane	TM116	103.0 72.58 : 116.06	106.6 72.58 : 116.06
1,2-Dichloroethane	TM116	118.8 77.50 : 122.50	112.0 77.50 : 122.50
1,4-Dichlorobenzene	TM116	96.2 73.23 : 116.39	95.4 73.23 : 116.39
2-Chlorotoluene	TM116	85.6 69.22 : 110.64	86.6 69.22 : 110.64
4-Chlorotoluene	TM116	89.0 68.57 : 106.26	87.4 68.57 : 106.26
Benzene	TM116	103.2 84.33 : 124.27	106.0 84.33 : 124.27
Carbon Disulphide	TM116	110.4 77.20 : 122.80	107.4 77.20 : 122.80
Carbontetrachloride	TM116	98.2 84.20 : 119.90	102.8 84.20 : 119.90
Chlorobenzene	TM116	102.4 85.28 : 129.96	103.2 85.28 : 129.96
Chloroform	TM116	108.2 82.73 : 119.72	106.6 82.73 : 119.72
Chloromethane	TM116	123.4 55.16 : 145.46	117.2 55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	108.4 73.56 : 118.93	108.4 73.56 : 118.93
Dibromomethane	TM116	104.4 73.40 : 116.60	98.0 73.40 : 116.60
Dichloromethane	TM116	113.2 76.16 : 121.98	108.2 76.16 : 121.98

CERTIFICATE OF ANALYSIS

	SDG: Job:	150828-57 H URS WIM-273	Location: Customer:	Stag Brewery AECOM	Order Numbe Report Numb
	Client Reference:		Attention:	Gary Marshall	Superseded

VOC MS (S)

329023

Order Number: Report Number: Superseded Report:

		QC 1128	QC 1175
Ethylbenzene	TM116	94.0	99.2
		80.07 : 125.98	80.07 : 125.98
Hexachlorobutadiene	TM116	69.0	89.2
		30.92 : 132.28	30.92 : 132.28
Isopropylbenzene	TM116	82.6	92.6
		69.27 : 125.32	69.27 : 125.32
Naphthalene	TM116	110.0	107.4
		79.15 : 121.98	79.15 : 121.98
o-Xylene	TM116	77.6	84.8
		75.46 : 111.52	75.46 : 111.52
p/m-Xylene	TM116	90.2	96.6
		76.97 : 121.75	76.97 : 121.75
Sec-Butylbenzene	TM116	69.6	85.8
		49.27 : 129.90	49.27 : 129.90
Tetrachloroethene	TM116	102.2	110.6
		87.96 : 133.65	87.96 : 133.65
Toluene	TM116	99.0	100.6
		79.23 : 114.58	79.23 : 114.58
Trichloroethene	TM116	94.6	98.4
		84.09 : 114.24	84.09 : 114.24
Trichlorofluoromethane	TM116	107.4	104.4
		76.22 : 114.82	76.22 : 114.82
Vinyl Chloride	TM116	98.2	100.8
		59.68 : 118.68	59.68 : 118.68

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

















:	150828-57	Location:	Stag Brewery	Order Number:	320023	
nt Reference	1_01.0_vviivi-275	Attention:	Gary Marshall	Superseded Report	529023	
			Chromatogran	n		
ysis: GRO	by GC-FID (S)	Sample No : Sample ID :	11992575	Depth : 3.00 - 3.5	D	
		oumpie ib .	ВН8А			
10		11992575	_GRO_S.DATA - HP6890 S	Signal 2		_
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SDG:	150828-57	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

329023

ANALYSIS	d/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE SOXTHERM		GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	ATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	BND OVER BND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	END OVER END	GCFID
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	ENDOWEREND	GCFID
POB TOT / POB CON	D&C	HEXANE/ACETONE	ENDOVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-C40(06-C40)EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAFID GC	WET	HEXANEACETONE	SHAVER	900 EZ
SEM VOLATILEORGANIC	WET	DOMAGETONE	SONCATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BPH .	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
POB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
POB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID'LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST 0CP/OPP	DOM	LIQUID'LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID'LIQUID SHAKE	HPLC
MINERAL OIL by R	TCE	LIQUID'LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Orodolte	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Tremolile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

CERTIFICATE OF ANALYSIS

SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	WhiteAsbestos
Amoste	BrownAsbestos
Orodolite	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 10 September 2015 H_URS_WIM 150829-68

Stag Brewery 329373

We received 4 samples on Saturday August 29, 2015 and 4 of these samples were scheduled for analysis which was completed on Thursday September 10, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

SDG: Job:	150829-68 H URS WIM-273	Location: Customer:	Stag Brewery AECOM	Order Number: Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11984669	BH3A		0.50	28/08/2015
11984670	BH3A		1.50 - 2.00	28/08/2015
11984671	BH5A		0.50	28/08/2015
11984672	BH5A		2.50 - 3.00	28/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol La	boratories	CE	ERTIF	ΙCΑΤ	E OF	ANALYSIS		Validated
SDG: Job: Client Reference:	150829-68 H_URS_WIM-273	Location: Customer Attention	Stag r: AEC : Gary	Brewei OM Marsh	ry all	Order Number: Report Number: 32 Superseded Report:	9373	
SOLID								
Results Legend	Lab Sample	No(s)	11984	11984	11984			
X Test			696 070	671	672			
No Determinati	on							
Possible	Custom Sample Refe	er erence	внза ВНЗА	BH5A	BH5A			
	AGS Refer	rence						
	Depth (i	m)	1.50 - 2.00 0.50	0.50	2.50 - 3.00			
	Contain	er	250g Amber Jar (AL 60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3	x	x	x			
Asbestos ID in Solid Sample	es All	NDPs: 0 Tests: 3	x	x	x			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3	x	x	x			
EPH CWG (Aliphatic) GC (S	i) All	NDPs: 0 Tests: 3	x	x	x			
EPH CWG (Aromatic) GC (S	3) All	NDPs: 0 Tests: 3	x	X	x			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3	x	x	x			
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3	x	x	x			
Metals in solid samples by C	DES All	NDPs: 0 Tests: 3	x	x	x			
PAH by GCMS	All	NDPs: 0 Tests: 3	x	x	x			
рН	All	NDPs: 0 Tests: 3	x	x	x			
Sample description	All	NDPs: 0 Tests: 4	x x	x	x			
Total Organic Carbon	All	NDPs: 0 Tests: 3	x	x	x			
Total Sulphate	All	NDPs: 0 Tests: 3	x	X	x			
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	x	x	x			
VOC MS (S)	All	NDPs: 0 Tests: 3	x	x	x			

CERTIFICATE OF ANALYSIS

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Sample Descriptions

Grain Sizes												
very fine	ne <0.063mm fine 0.00		0.063mm - 0.1mm	medium	0.1mn	n - 2mm	coarse	2mm - 1	10mm	very coar	se >10m	ım
Lab Sample	No(s) Custo	omer Sample Ref	Depth (m)		Colour	Descrip	tion	Grain size	Incl	usions	Inclusions 2	1
1198466	9	BH3A	0.50	D	ark Brown	Sand	ł	0.1 - 2 mm	Ste	ones	None]
1198467	0	BH3A	1.50 - 2.00	D	ark Brown	Sandy L	oam	0.1 - 2 mm	Ste	ones	None	
1198467	1	BH5A	0.50	Li	ght Brown	Sand	i	0.1 - 2 mm	Ste	ones	Vegetation	
1198467	2	BH5A	2.50 - 3.00	D	ark Brown	Sandy L	oam	0.1 - 2 mm	Ste	ones	None	1

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

Results Legend # ISO17025 accredited.		Customer Sample R	BH3A	BH5A		BH5A			
M mCERTS accredited. aq Aqueous / settled sample.		Donth (m)	0.50	0.50		0.50 0.00			
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid		Soil/Solid			
 Subcontracted test. % recovery of the surrogate standa check the efficiency of the method 	rd to The	Date Sampled Sampled Time	28/08/2015	28/08/2015		28/08/2015			
results of individual compounds wi samples aren't corrected for the rec	thin	Date Received SDG Ref	29/08/2015 150829-68	150829-68		150829-68			
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11984669	11964671		11984672			
Component	LOD/Unit	ts Method	<u> </u>	7		5.0		 	
of as received sample)	%	PM024	6.3	1		5.8			
Exchangeable Ammonia	<15	TM024	<15	27.7		<15			
as NH4 Organic Carbon, Total	mg/kg <0.2 %	6 TM132	1.52	1 33	М	<0.2	М	 	
organie oarbon, rotar	40.Z /	111102	1.02 M	1.00	М	-0.2	М		
рН	1 pH Units	TM133	8.22 M	7.86	М	7.86	М		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 #	<0.6	#	<0.6	#		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 & #	<15	2 #	<15	8 #		
Arsenic	<0.6 ma/ka	TM181	18.9 М	19.1	м	22.4	м		
Cadmium	<0.02 ma/ka	TM181	0.475 M	1.13	м	0.533	м		
Chromium	<0.9 ma/ka	TM181	19.5 м	25.4	м	21.6	м		
Copper	<1.4 ma/ka	TM181	49.3	28	м	3.56	м		
Lead	<0.7 ma/ka	TM181	178 M	85.7	м	9.05	M		
Mercury	<0.14 ma/ka	TM181	0.151 M	1.9	м	<0.14	м		
Nickel	<0.2	TM181	29.2	17.1	м	20.7	M		
Selenium	<1 mg/l	kg TM181	<1 #	<1	#	<1	#		
Zinc	<1.9 ma/ka	TM181	# 89.3	101	π M	28.6	и		
Sulphate, Total	<48 ma/ka	TM221	579 M	356	м	95.9	м		
					IVI		IVI	 	
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							_		

ALcontrol Laboratories Validated **CERTIFICATE OF ANALYSIS** 150829-68 Stag Brewery SDG: Location: Order Number: Job: H_URS_WIM-273 Customer: AECOM Report Number: 329373 Superseded Report: **Client Reference:** Attention: Gary Marshall PAH by GCMS Customer Sample R BH3A BH5A BH5A ISO17025 accredited mCERTS accredited. # M Aqueous / settled sample Depth (m) 0.50 0.50 2.50 - 3.00 diss.filt Dissolved / filtered sample tot.unfilt Total / unfiltered sample Sample Type Soil/Solid Soil/Solid Soil/Solid Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Trigger breach confirmed Sample deviation (see appendix) Date Sampled 28/08/2015 28/08/2015 28/08/2015 ... Sampled Time Date Received 29/08/2015 29/08/2015 29/08/2015 150829-68 150829-68 SDG Ref 150829-68 11984669 11984671 11984672 Lab Sample No.(s) (F) 1-5&+§@ AGS Reference LOD/Units Component Method Naphthalene-d8 % TM218 95 96.9 97.3 % recovery** % TM218 90.7 92.6 96 Acenaphthene-d10 % recovery* Phenanthrene-d10 % % TM218 89.2 90.5 94.6 recovery**

85

92.4

15.9

28.9

9.32

<10

147

39.9

417

359

227

236

391

132

260

156

46.8

196

2660

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

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Μ

86.6

90.2

<9

<12

<8

<10

<15

<16

<17

29.8

<14

24 5

23.5

<14

<15

<18

<23

<24

<118

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Μ

Chrysene-d12 %

Acenaphthylene

Acenaphthene

Phenanthrene

Anthracene

Fluoranthene

Benz(a)anthracene

Benzo(b)fluoranthene

Benzo(k)fluoranthene

Indeno(1,2,3-cd)pyrene

Dibenzo(a,h)anthracene

Benzo(g,h,i)perylene

PAH, Total Detected

USEPA 16

Benzo(a)pyrene

Pyrene

Chrysene

Fluorene

recovery** Perylene-d12 %

recovery** Naphthalene %

%

<9 µg/kg

<12

µg/kg

<8 µg/kg

<10

µg/kg

<15

µg/kg

<16

µg/kg

<17 µg/kg

<15 µg/kg

<14

µg/kg

<10

µg/kg

<15

µg/kg

<14

µg/kg

<15

µg/kg

<18

µg/kg

<23

µg/kg

<24

µg/kg

<118

µg/kg

TM218

83.6

877

34.7

29.9

<8

<10

188

36

445

384

245

291

459

134

289

210

63.4

245

3050

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ALcontrol Laboratories Validated **CERTIFICATE OF ANALYSIS** 150829-68 SDG: Location: Stag Brewery Order Number: H_URS_WIM-273 Customer: AEČOM 329373 Job: **Report Number: Client Reference:** Attention: Gary Marshall . Superseded Report: TPH CWG (S)

Results Legend		Customer Sample R	BH3A	BH5A	BH5A			
# ISO17025 accredited. M mCERTS accredited.								
aq Aqueous / settled sample.		Depth (m)	0.50	0.50	2 50 - 3 00			
diss.filt Dissolved / filtered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid			
* Subcontracted test.		Date Sampled	28/08/2015	28/08/2015	28/08/2015			
** % recovery of the surrogate standa	ard to	Sampled Time						
check the efficiency of the method results of individual compounds w	. The ithin	Date Received	29/08/2015	29/08/2015	29/08/2015			
samples aren't corrected for the re	covery	SDG Ref	150829-68	150829-68	150829-68			
(F) Trigger breach confirmed		Lab Sample No.(s)	11904009	11904071	11904072			
Component		AGS Reference						
		ints Method						
GRO Surrogate %	%	1M089	69	72	99			
recovery**								
GRO TOT (Moisture	<44	TM089	<44	<44	<44			
Corrected)	µg/kg	1	М	N	1	М		
Methyl tertiary butyl ether	<5 µa/	/ka TM089	<5	<5	<5			
(MTBE)	5		M		1	м		
Ronzono	<10	TM090	<10	<10	<10	141		
Belizene	<10 ug/kg	11009	<10 M	<10	<10			
	μιγκί	,	M	IN D	1	IVI	 	
loluene	<2 µg/	kg IM089	<2	<2	<2			
			M	N	1	М		
Ethylbenzene	<3 µg/	/kg TM089	5.34	<3	<3			
			М	N	1	М		
m.p-Xvlene	<6 ua	/kg TM089	<6	<6	<6			
	5		M		1	м		
	<2.00		101	-2	-2	IVI		
0-Aylerie	~3 µg/	kg Tivi069	~5	5	. ``			
			M	N	1	M	 	
sum of detected mpo	<9 µg/	/kg TM089	<9	<9	<9			
xylene by GC								
sum of detected BTEX by	<24	TM089	<24	<24	<24			
GC	ua/ka	1						
Aliphatics >C5 C6	~10	, TM080	<10	<10	<10			
Aliphalics >C5-C0	<10 	11009	<10	<10	<10			
	μg/κg	,					 	
Aliphatics >C6-C8	<10	TM089	<10	<10	<10			
	µg/kg	1						
Aliphatics >C8-C10	<10	TM089	<10	<10	<10			
-	µg/ko	1						
Aliphatics >C10-C12	<10	, TM080	<10	<10	<10			
		110003		10	\$10			
	μιγκί						 	
Aliphatics >C12-C16	<100) TM173	<100	<100	<100			
	µg/kg	J						
Aliphatics >C16-C21	<100) TM173	3140	234	<100			
	µg/ko	1						
Aliphatics >C21-C35	<100	,) TM173	9790	6660	<100			
		1	0100	0000	100			
	μ9/κ		0000	000			 	
Aliphatics >C35-C44	<100) IM173	3030	968	<100			
	µg/kg]						
Total Aliphatics >C12-C44	<100) TM173	15900	7860	<100			
	µg/kg	J						
Aromatics >EC5-EC7	<10	TM089	<10	<10	<10			
	ua/ka	1						
Aromatics >EC7-EC8	<10		<10	<10	<10			
		110003		210	10			
America : EQ0 EQ10	μу/κυ	J	.40	.40	10		 	
Aromatics >EC8-EC10	<10	11/1089	<10	<10	<10			
	µg/kg]						
Aromatics >EC10-EC12	<10	TM089	<10	<10	<10			
	µg/kg]						
Aromatics >EC12-EC16	<100) TM173	714	358	<100			
	ua/ka	1						
Aromatica >EC16 EC21	~100) TM172	4790	2620	<100			
Aromatics >EC 10-EC21	<100		4760	2020	<100			
	μς/κς							
Aromatics >EC21-EC35	<100) TM173	24700	16100	<100			
	µg/kg]						
Aromatics >EC35-EC44	<100) TM173	12700	8050	<100			
	µg/ko	J						
Aromatics >FC40-FC44	<100) TM173	5160	2870	<100			
	ug/kg	1	0100	2010	100			
Total Aramatian	μg/ng		42000	07400	-100		 	
	<100	. IM173	42900	27100	<100			
-EU12-EU44	μg/κg						 	
Total Aliphatics &	<100) TM173	58900	35000	<100			
Aromatics >C5-C44	µg/kg]						

150829-68

SDG:

Job:

Client Referer	nce:			Attention:	Gar	y Marshall				Superseded Repo	ort:	
VOC MS (S)											-	
Ret # ISO17025 acc M mCERTS acc aq Aqueous / se	sults Legend credited. redited. ttled sample.		Customer Sample R Depth (m)	BH3A 0.50		BH5A 0.50		BH5A 2.50 - 3.00				
tot.unfilt Total / unfilte * Subcontracte ** % recovery o check the effet	red sample. red sample. ed test. f the surrogate standar iciency of the method.	rd to The	Sample Type Date Sampled Sampled Time Date Received	Soil/Solid 28/08/2015 29/08/2015		Soil/Solid 28/08/2015 29/08/2015		Soil/Solid 28/08/2015 29/08/2015				
results of ind samples arer (F) Trigger bread 1-5&+§@ Sample devia	lividual compounds wit 't corrected for the rec ch confirmed ation (see appendix)	overy	SDG Ref Lab Sample No.(s) AGS Reference	150829-68 11984669		150829-68 11984671		150829-68 11984672				
Dibromofluorom	ethane**	LOD/Un	Its Method TM116	116		122		120				
Toluene-d8**		%	TM116	104	-	103		113				
4-Bromofluorob	enzene**	%	TM116	69.3		72.4		102				
Dichlorodifluoro	methane	<6 ug	1	<6		<6		<6				
Chloromethane	methane	<7 µg/	kg TM116	<7	м	<7	М	<7	м			
Vinyl Chloride		<6 µg/	kg TM116	<6	#	<6	#	<6	#			
Bromomethane		-ο μg, <10	TM116	<10	м	<10	М	<10	м			
Chloroothono		μg/kg		<10	м	<10	м	<10	м			
Tricklass		×10 μg/kg		<10	м	<10	М	<10	м			
	netnane	<6 µg/	kg 11/116	<0	м	<0	м	<0	м			
1,1-Dichloroethe	ene	10> µg/kg	I M116	<10	#	<10	#	<10	#			
Carbon Disulph	ide	<7 µg/	kg TM116	<7	м	<7	м	<7	м			
Dichloromethan	e	10µg/kg	TM116	<10	#	<10	#	<10	#			
Methyl Tertiary	Butyl Ether	10< µg/kg	TM116	<10	м	<10	М	<10	м			
trans-1,2-Dichlo	roethene	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
1,1-Dichloroetha	ane	<8 µg/	kg TM116	<8	м	<8	м	<8	м			
cis-1,2-Dichloro	ethene	<6 µg/	kg TM116	<6	м	<6	м	<6	м			
2,2-Dichloropro	pane	<10 µg/kg	TM116	<10	м	<10	М	<10	м			
Bromochlorome	thane	<10 µg/kg	TM116	<10	м	<10	М	<10	м			
Chloroform		<8 µg/	kg TM116	<8	м	<8	М	<8	м			
1,1,1-Trichloroe	thane	<7 µg/	kg TM116	<7	м	<7	М	<7	м			
1,1-Dichloropro	pene	<10 µg/kg	TM116	<10	м	<10	М	<10	м			
Carbontetrachlo	oride	<10 µg/kg	TM116	<10	м	<10	М	<10	м			
1,2-Dichloroetha	ane	<5 µg/	kg TM116	<5	м	<5	М	<5	м			
Benzene		<9 µg/	'kg TM116	<9	м	<9	м	<9	м			
Trichloroethene		<9 µg/	kg TM116	<9	#	<9	#	<9	#			
1,2-Dichloropro	pane	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
Dibromomethar	ie	<9 µg/	kg TM116	<9	м	<9	м	<9	м			
Bromodichloron	nethane	<7 µg/	kg TM116	<7	м	<7	м	<7	м			
cis-1,3-Dichloro	propene	<10 µg/ko	TM116	<10	м	<10	M	<10	м			
Toluene		<7 µg/	kg TM116	<7	м	<7	M	<7	м			
trans-1,3-Dichlo	ropropene	<10 µg/ko	TM116	<10		<10		<10				
1,1,2-Trichloroe	thane	<10 µg/kg	TM116	<10	м	<10	м	<10	м			

CERTIFICATE OF ANALYSIS

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

Results Legend		Customer Sample R	BH3A	BH5A	BH5A		
M mCERTS accredited.							
aq Aqueous / settled sample.		Depth (m)	0.50	0.50	2.50 - 3.00		
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid		
* Subcontracted test.	ard to	Date Sampled	28/08/2015	28/08/2015	28/08/2015		
check the efficiency of the method	. The	Date Received	29/08/2015	29/08/2015	29/08/2015		
results of individual compounds w samples aren't corrected for the re	ithin coverv	SDG Ref	150829-68	150829-68	150829-68		
(F) Trigger breach confirmed	,	Lab Sample No.(s)	11984669	11984671	11984672		
1-5&+s@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/UN		-		-		
1,3-Dichloropropane	<7 µg/	kg IM116	</td <td><!--</td--><td><!--</td--><td></td><td></td></td></td>	</td <td><!--</td--><td></td><td></td></td>	</td <td></td> <td></td>		
			M	M	M		
letrachloroethene	<5 µg/	kg IM116	<5	<5	<5		
			M	M	M		
Dibromochloromethane	<10	TM116	<10	<10	<10		
	µg/kg	1	M	M	M		
1,2-Dibromoethane	<10	TM116	<10	<10	<10		
	µg/kg	1	M	M	M		
Chlorobenzene	<5 µg/	'kg TM116	<5	<5	<5		
			M	M	M		
1,1,1,2-Tetrachloroethane	<10	TM116	<10	<10	<10		
	µg/kg	1	M	M	M		
Ethylbenzene	<4 µg/	'kg TM116	4.45	<4	<4		
			M	М	M		
p/m-Xylene	<10	TM116	<10	<10	<10		
	µg/kg	1	#	#	#		
o-Xylene	<10	TM116	<10	<10	<10		
	µg/kg	1	M	M	M		
Styrene	<10	TM116	<10	<10	<10		
	µg/kg	1	#	#	#		
Bromoform	<10	TM116	<10	<10	<10		
	µg/kg	1	М	м	м		
Isopropylbenzene	<5 µq/	kg TM116	<5	<5	<5		
,		Ũ	#	#	#		
1.1.2.2-Tetrachloroethane	<10	TM116	<10	<10	<10		
.,.,_,	ua/ka	1	M	M	м		
1 2 3-Trichloropropane	<16	TM116	<16	<16	<16		
,_,ccropropano	ua/ka	1	M	М	м		
Bromobenzene	<10	, TM116	<10	<10	<10		
Bronnebonizente	ua/ko	1	M	M	м		
Pronylbenzene	<10	, TM116	<10	<10	<10		
riopyidenzene		1	M	-10 M	M		
2-Chlorotoluene	<9.00	, 	الار ح0	ivi ∠Q	الار م		
2-Onlorotoidene	~9 µg/	Ng INTIO	~5 M	-3 M	-3 M		
135 Trimethylbenzene	<8 ug	ka TM116	N	- 9	- R		
1,3,5-Thinethylbenzene	~o µg/	Ng HVITTO	~0 M	~0 M	~0 M		
1 Chlorotoluene	<10	TM116	<10	<10	<10		
4-Onlorotoldene		1	<10 M	~10 M	STO M		
tert Butylbenzene	~1/	, TM116		 	IVI		
tert-Dutyibenzene		1	>1 4 M	>1 4	×1 4 M		
124 Trimethylbenzene		ka TM116		10	IVI		
1,2,4-Thineutyibenzene	~9 µg/	Ng INTIO	-5 #	-3 #	-3 #		
sec-Butylbenzene	<10	TM116	<i>*</i>	۳ <10	<i>*</i>		
Sec-Dutyibenzene		1	<10 M	~10 M	S10		
1-leopropyltoluene	P9/N	TM116			-10		
4-isopropyiloidene	< 10 ug/kg		<10 M	<10	<10 M		
1.2 Dichlershanzona	μ <u>γ</u> /κε		IVI	11/1	IVI 20		
1,3-Dichiorobenzene	≺o µg/	Kg TIVITIO	⁵⁰ M	~0	⁵⁰		
	.5	TN440	M	M	M		
1,4-Dichlorobenzene	<5 µg/	кд пипто	<0	<0	<0		
n Dutulhannana	- 11	TMAAC	M	M	M		
n-Butyibenzene	<11	11/1116	<11	<11	<11		
	μg/κg				10		
1,2-Dichlorobenzene	<10	IM116	<10	<10	<10		
	µg/kg	J	M	M	M	 	
1,2-Dibromo-3-chloroprop	<14	TM116	<14	<14	<14		
ane	µg/kg	J	M	M	M	 	
I ert-amyl methyl ether	<10	TM116	<10	<10	<10		
	µg/kg	J	#	#	#	 	
1,2,4-Irichlorobenzene	<20	TM116	<20	<20	<20		
	µg/kg	J				 	
Hexachlorobutadiene	<20	TM116	<20	<20	<20		
	µg/kg	J				 	
Naphthalene	<13	IM116	<13	<13	<13		
	µg/kg		M	M	<u> </u>	 	

CERTIFICATE OF ANALYSIS

Validated

VOC MS (S)

#	Results Legend ISO17025 accredited.		Customer Sample R	BH3A	BH5A	BH5A		
M	mCERTS accredited. Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.		Depth (m) Sample Type	0.50 Soil/Solid	0.50 Soil/Solid	2.50 - 3.00 Soil/Solid		
*	Subcontracted test.		Date Sampled	28/08/2015	28/08/2015	28/08/2015		
	% recovery of the surrogate standa check the efficiency of the method.	rd to The	Sampled Time Date Received	29/08/2015	29/08/2015	29/08/2015		
	results of individual compounds wi samples aren't corrected for the rec	thin covery	SDG Ref	150829-68	150829-68	150829-68		
(F) 1-5&+§@	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No.(s)	11984669	11984671	11984672		
Compo	onent	LOD/Uni	its Method					
1.2.3-	Trichlorobenzene	<20	TM116	<20	<20	<20		
, ,-		µg/kg		#	#	#		
L								
			_					

CERTIFICATE OF ANALYSIS

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH3A 0.50 SOLID 28/08/2015 00:00:00 01/09/2015 10:13:47 150829-68 11984669 TM048	2/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH5A 0.50 SOLID 28/08/2015 00:00:00 01/09/2015 10:15:44 150829-68 11984671 TM048	2/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH5A 2.50 - 3.00 SOLID 28/08/2015 00:00:00 03/09/2015 03:31:51 150829-68 11984672 TM048	09/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
CERTIFICATE OF ANALYSIS

 SDG:
 150829-68
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329373

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

 SDG:
 150829-68
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329373

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	11984669	11984670	11984671	11984672
Customer Sample Ref.	BH3A	BH3A	BH5A	BH5A
·				
AGS Ref.				
Depth	0.50	1.50 - 2.00	0.50	2.50 - 3.00
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015		09-Sep-2015	09-Sep-2015
Asbestos ID in Solid Samples	02-Sep-2015		02-Sep-2015	09-Sep-2015
Easily Liberated Sulphide	08-Sep-2015		08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	02-Sep-2015		02-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	04-Sep-2015		04-Sep-2015	10-Sep-2015
Metals in solid samples by OES	07-Sep-2015		07-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015		03-Sep-2015	03-Sep-2015
pН	09-Sep-2015		09-Sep-2015	09-Sep-2015
Sample description	01-Sep-2015	29-Aug-2015	01-Sep-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015		10-Sep-2015	07-Sep-2015
Total Sulphate	04-Sep-2015		04-Sep-2015	04-Sep-2015
TPH CWG GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015		02-Sep-2015	02-Sep-2015

150829-68

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall

Order Number: Report Number: 329373 Superseded Report:

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1205
Exchangeable Ammonium as NH4	TM024	98.01 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1231
Easily Liberated Sulphide	TM180	94.71 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aliphatics	TM173	85.21	87.08
>C12-C35		62.50 : 112.50	70.80 : 111.51

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aromatics	TM173	82.67	82.67
>EC12-EC35		60.62 : 126.95	65.21 : 121.32

GRO by GC-FID (S)

Component	Method Code	QC 1141		
Benzene by GC (Moisture Corrected)	TM089	93.0 76.33 : 121.87		
Ethylbenzene by GC (Moisture Corrected)	TM089	91.5 75.73 : 123.83		
m & p Xylene by GC (Moisture Corrected)	TM089	92.0 75.52 : 120.32		
MTBE GC-FID (Moisture Corrected)	TM089	95.0 77.89 : 119.70		
o Xylene by GC (Moisture Corrected)	TM089	91.0 74.15 : 124.59		
QC	TM089	93.51 62.31 : 122.61		
Toluene by GC (Moisture Corrected)	TM089	92.0 77.91 : 122.33		

CERTIFICATE OF ANALYSIS

 SDG:
 150829-68
 Location:
 Stag Brewery

 Job:
 H_URS_WIM-273
 Customer:
 AECOM

 Client Reference:
 Attention:
 Gary Marshall

Order Number: Report Number: 329373 Superseded Report:

Hexavalent Chromium (s)

Component	Method Code	QC 1187	QC 1229
Hexavalent Chromium	TM151	96.0 92.20 : 106.60	100.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1293	QC 1251
Aluminium	TM181	96.15 86.49 : 129.71	118.46 86.49 : 129.71
Antimony	TM181	95.34 77.50 : 122.50	94.62 77.50 : 122.50
Arsenic	TM181	90.27 82.63 : 117.37	95.58 82.63 : 117.37
Barium	TM181	100.75 79.45 : 120.55	100.75 79.45 : 120.55
Beryllium	TM181	98.76 85.92 : 121.27	101.55 85.92 : 121.27
Boron	TM181	88.55 77.41 : 143.83	129.01 77.41 : 143.83
Cadmium	TM181	93.28 81.95 : 118.05	94.29 81.95 : 118.05
Chromium	TM181	90.2 81.29 : 118.71	102.75 81.29 : 118.71
Cobalt	TM181	92.33 83.86 : 116.14	98.17 83.86 : 116.14
Copper	TM181	99.32 78.57 : 121.43	99.05 78.57 : 121.43
Iron	TM181	96.55 87.50 : 122.82	104.83 87.50 : 122.82
Lead	TM181	93.7 74.18 : 117.25	91.34 74.18 : 117.25
Manganese	TM181	98.0 82.91 : 117.09	103.4 82.91 : 117.09
Mercury	TM181	90.28 81.99 : 118.01	93.63 81.99 : 118.01
Molybdenum	TM181	91.24 81.45 : 118.55	91.88 81.45 : 118.55
Nickel	TM181	92.44 79.64 : 120.36	100.0 79.64 : 120.36
Phosphorus	TM181	94.34 81.03 : 118.97	97.32 81.03 : 118.97
Selenium	TM181	102.05 87.05 : 121.93	102.91 87.05 : 121.93
Strontium	TM181	90.04 83.64 : 116.36	103.07 83.64 : 116.36
Thallium	TM181	93.03 77.50 : 122.50	86.57 77.50 : 122.50
Tin	TM181	90.03 78.30 : 113.98	91.69 78.30 : 113.98
Titanium	TM181	90.63 71.02 : 128.98	114.06 71.02 : 128.98

CERTIFICATE OF ANALYSIS

SDG: Job: Client Reference:	150829-68 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Report:	329373
· · · · · · · · · · · · · · · · · · ·					

Metals in solid samples by OES

	1	QC 1293	QC 1251
Vanadium	TM181	89.12 86.61 : 113.39	97.94 86.61 : 113.39
Zinc	TM181	95.29 89.82 : 114.54	101.14 89.82 : 114.54

PAH by GCMS

Component	Method Code	QC 1179	QC 1161
Acenaphthene	TM218	92.5 79.96 : 117.68	85.0 76.50 : 121.50
Acenaphthylene	TM218	87.0 76.25 : 113.75	84.5 73.50 : 118.50
Anthracene	TM218	92.0 75.14 : 109.30	86.0 74.25 : 117.75
Benz(a)anthracene	TM218	96.0 82.90 : 120.19	95.5 82.07 : 118.33
Benzo(a)pyrene	TM218	96.0 82.80 : 121.21	92.0 79.75 : 116.97
Benzo(b)fluoranthene	TM218	96.0 81.11 : 119.79	98.5 82.41 : 117.15
Benzo(ghi)perylene	TM218	88.5 81.23 : 116.67	89.0 77.09 : 114.38
Benzo(k)fluoranthene	TM218	92.0 79.07 : 114.76	95.5 81.43 : 115.17
Chrysene	TM218	93.5 77.94 : 118.46	94.5 82.50 : 113.51
Dibenzo(ah)anthracene	TM218	92.0 79.94 : 120.03	92.5 81.00 : 120.00
Fluoranthene	TM218	94.0 77.89 : 110.15	90.0 78.67 : 117.61
Fluorene	TM218	95.0 80.93 : 113.54	87.5 76.50 : 121.50
Indeno(123cd)pyrene	TM218	92.5 80.37 : 120.17	91.0 79.19 : 117.60
Naphthalene	TM218	94.5 79.70 : 112.37	90.0 77.00 : 117.50
Phenanthrene	TM218	95.0 78.44 : 113.95	88.5 75.00 : 123.00
Pyrene	TM218	92.0 81.17 : 112.33	88.0 77.82 : 116.98

pН

Component	Method Code	QC 1220	QC 1256
рН	TM133	101.39 96.22 : 103.78	100.88 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

Validated

SDG: Job: Client Reference:	150829-68 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Report:	329373	

Total Organic Carbon

Component	Method Code	QC 1297	QC 1208	QC 1227
Total Organic Carbon	TM132	97.72 89.40 : 103.09	99.54 89.40 : 103.09	95.89 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1298
Total Sulphate	TM221	102.27 78.49 : 121.51	117.42 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1154
1,1,1,2-tetrachloroethane	TM116	105.0 76.60 : 121.00
1,1,1-Trichloroethane	TM116	102.2 77.80 : 123.40
1,1,2-Trichloroethane	TM116	94.4 75.40 : 119.80
1,1-Dichloroethane	TM116	107.0 80.84 : 124.49
1,2-Dichloroethane	TM116	109.4 91.00 : 135.67
1,4-Dichlorobenzene	TM116	105.4 80.88 : 114.60
2-Chlorotoluene	TM116	102.8 74.00 : 117.20
4-Chlorotoluene	TM116	97.2 71.20 : 113.20
Benzene	TM116	100.6 79.60 : 125.20
Carbon Disulphide	TM116	104.4 74.91 : 122.14
Carbontetrachloride	TM116	101.4 76.80 : 121.20
Chlorobenzene	TM116	103.4 83.47 : 116.82
Chloroform	TM116	108.0 82.00 : 128.80
Chloromethane	TM116	129.8 74.62 : 135.86
Cis-1,2-Dichloroethene	TM116	113.4 81.20 : 128.00
Dibromomethane	TM116	94.4 73.40 : 116.60
Dichloromethane	TM116	111.8 86.60 : 137.00

CERTIFICATE OF ANALYSIS

Validated

SDG: Job: Client Beference:	150829-68 H_URS_WIM-273	Location: Customer:	Stag Brewery AECOM	Order Number: Report Number: Supercoded Benert	329373
Chefit Reference.		Allention.	Gary Marshall	Superseueu Report.	
VOC MS (S)					

		QC 1154
Ethylbenzene	TM116	97.8 73.60 : 115.60
Hexachlorobutadiene	TM116	86.2 33.65 : 130.56
lsopropylbenzene	TM116	101.0 72.52 : 117.52
Naphthalene	TM116	106.0 83.23 : 126.48
o-Xylene	TM116	92.2 69.60 : 110.40
p/m-Xylene	TM116	93.6 71.30 : 112.70
Sec-Butylbenzene	TM116	105.0 59.20 : 125.20
Tetrachloroethene	TM116	105.8 85.92 : 127.92
Toluene	TM116	92.6 76.08 : 110.17
Trichloroethene	TM116	101.2 78.17 : 121.37
Trichlorofluoromethane	TM116	109.0 83.78 : 132.82
Vinyl Chloride	TM116	101.6 66.81 : 138.46

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.



















CERTIFICATE OF ANALYSIS

SDG:	150829-68	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

329373

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	d/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	ATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	BNDOVERBND	GCFD
EPH (MNOL)	D&C	HEXANEACETONE	BND OVER BND	GCFD
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVER END	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	ENDOVEREND	GCFID
PCB TOT / PCB CON	D&C	HEXANEACETONE	ENDOVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAFID GC	WET	HEXANEACETONE	SHAVER	0CEZ
SEM VOLATILEORGANIC	WET	DOMACETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH .	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolile	White Asbestos
Amoste	BrownAsbestos
Oroádalte	Blue Asbestos
Fibrous Adindite	-
Fibrous Anthophylite	-
FibrousTrendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Validated

CERTIFICATE OF ANALYSIS

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	WhiteAsbestos
Amoste	BrownAsbestos
Orodolite	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 14 September 2015 H_URS_WIM 150902-38

Stag Brewery 329713

We received 8 samples on Wednesday September 02, 2015 and 8 of these samples were scheduled for analysis which was completed on Monday September 14, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

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SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11995368	BH3			01/09/2015
11995366	BH4			01/09/2015
11995367	BH5			01/09/2015
11995371	BH8			01/09/2015
11995370	BH109			01/09/2015
11995369	BH110			01/09/2015
11995372	BH111			01/09/2015
11995373	DUP01			01/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol La	aborator	ies	C	ER	T	FI	CA	ATE	EC)F	Α	NA		YS	sis	5												[V	alidated		
SDG: Job: Client Reference:	150902-38 H_URS_W	/IM-273	Location Custome Attention	r:	Si Al G	tag EC(ary	Bre DM Mai	wery	, , II				-			- 		O Re Si	rde epo upe	r Ni ort N	uml Ium dec	ber ibe	: r: epo	ort:	3	3297	'13						
LIQUID Results Legend X Test		Lab Sample	Lab Sample No(s)					11995368					11995366					11995367				11000011	11005371				11995370			11995369			
No Determinat Possible	lion	Customer Sample Reference						BH3					BH4				Ţ	BH5				Ū	RHØ				BH109			BH110			
		AGS Reference																															
		Depth (m)		Depth (m)																													
		Containe	r	0.5I glass bottle (AL	250ml ROD (ALE2	Dissolved Metals Pr	H2SO4 (ALE244)	Vial (ALE297)	0.51 glass hottle (ALE21	500ml Plastic (ALE2	Dissolved Metals Pr	HNO3 Filtered (ALE	Vial (ALE297)	250ml BOD (ALE21	500ml Plastic (ALE2	H2SO4 (ALE244)	HNO3 Filtered (ALE	0.5l glass bottle (AL Vial (Al E297)	250ml BOD (ALE21	500ml Plastic (ALE2	H2SO4 (ALE244)	HNO3 Filtered (ALE	0.5l glass bottle (AL	250ml BOD (ALE21	Dissolved Metals Pr 500ml Plastic (ALE2)	H2SO4 (ALE244)	Vial (ALE297)	0.5I glass bottle (AL	500ml Plastic (ALE2	Dissolved Metals Pr			
Ammoniacal Nitrogen		All	NDPs: 0 Tests: 8				x)	<				x					x					x				X	.		
Anions by Kone (w)		All	NDPs: 0 Tests: 8		>	<mark>(</mark>				x					x					x					x				x		_		
COD Unfiltered		All	NDPs: 0 Tests: 8		x				x					x					x					x					x				
Dissolved Metals by ICP-M	S	All	NDPs: 0 Tests: 8				<u>,</u>	C				X					X					x				>	C						
Dissolved W, Nb and Zr by	ICP-MS	All	NDPs: 0 Tests: 8) 	C				X					X					x					<u> </u>						
EPH (DRO) (C10-C40) Aqu (W)	ieous	All	NDPs: 0 Tests: 8	x					×					x				x					x					x					
EPH CWG (Aliphatic) Aque (W)	ous GC	All	NDPs: 0 Tests: 8	x					x					x				x					x					x					
EPH CWG (Aromatic) Aque (W)	eous GC	All	NDPs: 0 Tests: 8	x					x					x				x					x					x					
GRO by GC-FID (W)		All	NDPs: 0 Tests: 8					x					x					x					x				x				-		
Mercury Dissolved		All	NDPs: 0 Tests: 8			x					x					×				×	<u>(</u>				x					x			
pH Value		All	NDPs: 0 Tests: 8		>	C				X					X					X					x				×				
SVOC MS (W) - Aqueous		All	NDPs: 0 Tests: 7	x					×					x				x					x					x			_		
Total EPH (aq)		All	NDPs: 0 Tests: 8	x					x		+			x				X					X					X					
TPH CWG (W)		All	NDPs: 0 Tests: 8	x					x					x				x					x					x			-		
VOC MS (W)		All	NDPs: 0 Tests: 8					x					x					x				2	x				x						

ALcontrol La	aborator	ies	С	ERT	TIF		TE	ΞΟ	FA	١N	AL	YS	S		Validated
SDG: Job: Client Reference:	150902-38 H_URS_W	/IM-273	Location Custome Attention	: % r: /	Stag AE0 Gar	g Brev COM y Mai	wery	y III					Order Number: Report Number: Superseded Report:	329713	
LIQUID								_							
Results Legend		Lab Sample I	No(s)	19953				19953				19953			
X Test				369				372				373			
No Determinat Possible	tion	Customer		œ				B				D			
	Sample Reference		rence	H110				H1 11				UP01			
		AGS Refere	nce												
		Depth (m)									_			
		Containe	r	Vial (ALE297) HNO3 Filtered (ALE	0.5I glass bottle (AL	500ml Plastic (ALE2	H2SO4 (ALE244)	Vial (ALE297) HNO3 Filtered (ALE	250ml BOD (ALE21 0.51 alass bottle (AL	Dissolved Metals Pr 500ml Plastic (ALE2	HNO3 Filtered (ALE H2SO4 (ALE244)	Vial (ALE297)			
Ammoniacal Nitrogen		All	NDPs: 0 Tests: 8				x				x				
Anions by Kone (w)		All	NDPs: 0 Tests: 8			x				x					
COD Unfiltered		All	NDPs: 0 Tests: 8			x			x						
Dissolved Metals by ICP-M	S	All	NDPs: 0 Tests: 8	x				<mark>x</mark>			x				
Dissolved W, Nb and Zr by	ICP-MS	All	NDPs: 0 Tests: 8	x				x			x	2			
EPH (DRO) (C10-C40) Aqu (W)	suoar	All	NDPs: 0 Tests: 8		x				x						
(W)	eous GC	All	NDPs: 0 Tests: 8		x				×						
(W)	eous GC	All	NDPs: 0 Tests: 8		x				×						
Massura Dissolved			NDPs: 0 Tests: 8	×				x				x			
		All	NDPs: 0 Tests: 8)	<mark>(</mark>			×					
pH Value		All	NDPs: 0 Tests: 8			x				x					
SVUC MS (W) - Aqueous		All	NDPs: 0 Tests: 7		x										
I otal EPH (aq)		All	NDPs: 0 Tests: 8		x				x						
TPH CWG (W)		All	NDPs: 0 Tests: 8		x				x						
VOC MS (W)		All	NDPs: 0 Tests: 8	x				x				x			

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Results Legend		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
# ISO17025 accredited.								
ag Agueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m)						
tot.unfilt Total / unfiltered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
* Subcontracted test.		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
** % recovery of the surrogate standa	rd to	Sampled Time		00:00:00				•
results of individual compounds w	ithin	Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
samples aren't corrected for the re-	covery	SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
(F) Trigger breach confirmed		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Un	its Method						
A management A little and a sec	-0.0		-0.0	-0.0	0.500	0.040	4.00	-0.0
Ammoniacal Nitrogen as	<0.2 m	Ig/I 110099	<0.2	<0.2	0.508	0.619	1.23	<0.2
N			#	#	#	#	#	#
Ammoniacal Nitrogen as	<0.3 m	a/I TM099	<0.3	<0.3	0.653	0 796	1 58	<0.3
Animoniacai Nili Ogen as	~0.5 II	Ig/1 110099	~0.5	~0.5	0.000	0.790	1.50	~0.5
NH4			#	#	#	#	#	#
COD, unfiltered	<7 ma	1/I TM107	<7	8.09	21.2	10.5	190	<7
		,	ш	ш	и			ш
			#	#	#	#	#	#
Antimony (diss.filt)	<0.16	6 TM152	0.415	0.36	<0.16	0.726	0.64	0.464
	µg/l							
America (dian filt)	10.40		7.00	F 00	E 40	45.7	20.0	4.4
Arsenic (diss.fiit)	<0.12	2 IN1152	7.32	5.08	5.12	15.7	32.6	14
	µg/l		#	#	#	#	#	#
Barium (diss filt)	<0.03	TM152	64.2	22.1	17.0	83.4	18.2	40.7
Danum (uiss.int)	-0.00	1111132	04.2	22.1	-1.5	00.4	10.2	40.7
	µg/l		#	#	#	#	#	#
Beryllium (diss.filt)	< 0.07	7 TM152	<0.07	<0.07	<0.07	<0.07	<0.07	< 0.07
,	un/l		ш	ш	ш	ш	ш	ш
-	μy/I -		#	#	#	#	#	#
Boron (diss.filt)	<9.4 µ	g/I TM152	152	52.7	99.2	130	107	137
	l i		#	#	#	#	#	#
Codmium (disc filt)	-0.4		π	π -0.4	-0.4		π -0.4	π -0.4
Cadmium (diss.filt)	<0.1 µ	g/i IM152	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			#	#	#	#	#	#
Chromium (diss filt)	<0.00	7 TM152	3.62	1 53	2.26	3 0.8	3 56	3 //
	×0.22		5.02	1.00	2.20	0.00	0.00	0.44
	µg/I		#	#	#	#	#	#
Cobalt (diss.filt)	<0.06	6 TM152	2.33	0.594	3.15	2.77	9.39	4.36
	110/		щ	ш	ш	ш.	ш	ш
	μy/i		#	#	#	#	#	#
Copper (diss.filt)	<0.85	5 TM152	1.13	0.939	1.09	1.4	1.26	1.29
	ua/l		#	#	#	#	#	#
Land (dia 5 C H)		T14450	<i>^π</i>	<i>^{<i>m</i>}</i>			<i>"</i>	π
Lead (diss.flit)	<0.02	2 IN1152	0.034	0.066	0.057	0.033	0.085	0.04
	µg/l		#	#	#	#	#	#
Manganese (diss filt)	<0.0/	TM152	01.2	8 80	860	160	1320	126
Manganese (diss.int)	-0.0-	1111132	31.2	0.05	000	103	1520	120
	µg/i		#	#	#	#	#	#
Nickel (diss.filt)	< 0.15	5 TM152	6.92	1.77	5.5	7.03	11	6.1
	ua/l		ш		ш			ш
	μy/i		#	#	#	#	#	#
Selenium (diss.filt)	< 0.39	9 TM152	9.06	0.781	1.67	1.92	3	13.2
	ua/l		#	#	#	#	#	#
The lives (disc filt)	-0.00		π 10.00	π 	π 10.00	π 10.00	π 	# +0.00
i nailium (diss.fiit)	<0.96	D 11V1152	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96
	µg/l							
Vanadium (diss filt)	<0.2/	TM152	1 56	1.61	1 3 3	1.56	1 57	1 33
Vanadiam (diss.mt)	-0.2-	1111132	1.50	1.01	1.00	1.50	1.07	1.00
	µg/I		#	#	#	#	#	#
Zinc (diss.filt)	< 0.41	TM152	8,79	12.6	5.59	9.92	27.4	4.62
	ua/l		ш		ш	ш		ш. ш
	μg/i		#	#	#	#	#	#
EPH Range >C10 - C40	<46 µ	g/I TM172	<46	<46	<46	<46	159	<46
(ag)			#	#	#	#	#	#
	<100 ·		<i>π</i> ~100	~100	~100	~100	150	~100
101al EPT (CO-C40) (aq)	<100 µ	IVI172	<100	<100	<100	<100	109	<100
Mercury (diss.filt)	<0.01	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
		1						
	µg/I		#	#	#	#	#	#
Sulphate	<2 ma	g/I TM184	57.4	43	79.9	61.6	75	55.2
-	Ì		#	#	#	#	#	#
Dhaanhata (adha) - BO(THEAT	#	# 7.0	#	#	#	#
Phosphate (ortho) as PO4	<0.05	IM184	0.465	7.3	1.55	0.302	0.297	0.216
	mg/l		#	#	#	#	#	#
Nitrate as NO3	<0.3 m	n/l TM184	5 18	21.5	6 4 2	4 4 2	0 942	5 64
	×0.0 fl	9/1 1101104	5.10	21.5	0.72	7.74	0.072	0.07
			#	#	#	#	#	#
pH	<1 pł	1 TM256	7.45	7.1	7.39	7.38	7.49	7.52
	Unite		ш	ш	ш	ш	ш	ш
	Unita		#	#	#	#	#	#
Silver (diss.filt)	<1.5 µ	g/l TM283	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5

CERTIFICATE OF ANALYSIS

Validated

Results Legend		Customer Sample R	BH111	DUP01			
M mCERTS accredited.							
aq Aqueous / settled sample.		Depth (m)					
tot.unfilt Total / unfiltered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)			
* Subcontracted test.	rd to	Date Sampled	01/09/2015	01/09/2015			
check the efficiency of the method.	The	Date Received	02/09/2015	02/09/2015			
results of individual compounds wi samples aren't corrected for the rec	thin covery	SDG Ref	150902-38	150902-38			
(F) Trigger breach confirmed		Lab Sample No.(s)	11995372	11995373			
1-5&+s@ Sample deviation (see appendix)		AGS Reference					
Ammoniacal Nitrogen as	<0.2 m	g/I I M099	4.74	<0.2			
N			#	#			
Ammoniacal Nitrogen as	<0.3 m	g/I TM099	6.09	<0.3			
NH4			#	#			
COD, unfiltered	<7 mg	/I TM107	43.5	<7			
			#	#			
Antimony (diss.filt)	<0.16	TM152	0.199	0.816			
	µg/l						
Arsenic (diss.filt)	<0.12	TM152	22	4.8			
. ,	µg/l		#	#			
Barium (diss.filt)	< 0.03	TM152	104	21.4			
	µg/l	-	#	#			
Bervllium (diss.filt)	< 0.07	TM152	<0.07	<0.07			
,	ua/l		#	#			
Boron (diss filt)	<9.4	1/I TM152	65 1	52 2			
	·υ μί		4	4			
Cadmium (diss filt)	<0.1	1/1 TM152	# ~0.1	# ~0.1			
Gaumum (UISS.IIII)	~∪.1 µ(jn 110110∠	\U.I	~ 0.1			
Chromium (dias fill)	-0.00	TN4450		#			
Chromium (diss.fiit)	<0.22	TM152	3.75	1.22			
	µg/i		#	#			
Cobalt (diss.filt)	<0.06	TM152	1.79	0.262			
	µg/l		#	#			
Copper (diss.filt)	<0.85	TM152	<0.85	1.13			
	µg/l		#	#			
Lead (diss.filt)	<0.02	TM152	<0.02	0.028			
	µg/l		#	#			
Manganese (diss.filt)	<0.04	TM152	2270	7.19			
ö (,	µg/l		#	#			
Nickel (diss filt)	<0.15	TM152	3 85	1.81			
	ua/l		#				
Selenium (diss filt)	<0.30	TM152	2.87	π 0.807			
Gelerium (diss.int)	-0.00 ua/l	111132	2.01	0.037			
	μy/i	TN460	#	#			
i nailium (diss.tiit)	<0.96	11/1152	<0.96	<0.96			
	μg/i	Th 4 60	1.07				
Vanadium (diss.filt)	<0.24	IM152	1.07	1.45			
	µg/l		#	#			
Zinc (diss.filt)	<0.41	TM152	6	5.01			
	µg/l		#	#			
EPH Range >C10 - C40	<46 µg	/l TM172	65.8	<46			
(aq)			#	#			
Total EPH (C6-C40) (aq)	<100 µ	g/I TM172	<100	<100			
Mercury (diss.filt)	<0.01	TM183	<0.01	<0.01			
	ua/l		#	#			
Sulphate	<2 mg	/I TM184	37.5	42.3			
capitato	- <u>-</u> mg			72.0			
Phosphate (ortho) on PO4	~0.05	TM104	<i>z</i> 0.05	# ۲ کو			
1 105pilate (01110) as PO4	~0.05 ma/l	1 111 1 04	~ 0.00	1.20			
Nitrata ao NO2	1119/1		#	#			
INITIATE AS INU3	<0.3 m	y/i 11V1184	0.94	21.9			
			#	#			
рН	<1 pH	TM256	7.32	7.14			
	Units		#	#			
Silver (diss.filt)	<1.5 µថ	g/I TM283	<1.5	<1.5			

CERTIFICATE OF ANALYSIS

Validated

SVOC MS (W) - Aqueous

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SVOC INS (W) - Aqueous	5							
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa	urd to	Sample Type Date Sampled Sampled Time	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
check the efficiency of the method.	The	Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
samples aren't corrected for the rec	covery	SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11333300	11333300	11333307	11990071	11333370	11333303
Component	LOD/Un	its Method						
1,2,4-Trichlorobenzene	<1 µç	g/l TM176	<1	<1	<1	<1	<2	<1
(aq)			#	#	#	#	#	#
1,2-Dichlorobenzene (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µç	g/l TM176	<1	<1	<1	<1	<2	<1
2,4,5-Trichlorophenol (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,4-Dichlorophenol (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1
2,4-Dimethylphenol (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1
2,4-Dinitrotoluene (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Chloronaphthalene (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Chlorophenol (aq)	<1 µç	g/l TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Methylnaphthalene (aq)	<1 µç	g/I IM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Methylphenol (aq)	<1 µç	g/I IM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
2-Nitrophonol (aq)	<1 µį	J/I IM176	<1	<1	<1 #	<1 #	<2 #	<1
3-Nitroaniline (aq)	<1 µ(1/1 TM176	<1 <1	<1 <1	<1 <1	<1 ×1	~2 #	<1 <1
4-Bromonhenvlphenvlethe	<1 µ(1/1 TM176	<1	<1	<1	<1 *1	~2 #	<1
r (aq) 4-Chloro-3-methylphenol	<1 µs	1/1 TM176	= #	= #	<1 #	<1 #		<1
(aq) 4-Chloroaniline (aq)	<1 µs	1/1 TM176	= #	= #	<1 #	<1 #		<1
4-Chlorophenvlphenvlethe	<1 µc	1/I TM176	<1	<1	<1	<1	<2	<1
r (aq) 4-Methylphenol (aq)	<1 µc	1/I TM176	- # <1	- # <1	# <1	<1 **	- # <2	
4-Nitroaniline (ag)	<1 µ0	a/I TM176	#	#	# <1	# <1	#	# <1
4-Nitrophenol (aq)	<1 µç	g/l TM176	#	#	#	#	#	#
Azobenzene (aq)	<1 µç	g/l TM176	<1	<1	<1	<1	<2	<1
Acenaphthylene (aq)	<1 µç	g/l TM176	# <1	# <1	# <1	# <1	# <2	#
Acenaphthene (aq)	<1 µç	g/l TM176	# <1	# <1	# <1	# <1	# <2	# <1
Anthracene (aq)	<1 µç	g/l TM176	# <1	# <1	# <1	# <1	# <2	# <1
bis(2-Chloroethyl)ether	<1 µç	g/l TM176	# <1	# <1	# <1	# <1	# <2	# <1
(aq) bis(2-Chloroethoxy)metha	<1 µç	g/l TM176	# <1	# <1	# <1	<1 #	# <2	# <1
ne (aq) bis(2-Ethylhexyl) phthalate	<2 µç	g/l TM176	# <2	# <2	# <2	# <2	# <4	# <2
(aq)			#	#	#	#	#	#
Butyidenzyl phthalate (aq)	<1 µç	J/I IM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

SVOC MS (W) - Aqueous

Results Legend # ISO17025 accredited.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
M mCERTS accredited.								
aq Aqueous / settled sample.		Depth (m)						
tot.unfilt Total / unfiltered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
* Subcontracted test.		Date Sampled	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015
** % recovery of the surrogate standa	rd to	Sampled Time		00:00:00				
results of individual compounds w	ithin	Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
samples aren't corrected for the re-	covery	SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
(F) Trigger breach confirmed		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Un	nits Method						
Benzo(a)anthracene (ag)	<1 uo	o/I TM176	<1	<1	<1	<1	<2	<1
	· ٣:		ш	ш	ш	ш	_ 	ш
			#	#	#	#	#	#
Benzo(b)fluoranthene (aq)	<1 µថ	g/l TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Panza/k)fluaranthana (ag)	<1 u	×/I TM176						
Benzo(k)indorantinerie (aq)	~ i hí						~2	
			#	#	#	#	#	#
Benzo(a)pyrene (aq)	<1 µc	a/I TM176	<1	<1	<1	<1	<2	<1
		- -	#	#	#	#	#	#
			π	π	π	π	π	π
Benzo(g,h,i)perylene (aq)	<1 µ(g/I IM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Carbazole (ag)	<1.00	n/I TM176	<1	<1	<1	<1	<2	<1
ourbazolo (uq)	1 1 12	,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	., "	., "	ц	., "	· -	., "
			#	#	#	#	#	#
Chrysene (aq)	<1 µថ	g/l TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Dibenzofuran (ag)	~1	n/I TM176	<i>π</i>	<i>π</i>	π 1	<i>−</i> 1	π ~?	π 1
Dibenzoiuran (aq)	ι - ι μί	yn I IVI 170	N	N	N	N	<u>^</u> 2	N
			#	#	#	#	#	#
n-Dibutyl phthalate (ag)	<1 uo	n/I TM176	<1	<1	<1	<1	<2	<1
			ш	ш	. ш	. ц		ш
			#	#	#	#	#	#
Diethyl phthalate (aq)	<1 μί	g/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Dibenzo(a b)anthracene	<1 u	n/l TM176	<u></u>		<1		-2	<u></u>
	~ i hí		N	N	N I	N	~2	~ 1
(aq)			#	#	#	#	#	#
Dimethyl phthalate (aq)	<1 µç	g/I TM176	<1	<1	<1	<1	<2	<1
		- -	#	#	#	#	#	#
	-			#		#	#	#
n-Dioctyl pritnalate (aq)	<5 µ(g/I IM176	<5	<5	<5	<5	<10	<5
			#	#	#	#	#	#
Eluoranthene (ag)	<1.00	n/I TM176	<1	<1	<1	<1	<2	<1
	1 1 12	,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	., "	., "	., "	., "	· -	., "
			#	#	#	#	#	#
Fluorene (aq)	<1 µថ	g/l TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Hexaeblerebenzene (ag)	<1 u	×/I TM176					-2	~1
Hexaciliorobelizelle (aq)	<1 µ(~2	
			#	#	#	#	#	#
Hexachlorobutadiene (ag)	<1 uc	a/I TM176	<1	<1	<1	<1	<2	<1
		- -	#	#	#	#	#	#
			#	#	#	#	#	#
Pentachlorophenol (aq)	<1 µ(g/I IM176	<1	<1	<1	<1	<2	<1
Phenol (ag)	<1.00	n/I TM176	<1	<1	<1	<1	<2	<1
Thener (uq)	1 1 12	g/1 1101170	- 1	- 1	.,	1	· <u>~</u>	-1
n-Nitroso-n-dipropylamine	<1 µថ	g/l TM176	<1	<1	<1	<1	<2	<1
(aq)			#	#	#	#	#	#
Hoveebloreethane (ag)	<1 u	×/I TM176					-2	~1
Hexacilior Detilarie (aq)	<1 µ(~2	
			#	#	#	#	#	#
Nitrobenzene (aq)	<1 µç	g/I TM176	<1	<1	<1	<1	<2	<1
	· ``		#	#	#	#	#	#
			π	π	π .4	π	π	π
Naphthalene (aq)	<1 µ(y/i IN1176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Isophorone (ag)	<1 uo	a/I TM176	<1	<1	<1	<1	<2	<1
	· ٣:		ш	ш	ш	ш	_ 	ш
			#	#	#	#	#	#
Hexachlorocyclopentadien	<1 µថ	g/I TM176	<1	<1	<1	<1	<2	<1
e (aq)								
Phenanthrene (ag)	<1.00	n/I TM176	<1	<1	<1	<1	<2	<1
(uq)	1 1 12	,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,	.,	.,	.,	· - "	.,
			#	#	#	#	#	#
Indeno(1,2,3-cd)pyrene	<1 µថ	g/I TM176	<1	<1	<1	<1	<2	<1
(aq)			#	#	#	#	#	#
	~1						" ~?	
ryielle (aq)	<1 µ(yn I IVI176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#

CERTIFICATE OF ANALYSIS

Validated

Chefit Reference.			Attention.	aly Maishall	Superseded Kept	<i>.</i>	
SVOC MS (W) - Aqueou	s						
Results Legend		Customer Sample R	BH111				
# ISO17025 accredited. M mCERTs accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tou.mfilt Tool / unfiltered sample. Subcontracted test. * % recovery of the surrogate stands check the efficiency of the method	ard to . The	Depth (m) Sample Type Date Sampled Sampled Time Date Received	Water(GW/SW) 01/09/2015 02/09/2015				
samples aren't corrected for the re (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	covery	SDG Ref Lab Sample No.(s) AGS Reference	150902-38 11995372				
Component	LOD/Un	its Method					
1,2,4-Trichlorobenzene (aq)	<1 µg	/l TM176	<1	¥			
1,2-Dichlorobenzene (aq)	<1 µg	/l TM176	<1	±			
1,3-Dichlorobenzene (aq)	<1 µg	/l TM176	<1	<i>*</i>			
1,4-Dichlorobenzene (aq)	<1 µg	/l TM176	<1				
2,4,5-Trichlorophenol (aq)	<1 µg	/l TM176	<1	¥			
2,4,6-Trichlorophenol (aq)	<1 µg	/l TM176	<1 ‡	¥			
2,4-Dichlorophenol (aq)	<1 µg	/l TM176	<1	¥			
2,4-Dimethylphenol (aq)	<1 µg	J/I TM176	<1	¥			
2,4-Dinitrotoluene (aq)	<1 µg	/l TM176	<1	¥			
2,6-Dinitrotoluene (aq)	<1 µg	/l TM176	<1 ‡	¥			
2-Chloronaphthalene (aq)	<1 µg	/l TM176	<1	ŧ			
2-Chlorophenol (aq)	<1 µg	/l TM176	<1 ‡	¥			
2-Methylnaphthalene (aq)	<1 µg	/l TM176	<1	¥			
2-Methylphenol (aq)	<1 µg	/l TM176	<1	ŧ			
2-Nitroaniline (aq)	<1 µg	/l TM176	<1	¥			
2-Nitrophenol (aq)	<1 µg	/l TM176	<1	<i>‡</i>			
3-Nitroaniline (aq)	<1 µg	J/I TM176	<1	¥			
4-Bromophenylphenylethe r (aq)	<1 µg	J/I TM176	<1	¥			
4-Chloro-3-methylphenol (aq)	<1 µg	J/I TM176	<1	¥			
4-Chloroaniline (aq)	<1 µg	J/I TM176	<1				
4-Chlorophenylphenylethe r (aq)	<1 µg	J/I TM176	<1	¥			
4-Methylphenol (aq)	<1 µg	J/I TM176	5.42	¥			
4-Nitroaniline (aq)	<1 µg	J/I TM176	<1	¥			
4-Nitrophenol (aq)	<1 µg	J/I TM176	<1				
Azobenzene (aq)	<1 µg	J/I TM176	<1	ŧ			
Acenaphthylene (aq)	<1 µg	J/I TM176	<1	¥			
Acenaphthene (aq)	<1 µg	J/I TM176	<1	¥			
Anthracene (aq)	<1 µg	/l TM176	<1	¥			
bis(2-Chloroethyl)ether (aq)	<1 µg	/l TM176	<1	<i>*</i>			
bis(2-Chloroethoxy)metha ne (aq)	<1 µg	J/I TM176	<1	¥			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg	J/I TM176	<2	¥			
Butylbenzyl phthalate (aq)	<1 µg	/l TM176	<1	¥			

CERTIFICATE OF ANALYSIS

Validated

SVOC MS (W) - Aqueous

5VUC INS (VV) - Aqueor	ls					
Results Legend ISO17025 accredited. M mCERTS accredited. aq Aqueous / sottled sample. diss.fitt Disolved / filtered sample. toLunfilt Total / unfiltered sample. " % recovery of the surrogate star check the efficiency of the meth results of individual compounds	dard to sd. The within	Customer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received	BH111 Water(GW/SW) 01/09/2015 02/09/2015			
(F) Samples aren't corrected for the (F) Trigger breach confirmed	recovery	SDG Ref Lab Sample No.(s)	11995372			
1-5&+§@ Sample deviation (see appendix)		AGS Reference				
Benzo(a)anthracene (aq)	<1 µ	g/I TM176	<1 #			
Benzo(b)fluoranthene (aq)	<1 µi	g/l TM176				
Benzo(k)fluoranthene (aq)	<1 µ	g/I TM176	<1 ====================================			
Benzo(a)pyrene (aq)	<1 µ	g/I TM176	<1 #			
Benzo(g,h,i)perylene (aq)	<1 µi	g/I TM176	<1 #			
Carbazole (aq)	<1 µ	g/l TM176	<1 #			
Chrysene (aq)	<1 µ	g/l TM176	<1 #			
Dibenzofuran (aq)	<1 µ	g/I TM176	<1			
n-Dibutyl phthalate (aq)	<1 µ	g/l TM176	<1 #			
Diethyl phthalate (aq)	<1 µ	g/I TM176	<1			
Dibenzo(a,h)anthracene (aq)	<1 µ	g/I TM176	<1 #			
Dimethyl phthalate (aq)	<1 µ	g/I TM176	<1 #			
n-Dioctyl phthalate (aq)	<5 µi	g/I TM176	<5 #			
Fluoranthene (aq)	<1 µi	g/I TM176	<1 #			
Fluorene (aq)	<1 µi	g/l TM176	<1			
Hexachlorobenzene (aq)	<1 µ	g/l TM176	<1			
Hexachlorobutadiene (aq)	<1 µi	g/I TM176	<1			
Pentachlorophenol (aq)	<1 µı	g/l TM176	<1			
Phenol (aq)	<1 µ	g/I TM176	<1			
n-Nitroso-n-dipropylamine (aq)	<1 µ	g/I TM176	<1 #			
Hexachloroethane (aq)	<1 µi	g/I TM176	<1			
Nitrobenzene (aq)	<1 µi	g/I TM176	<1			
Naphthalene (aq)	<1 µi	g/l TM176	<1 #			
Isophorone (aq)	<1 µ	g/l TM176	<1			
Hexachlorocyclopentadien e (aq)	<1 µ	g/i TM176	<1			
Phenanthrene (aq)	<1 µ	g/I TM176	<1 #			
Indeno(1,2,3-cd)pyrene (aq)	<1 µ	g/I TM176	<1			
Pyrene (aq)	<1 µ	g/l TM176	<1 #			

CERTIFICATE OF ANALYSIS

Validated

TPH CWG (W)

Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa	rd to	Sample Type Date Sampled Sampled Time	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015 00:00:00	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
check the efficiency of the method. results of individual compounds wi	The thin	Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
samples aren't corrected for the red (F) Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
1-5&+§@ Sample deviation (see appendix)	LOD/Un	AGS Reference						
Methyl tertiary butyl ether	<3 µç	10 Inclined	<3	<3	<3	<3	<3	<3
(MTBE)			#	#	#	#	#	#
Benzene	<7 µç	g/I TM245	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Thuthan	<4 µç	J/I TM245	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
	<5 µg	// TM245	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
п,р-хуіепе	~ο μί	J/I 1101245	<o #</o 	<o #</o 	~o #	~o #	~o #	<o #</o
o-Xylene	<3 µç	g/l TM245	<3 #	<3 #	<3	<3 #	<3 #	<3
Sum of detected BTEX	<28 µ	g/I TM245	<28	<28	<28	<28	<28	<28
Aliphatics >C12-C16 (aq)	<10 µ	g/l TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µ	g/l TM174	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µ	g/l TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µ	g/l TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µ	g/I TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µ	g/I IM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µ	g/I IM174	<10	<10	<10	<10	<10	<10
>EC12-EC35 (aq)	<10 µ	g/I IM174	<10	<10	<10	<10	<10	<10
Aromatics >C5-35 (aq)	<10 µ	g/I 110174	<10	<10	<10	<10	<10	<10
GRO >C5-C10	<10 µ	g/I IM245	<10	<10	<10	<10	<10	<10
ЕРН (С6-С10)	<100 µ	ig/i 1M245	<100	<100	<100	<100	<100	<100

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CERTIFICATE OF ANALYSIS

Validated

TPH CWG (W)				- -			
Results Legend		Customer Sample R	BH111	DUP01			
# ISO17025 accredited. M mCERTS accredited.							
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)		· .			
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015			
** % recovery of the surrogate standa check the efficiency of the method.	rd to The	Sampled Time					
results of individual compounds wi samples aren't corrected for the rec	thin coverv	SDG Ref	150902-38	150902-38			
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s)	11995372	11995373			
Component	LOD/Unit	ts Method					
Methyl tertiary butyl ether (MTBE)	<3 µg/	/I TM245	<3	<3	#		
Benzene	<7 µg/	/I TM245	<7 #	<7	#		
Toluene	<4 µg/	/I TM245	<4 #	<4	#		
Ethylbenzene	<5 µg/	/I TM245	<5 #	<5	#		
m,p-Xylene	<8 µg/	/I TM245	<8 #	<8	#		
o-Xylene	<3 µg/	/I TM245	<3 #	<3	#		
Sum of detected BTEX	<28 µg	g/l TM245	<28	<28			
Aliphatics >C12-C16 (aq)	<10 µg	g/l TM174	<10	<10			
Aliphatics >C16-C21 (aq)	<10 µg	g/l TM174	<10	<10			
Aliphatics >C21-C35 (aq)	<10 µg	g/l TM174	<10	<10			
Total Aliphatics >C12-C35 (aq)	<10 µg	g/l TM174	<10	<10			
Aromatics >EC12-EC16 (aq)	<10 µg	g/l TM174	<10	<10			
Aromatics >EC16-EC21 (aq)	<10 µg	g/l TM174	<10	<10			
Aromatics >EC21-EC35 (aq)	<10 µg	g/l TM174	<10	<10		 	
Total Aromatics >EC12-EC35 (aq)	<10 µg	g/l TM174	<10	<10			
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg	g/l TM174	<10	<10			
GRO >C5-C10	<10 µg	g/I TM245	<10	<10			
EPH (C6-C10)	<100 µį	g/I TM245	<100	<100			

CERTIFICATE OF ANALYSIS

Validated

VOC MS (W)								
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
check the efficiency of the surlogate stand check the efficiency of the method results of individual compounds w samples aren't corrected for the r	d. The vithin	Date Received SDG Ref	02/09/2015 150902-38	02/09/2015 150902-38	02/09/2015 150902-38	02/09/2015 150902-38	02/09/2015 150902-38	02/09/2015 150902-38
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	scovery	Lab Sample No.(s) AGS Reference	11995368	11995366	11995367	11995371	11995370	11995369
Component Dibromofluoromethane**	LOD/Ur %	TM208	88.6	92.5	89.5	88.4	88.2	87.9
	0/	TMOOR	1	1	1	1	1	1
	70	TWIZUO	1	02.0	1	1	02.2	1
4-Bromofluorobenzene**	%	TM208	81.4 1	79.4 1	80.6 1	77.1 1	79.5 1	81 1
Dichlorodifluoromethane	<1 µ(g/I TM208	<1	<1	<1	<1	<1	<1
Chloromethane	<1 µ(g/l TM208	<1 1 #					
Vinyl chloride	<1 µ(g/l TM208	<1 1 #					
Bromomethane	<1 µ(g/I TM208	<1 1 #					
Chloroethane	<1 µ(g/I TM208	<1 1 #					
Trichlorofluoromethane	<1 µ	g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1-Dichloroethene	<1 µ(g/l TM208	<1	<1	<1 1 #	<1 1 #	<1 1#	<1
Carbon disulphide	<1 µ	g/I TM208	<1	<1	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Dichloromethane	<3 µ(g/I TM208	<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
trans-1,2-Dichloroethene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1-Dichloroethane	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
cis-1,2-Dichloroethene	<1 µç	g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 <1 1 #	<1 1 #
2,2-Dichloropropane	<1 µç	g/I TM208	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µ	g/l TM208	<1	<1 1 #	<1 1 #	<1	<1	<1 <1 1 #
Chloroform	<1 µ	g/I TM208	<1 1 #	1.57	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,1,1-Trichloroethane	<1 µ	g/I TM208	<1	<1	<1	<1 1 #	<1 1 #	<1
1,1-Dichloropropene	<1 µ	g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Carbontetrachloride	<1 µç	g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2-Dichloroethane	<1 µ(g/I TM208	<1	<1	<1	<1	<1	<1
Benzene	<1 µ(g/l TM208	<1	<1	<1	<1	<1 1 #	<1
Trichloroethene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1
1,2-Dichloropropane	<1 µ(g/l TM208	<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µ(g/l TM208	<1 1 #	<1	<1	<1 1 #	<1 1 #	<1
Bromodichloromethane	<1 µ(g/l TM208	<1 1 #	<1 <1 1 #	<1 <1 1 #	<1 1 #	<1 1 #	<1
cis-1,3-Dichloropropene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1	<1 1 #
Toluene	<1 µ	g/l TM208	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µ(g/l TM208	<1 <1 1 #	<1 <1 1 #	<1 <1 1 #	<1 <1 1 #	<1 1 #	<1
1,1,2-Trichloroethane	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1#

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (W)

Results Legend		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
* ISO 7/22 a dctredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fit Dissolved / fittered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate stande	ard to	Depth (m) Sample Type Date Sampled Sampled Time	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015 00:00:00	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
check the efficiency of the method. results of individual compounds with	. The ithin	Date Received	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
(F) Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Ur	its Method						
1,3-Dichloropropane	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Tetrachloroethene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Dibromochloromethane	<1 µ(g/l TM208	<1 1 #	<1 1#	<1 1#	<1 1#	<1 1 #	<1 1#
1,2-Dibromoethane	<1 µ	g/I TM208	<1 1#	<1 1#	<1 1#	<1	<1 1 #	<1
Chlorobenzene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 <1 1 #	<1
1,1,1,2-Tetrachloroethane	<1 µ(g/I TM208	<1 1 #	<1	<1 1 #	<1	<1 1 #	<1
Ethylbenzene	<1 µ(g/I TM208	<1 1 #	<1	<1	<1 1 #	<1 1 #	<1
m,p-Xylene	<1 µ	g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
o-Xylene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Styrene	<1 µ(g/I TM208	<1 1 #	<1	<1	<1 1 #	<1 1 #	<1
Bromoform	<1 µ(g/I TM208	<1 1 #	<1	<1 1 #	<1 1 #	<1 <1 1 #	<1
Isopropylbenzene	<1 µ(g/I TM208	<1 1 #	<1	<1 1 #	<1 1 #	<1 <1 1 #	<1
1,1,2,2-Tetrachloroethane	<1 µ(g/I TM208	<1	<1 1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µ(g/I TM208	<1	<1 <1 1 #	<1 1 #	<1	<1 1 #	<1
Bromobenzene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Propylbenzene	<1 µ	g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
2-Chlorotoluene	<1 µ	g/l TM208	<1 1 #	<1 1#	<1 1#	<1 1#	<1 1 #	<1
1,3,5-Trimethylbenzene	<1 µ	g/l TM208	<1	<1	<1 1#	<1 1#	<1 1 #	<1
4-Chlorotoluene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1#	<1 1 #	<1 1 #
tert-Butylbenzene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1#	<1 1#	<1 1 #	<1 1#
1,2,4-Trimethylbenzene	<1 µ	g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
sec-Butylbenzene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
4-iso-Propyltoluene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,3-Dichlorobenzene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,4-Dichlorobenzene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
n-Butylbenzene	<1 µ(g/I TM208	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #	<1 1 #
1,2-Dichlorobenzene	<1 µ(g/I TM208	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloroprop ane	<1 µ(g/l TM208	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µ(g/l TM208	<1 1 #	<1	<1	<1	<1 1 #	<1
Hexachlorobutadiene	<1 µ(g/l TM208	<1 1 #	<1	<1	<1	<1 1 #	<1
tert-Amyl methyl ether (TAME)	<1 µ(g/I TM208	<1 1 #	<1	<1 1 #	<1 1 #	<1 1 #	<1 1 #
Naphthalene	<1 µ(g/l TM208	<1 1 #	<1 1 #	<1 1#	<1 1 #	<1 1 #	<1 1 #

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (W)

Results Legend		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
# ISO17025 accredited. M mCERTS accredited.								
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	· · · ·	· · · · ·	· · · ·	· · · · ·		· · · · ·
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
** % recovery of the surrogate standa	rd to The	Sampled Time		00:00:00				
results of individual compounds wi	ithin	Date Received SDG Ref	150902-38	150902-38	150902-38	150902-38	150902-38	150902-38
(F) Trigger breach confirmed		Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
Component	LOD/Unit	AGS Reference						
1,2,3-Trichlorobenzene	<1 µg/	1 TM208	<1	<1	<1	<1	<1	<1
			1 #	1 #	1#	1#	1 #	1 #
1,3,5-Trichlorobenzene	<1 µg/	'I TM208	<1	<1	<1	<1	<1	<1
			1	1	1	1	1	1
		_						

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DUP01

. Water(GW/SW) 01/09/2015

VOC I	VIS (W)					
	Results Legend		Cu	stomer Sample R	BH111	
#	ISO17025 accredited.					
М	mCERTS accredited.					
aq	Aqueous / settled sample.			Depth (m)		
diss.filt	Dissolved / filtered sample.			Sample Type	Water(GW/SW	n
tot.untiit	I otal / unfiltered sample.			Data Sampled	01/00/2015)
**	% recovery of the surrogate standa	rd to		Sampled Time	01/03/2013	
	check the efficiency of the method.	The		Data Dessived	02/00/2015	
	results of individual compounds w	ithin		Date Received	150002.20	
	samples aren't corrected for the re-	covery		SDG Ref	150902-36	
(F)	Trigger breach confirmed		L	ab Sample No.(s)	11995372	
1-5&+§@	Sample deviation (see appendix)			AGS Reference		
Compo	nent	LOD/Ur	nits	Method		
Dibror	nofluoromethane**	%		TM208	91.7	
						1
Toluer	ne-d8**	%		TM208	80.4	
						1
4-Bror	nofluorobenzene**	%		TM208	77.9	
						1
Dichlo	rodifluoromethane	<1.0	n/l	TM208	<1	

(F)	check the efficiency of the method. results of individual compounds wit samples aren't corrected for the rec Trigger breach confirmed	The thin covery	Date Received SDG Ref Lab Sample No.(s)	02/09/2015 150902-38 11995372	02/09/2015 150902-38 11995373	5		
1-5&+§@	Sample deviation (see appendix)	LOD/Unit	AGS Reference					
Dibror	nofluoromethane**	20D/01118	TM208	91.7	90.5			
				1		1		
Toluer	ne-d8**	%	TM208	80.4 1	80.1	1		
4-Bror	nofluorobenzene**	%	TM208	77.9 1	78	1		
Dichlo	rodifluoromethane	<1 µg/l	TM208	<1 1	<1	1		
Chloro	omethane	<1 µg/l	TM208	<1 1 #	<1	1 #		
Vinyl c	chloride	<1 µg/l	TM208	<1 1 #	<1	1 #		
Bromo	omethane	<1 µg/l	TM208	<1 1 #	<1	1 #		
Chloro	bethane	<1 µg/l	TM208	<1 1 #	<1	1 #		
Trichlo	profluoromethane	<1 µg/l	TM208	<1 1 #	<1	1 #		
1,1-Di	chloroethene	<1 µg/l	TM208	<1 1 #	<1	1 #		
Carbo	n disulphide	<1 µg/l	TM208	<1 1 #	<1	1 #		
Dichlo	romethane	<3 µg/l	TM208	<3 1 #	<3	1 #		
Methy (MTBE	I tertiary butyl ether E)	<1 µg/l	TM208	<1 1 #	<1	1 #		
trans-	1,2-Dichloroethene	<1 µg/l	TM208	<1 1 #	<1	1 #		
1,1-Di		<1 µg/l	TM208	<1 1 #	<1	1 #		
CIS-1,2		<1 µg/l	TM208	<1	<1	1 #		
2,2-DI		<1 µg/i	TM208	<1	<1	1		
	forme	<1 µg/1	TM200	1#	< 14	1 #		
	norm Tricklassethese	<1 µg/i	TM208	<1 1#	1.41	1 #		
1,1,1-		<1 µg/i	TM208	<1 1#	<	1 #		
1,1-Di	ntotraphlorida	<1 µg/i	TM208	<1 1#	<1	1 #		
		<1 µg/l	TM200	1#	~1	1 #		
1,2-DI		<1 µg/l	TM200	1	<1	1		
Trichle	proethene		TM200	1#	<1	1 #		
	chloropropapa	<1 µg/l	TM200	1#	<1	1 #		
Dibror	nomethane		TM200	1#	<1	1 #		
Dibioi	nomethana	<1 µg/l	TM200	1#	~1	1 #		
		<1 µg/l	TM200	> 1 1 #	~1	1#		
Toluer		<1 µg/l	TM208	> 1 1 #	~1	1 #		
trance	13 Dichloropropopo		TM200	1#	~1	1 #		
110	Trichloroethape	<1 µg/l	TM200	<pre> 1# </pre>	~1	1 #		
1,1,∠-		~ i µg/i	111/200	<u></u> ∼। 1#	~1	1 #		

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VOC MS (W)

Results Legend		Customer Sample R	BH111	DUP01			
M mCERTS accredited. aq Aqueous / settled sample.		Donth (m)					
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Water(GW/SW)	Water(GW/SW	/)		
* Subcontracted test. ** % recovery of the surrogate standa	ard to	Date Sampled Sampled Time	01/09/2015	01/09/2015			
check the efficiency of the method results of individual compounds w	. The ithin	Date Received	02/09/2015 150902-38	02/09/2015 150902-38			
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	11995372	11995373			
1-5&+§@ Sample deviation (see appendix)	LOD/Ur	AGS Reference					
1,3-Dichloropropane	<1 µ(g/I TM208	<1	<1	4.44		
Tetrachloroethene	<1 µ(g/I TM208	<1	<1	1#		
Dibromochloromethane	<1 µ(g/I TM208	<1	<1	1#		
1,2-Dibromoethane	<1 µ(g/I TM208	<1	<1	1#		
Chlorobenzene	<1 µ(g/I TM208	<1	<1	1#		
1,1,1,2-Tetrachloroethane	<1 µ	g/I TM208	1 # <1	<1	1#		
Ethylbenzene	<1 µ(g/I TM208	<1	<1	1#		
m,p-Xylene	<1 µ(g/I TM208	<1	<1	1#		
o-Xylene	<1 µ	g/I TM208	1 # <1	<1	1#		
Styrene	<1 µ	g/I TM208	<1	<1	1#		
Bromoform	<1 µ(g/I TM208	1 # <1	<1	1#		
Isopropylbenzene	<1 µ(g/I TM208	1 # <1	<1	1#		
1,1,2,2-Tetrachloroethane	<1 µ(g/I TM208	1 # <1	<1	1#		
1,2,3-Trichloropropane	<1 µ	g/I TM208	<1	<1	1		
Bromobenzene	<1 µ(g/I TM208	<1	<1	1#		
Propylbenzene	<1 µ(g/l TM208	<1	<1	1#		
2-Chlorotoluene	<1 µ	g/l TM208	<1	<1	1#		
1,3,5-Trimethylbenzene	<1 µ	g/l TM208	<1	<1	1#		
4-Chlorotoluene	<1 µ	g/l TM208	<1	<1	1#		
tert-Butylbenzene	<1 µ	g/l TM208	<1	<1	1#		
1,2,4-Trimethylbenzene	<1 µ(g/l TM208	<1	<1	1#		
sec-Butylbenzene	<1 µ	g/I TM208	<1 1 #	<1	1 #		
4-iso-Propyltoluene	<1 µ	g/I TM208	<1 1 #	<1	1#		
1,3-Dichlorobenzene	<1 µ(g/l TM208	<1 1 #	<1	1#		
1,4-Dichlorobenzene	<1 µ(g/l TM208	<1 1#	<1	1#		
n-Butylbenzene	<1 µ(g/l TM208	<1 1 #	<1	1#		
1,2-Dichlorobenzene	<1 µ(g/l TM208	<1	<1	1		
1,2-Dibromo-3-chloroprop ane	<1 µ(g/l TM208	<1	<1	1		
1,2,4-Trichlorobenzene	<1 µ(g/l TM208	<1	<1	1#		
Hexachlorobutadiene	<1 µ(g/l TM208	<1	<1	1#		
tert-Amyl methyl ether (TAME)	<1 µ(g/l TM208	<1	<1	1#		
Naphthalene	<1 µ(g/I TM208	<1	<1	1 #		

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VOC MS (W)

# M	Results Legend ISO17025 accredited. mCERTS accredited. Auueous / settled semple		Customer Sample R	BH111	DUP01	T		
algoright of the surrogate standard to check the efficiency of the method. The received sample.			Depth (m) Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015			
		Sampled Time Date Received	02/09/2015	02/09/2015				
(F)	samples aren't corrected for the rec Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	150902-38 11995372	150902-38 11995373			
1-5&+§@ Compo	Sample deviation (see appendix)	LOD/Un	AGS Reference its Method					
1,2,3-1	richlorobenzene	<1 µç	/I TM208	<1	<1	#		
1,3,5-1	richlorobenzene	<1 µç	/l TM208	<1	<1	1		
						\downarrow		
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 SDG:
 150902-38
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329713

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM283		Determination of Dissolved Niobium, Tungsten, and Zirconium in Water Matrices by ICP-MS		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

SDG:

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150902-38 Location: Stag Brewery Order Number: H_URS_WIM-273 Customer: AEČOM 329713 Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Test Completion Dates

Lab Sample No(s)	11995368	11995366	11995367	11995371	11995370	11995369	11995372	11995373
Customer Sample Ref.	BH3	BH4	BH5	BH8	BH109	BH110	BH111	DUP01
AGS Ref.								
Depth								
Туре	LIQUID							
Ammoniacal Nitrogen	08-Sep-2015	08-Sep-2015	07-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Anions by Kone (w)	09-Sep-2015							
COD Unfiltered	05-Sep-2015							
Dissolved Metals by ICP-MS	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	08-Sep-2015	09-Sep-2015	09-Sep-2015
Dissolved W, Nb and Zr by ICP-MS	08-Sep-2015							
EPH (DRO) (C10-C40) Aqueous (W)	10-Sep-2015							
EPH CWG (Aliphatic) Aqueous GC (W)	14-Sep-2015							
EPH CWG (Aromatic) Aqueous GC (W)	14-Sep-2015							
GRO by GC-FID (W)	04-Sep-2015	08-Sep-2015						
Mercury Dissolved	07-Sep-2015							
Nitrite by Kone (w)	06-Sep-2015							
pH Value	10-Sep-2015							
SVOC MS (W) - Aqueous	08-Sep-2015							
Total EPH (aq)	11-Sep-2015							
TPH CWG (W)	14-Sep-2015							
VOC MS (W)	04-Sep-2015	04-Sep-2015	04-Sep-2015	03-Sep-2015	04-Sep-2015	04-Sep-2015	03-Sep-2015	03-Sep-2015

150902-38

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

ASSOCIATED AQC DATA

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 33 Superseded Report:

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329713

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Ammoniacal Nitrogen

Client Reference:

(

SDG:

Job:

Component	Method Code	QC 1224	QC 1233	QC 1270
Ammoniacal Nitrogen as	TM099	96.0	102.8	102.0
N		91.84 : 108.16	91.84 : 108.16	91.84 : 108.16

Anions by Kone (w)

Component Method Co		QC 1236	QC 1219
Chloride	TM184		
		94.64 : 106.82	94.23 : 107.50
Phosphate (Ortho as PO4)	TM184		105.6
		96.40 : 108.40	96.41 : 109.80
Sulphate (soluble)	TM184	99.6	
		96.47 : 104.74	94.38 : 108.93
TON as NO3	TM184	102.5	
		93.05 : 112.12	93.93 : 110.49

COD Unfiltered

Component	Method Code	QC 1264	QC 1268	QC 1273
COD	TM107	100.57 95.90 : 102.57	100.19 95.90 : 102.57	99.43 95.90 : 102.57

Dissolved Metals by ICP-MS

Component	Method Code	QC 1270	QC 1278
Aluminium	TM152	106.13 88.58 : 117.87	104.93 88.58 : 117.87
Antimony	TM152	101.73 87.01 : 109.33	101.73 87.01 : 109.33
Arsenic	TM152	102.4 89.45 : 113.51	98.67 89.45 : 113.51
Barium	TM152	102.4 90.47 : 113.85	102.67 90.47 : 113.85
Beryllium	TM152	96.27 84.68 : 120.26	105.6 84.68 : 120.26
Boron	TM152	95.6 82.95 : 121.47	100.13 82.95 : 121.47
Cadmium	TM152	101.47 90.40 : 113.29	103.6 90.40 : 113.29
Chromium	TM152	100.13 90.01 : 114.05	102.53 90.01 : 114.05
Cobalt	TM152	100.67 87.14 : 117.85	100.93 87.14 : 117.85
Copper	TM152	100.67 88.43 : 114.27	103.6 88.43 : 114.27
Lead	TM152	95.33 89.53 : 109.90	96.0 89.53 : 109.90

CERTIFICATE OF ANALYSIS

Stag Brewery

Gary Marshall

AEČOM

Location:

Customer:

Attention:

 SDG:
 150902-38

 Job:
 H_URS_WIM-273

 Client Reference:

Dissolved Metals by ICP-MS

Order Number: Report Number: Superseded Report:

329713

		QC 1270	QC 1278
Lithium	TM152	97.07 84.32 : 123.11	105.33 84.32 : 123.11
Manganese	TM152	99.87 91.43 : 113.17	103.2 91.43 : 113.17
Molybdenum	TM152	102.13 80.73 : 113.85	101.2 80.73 : 113.85
Nickel	TM152	100.0 87.68 : 113.94	100.53 87.68 : 113.94
Phosphorus	TM152	106.67 86.68 : 118.34	100.8 86.68 : 118.34
Selenium	TM152	101.33 91.03 : 113.34	100.93 91.03 : 113.34
Strontium	TM152	101.07 90.44 : 114.09	102.13 90.44 : 114.09
Tellurium	TM152	104.53 80.93 : 116.91	102.53 80.93 : 116.91
Thallium	TM152	96.13 90.27 : 111.31	96.4 90.27 : 111.31
Tin	TM152	100.27 83.07 : 112.37	100.53 83.07 : 112.37
Titanium	TM152	102.53 92.65 : 111.58	101.87 92.65 : 111.58
Uranium	TM152	92.13 88.60 : 110.35	97.33 88.60 : 110.35
Vanadium	TM152	100.4 88.43 : 116.60	103.07 88.43 : 116.60
Zinc	TM152	99.87 89.84 : 113.06	105.33 89.84 : 113.06

Dissolved W, Nb and Zr by ICP-MS

Component	Method Code	QC 1290
Bismuth	TM283	92.13 66.55 : 123.56
Niobium	TM283	107.6 85.00 : 115.00
Silver	TM283	105.33 81.37 : 112.35
Tungsten	TM283	85.87 85.00 : 115.00
Zirconium	TM283	102.27 85.00 : 115.00

EPH (DRO) (C10-C40) Aqueous (W)

Component	Method Code	QC 1208	QC 1212
EPH (DRO) (C10-C40)	TM172	96.5 59.22 : 112.78	77.0 59.47 : 106.15

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EPH CWG (Aliphatic) Aqueous GC (W)

Component	Method Code	QC 1219
Total Aliphatics >C12-C35	TM174	79.17 66.67 : 110.42

EPH CWG (Aromatic) Aqueous GC (W)

Component	Method Code	QC 1220
Total Aromatics >EC12-EC35	TM174	88.67 63.00 : 121.00

GRO by GC-FID (W)

Component	Method Code	QC 1199	QC 1175	QC 1286
Benzene by GC	TM245	95.5 76.72 : 118.62	104.5 79.00 : 121.00	90.0 77.50 : 122.50
Ethylbenzene by GC	TM245	90.0 74.74 : 116.76	104.0 79.00 : 121.00	87.5 77.50 : 122.50
m & p Xylene by GC	TM245	89.75 73.06 : 114.58	103.5 79.00 : 121.00	87.75 77.50 : 122.50
MTBE GC-FID	TM245	98.5 80.00 : 121.03	108.0 79.00 : 121.00	92.0 77.50 : 122.50
o Xylene by GC	TM245	90.0 70.00 : 130.00	103.0 79.00 : 121.00	87.5 77.50 : 122.50
QC	TM245	101.89 70.00 : 130.00	104.28 79.00 : 121.00	102.19 74.88 : 125.54
Toluene by GC	TM245	92.0 79.35 : 119.27	105.0 79.00 : 121.00	88.5 77.50 : 122.50

Mercury Dissolved

Component	Method Code	QC 1262	QC 1200
Mercury Dissolved	TM183	98.5	95.5
(CVAF)		73.51 : 120.83	73.51 : 120.83

pH Value

Component	Method Code	QC 1201	QC 1215
рН	TM256	101.08 99.20 : 102.85	100.54 99.37 : 102.65

CERTIFICATE OF ANALYSIS

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SDG:	150902-38	Location:	Stag Brewery	Order Numbe
Job:	H_URS_WIM-273	Customer:	AECOM	Report Numb
Client Referer	ice:	Attention:	Gary Marshall	Superseded

Number: t Number: 329713 seded Report:

SVOC MS (W) - Aqueous

Component	Method Code	QC 1208	QC 1247
4-Bromophenylphenyleth er	TM176	87.2 55.04 : 128.00	82.4 65.62 : 120.95
Benzo(a)anthracene	TM176	87.2 52.64 : 123.68	82.4 62.83 : 114.26
Benzo(a)pyrene	TM176	79.68 49.60 : 114.40	80.8 54.19 : 105.67
Butylbenzyl phthalate	TM176	93.6 49.04 : 127.76	82.4 45.10 : 118.90
Hexachlorobutadiene	TM176	77.52 42.80 : 108.20	61.28 43.12 : 110.32
Naphthalene	TM176	92.0 47.20 : 116.80	85.6 69.48 : 118.94
Nitrobenzene	TM176	88.8 58.70 : 110.90	79.52 69.13 : 107.62
Phenol	TM176	50.08 30.25 : 79.75	49.12 30.92 : 74.19

VOC MS (W)

Component	Method Code	QC 1188	QC 1162
1,1,1,2-Tetrachloroethan e	TM208	91.0 84.25 : 114.84	94.5 87.29 : 112.22
1,1,1-Trichloroethane	TM208	90.0 84.67 : 111.97	91.5 83.02 : 113.68
1,1-Dichloroethane	TM208	93.5 80.19 : 121.45	95.0 77.85 : 123.56
1,2-Dichloroethane	TM208	94.0 77.68 : 127.05	96.5 80.96 : 124.37
2-Chlorotoluene	TM208	91.0 85.81 : 116.77	96.5 84.42 : 112.35
4-Chlorotoluene	TM208	92.0 87.22 : 115.45	96.5 88.70 : 113.67
Benzene	TM208	91.0 82.30 : 120.49	95.0 85.85 : 118.22
Bromomethane	TM208	101.0 76.16 : 123.35	103.0 78.68 : 126.84
Carbontetrachloride	TM208	93.0 83.96 : 117.98	93.5 82.06 : 117.49
Chlorobenzene	TM208	93.0 85.75 : 114.88	97.5 77.50 : 122.50
Chloroform	TM208	95.0 84.84 : 119.97	100.0 77.50 : 122.50
Chloromethane	TM208	117.5 53.63 : 141.38	113.0 64.99 : 145.80
Cis-1,2-Dichloroethene	TM208	104.0 81.65 : 120.44	108.0 82.70 : 120.11
Dichloromethane	TM208	94.0 79.31 : 122.56	99.5 80.45 : 125.21
Ethylbenzene	TM208	89.5 80.74 : 110.74	90.0 81.00 : 111.00
Hexachlorobutadiene	TM208	98.5 68.91 : 121.59	99.0 79.39 : 111.07
o-Xylene	TM208	91.0 85.43 : 113.21	95.0 84.32 : 113.42

CERTIFICATE OF ANALYSIS

		CER	
SDG:	150902-38	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall
VOC MS (W)			

Order Number: Report Number: 329 Superseded Report:

329713

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		QC 1188	QC 1162
p/m-Xylene	TM208	89.25 80.94 : 113.51	92.75 82.25 : 112.25
Tert-butyl methyl ether	TM208	98.0 59.77 : 129.51	93.0 76.57 : 125.98
Tetrachloroethene	TM208	91.0 83.21 : 115.40	93.5 84.88 : 110.14
Toluene	TM208	90.0 86.02 : 114.04	93.0 85.71 : 113.18
Trichloroethene	TM208	91.0 83.50 : 113.50	94.0 87.32 : 112.88
Vinyl Chloride	TM208	92.5 63.71 : 124.88	88.0 67.57 : 130.24

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.





































14:19:25 14/09/2015




























SDG:	150902-38	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

329713

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	ATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	BNDOVERBND	GCFID
EPH (OLEANED UP)	D&C	HEXANEACETONE	BNDOVERBND	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	BNDOVERBND	GCFID
POB TOT / POB CON	D&C	HEXANEACETONE	ENDOVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	(CCEZ
	WET		SONCATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by R	TCE	LIQUID'LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Containing Material, Asbestos removed 'Screening of during the soils Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) method of transmitted/polarised in-house light microscopy and central stor dispersion staining, based on HSG 248 (2005)

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Orodolte	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Tremolile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329713	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	WhiteAsbestos
Amoste	BrownAsbestos
Orodolite	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150903-66

Stag Brewery 329161

We received 6 samples on Thursday September 03, 2015 and 6 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

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CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150903-66
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329161

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12003516	BH2			02/09/2015
12003511	BH7			01/09/2015
12003512	BH9			02/09/2015
12003513	BH10			01/09/2015
12003515	BH201A			02/09/2015
12003514	BH104B			02/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

				CE	R	TIF	=10	CA.	TE		F/	٩N	AL	YS	SIS	;												<u> </u>									
SDG: Job: Client Reference:	150903-66 H_URS_WI	IM-273	Locatio Custor Attenti	on: ner: on:	:	Sta AE Ga	ig B CO ry N	rew M ⁄lars	ery ha	' 								Or Re Su	der por	Num t Nu sede	nbe mb ed F	r: er: Rep	ort:	:	32	:916 ⁻	1										
LIQUID Results Legend X Test		Lab Sa	mple No(s)						12003516				12003511				21.050.071	100000				12003513					10003515			12003514							
No Determination Possible		Customer Sample Reference			Customer Sample Reference				Customer Sample Reference							BH2				BH7					PLO				BH10					RH201A			BH104B
		AGS I	Reference																																		
		De	pth (m)																																		
		Co	ntainer	oror Broce some frie	0.51 glass bottle (ALE21	500ml Plastic (ALE2	Dissolved Metals Pi	HNO3 Filtered (ALE	Vial (ALE297)	250ml BOD (ALE21	500ml Plastic (ALE2	HNU3 Hitered (ALE H2SO4 (ALE244)	Vial (ALE297)	250ml BOD (ALE21	500ml Plastic (ALE2	H2SO4 (ALE244)	HNO3 Filtered (ALE	0.5I glass bottle (AL	250ml Plastic (ALE2	Dissolved Metals Pi	HNO3 Filtered (ALE	Vial (ALE297)	0.51 glass hottle (ALE21	500ml Plastic (ALE2	Dissolved Metals Pi	HNO3 Filtered (ALE	0.5l glass bottle (AL	250ml BOD (ALE21	Dissolved Metals P	H2SO4 (ALE244)							
Ammoniacal Nitrogen		All	NDPs: Tests: () }			- - -	(x				, X				, ,	(, , ,	<				x							
Anions by Kone (w)	······	All	NDPs: Tests: 6) ;		x					x				x				X					x				;	×								
COD Unfiltered		All	NDPs: Tests: 6) }	X					X				X					X				X	2				×		_							
Dissolved Metals by ICP-MS	S .	All	NDPs: Tests: 6) ;				x									x				X					×				_							
Dissolved W, Nb and Zr by I	ICP-MS	All	NDPs: Tests: 6) ;				X					<u> </u>				X				X					×			-								
EPH (DRO) (C10-C40) Aqua (W)	eous	All	NDPs: Tests: () }	x					×				x				X					x				×										
GRO by GC-FID (W)		All	NDPs: (Tests: () }					x				x) 	Contraction 1 and 1 a				x				2	x										
Mercury Dissolved		All	NDPs: Tests: () ;			x				x				2	×				x					×				×								
pH Value		All	NDPs: Tests: () }		x					x				x				x					x				,	×								
SVOC MS (W) - Aqueous		All	NDPs: Tests: 6) ;	x					x				x				x					x				x										
Total EPH (aq)		All	NDPs: Tests: 6) 5	x					×				x				x					x				x										
VOC MS (W)		All	NDPs: Tests: 6) ;					x				x)	Contraction of the second s				x					x										

CERTIFICATE OF ANALYSIS								
SDG: Job: Client Reference:	150903-66 H_URS_WIM	1-273	Location: Customer Attention:	S : A (itag Brewery C ECOM F Gary Marshall S	Drder Number: Report Number: Superseded Report:	329161	
LIQUID Results Legend		Lab Sample N	lo(s)	12003514				
No Determination Possible	on	Customer Sample Refere	ence	BH104B				
	AGS Refere							
		Depth (m)						
		Container		Vial (ALE297) HNO3 Filtered (ALE				
Dissolved Metals by ICP-MS	S AI	I	NDPs: 0 Tests: 6	x				
Dissolved W, Nb and Zr by I	CP-MS AI	I	NDPs: 0 Tests: 6	x				
GRO by GC-FID (W)	AI	I	NDPs: 0 Tests: 6	X				
VOC MS (W)	AI	I	NDPs: 0 Tests: 6	x				

CERTIFICATE OF ANALYSIS

SDG:	150903-66	Location:	Stag Brewery	Order Number:	329161
Job:	H URS WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Results Legend		Custo	omer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
M mCERTS accredited.									
aq Aqueous / settled sample.			Depth (m)						
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
* Subcontracted test.			Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
** % recovery of the surrogate stan	dard to	:	Sampled Time						
check the efficiency of the metho results of individual compounds	d. The within	1	Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
samples aren't corrected for the	recovery		SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
(F) Trigger breach confirmed		Lab	Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
1-5&+§@ Sample deviation (see appendix)		A	AGS Reference						
Component	LOD/Ur	nits	Method						
Ammoniacal Nitrogen as	<0.2 n	ng/l	TM099	0.268	0.707	5.66	<0.2	<0.2	<0.2
N		Ŭ		#	#	#	#	#	#
A management and Mittagement and	-0.0 -		TM000	π 0.04Γ	π 0.000	7.00	π 	π	π
Ammoniacai Nitrogen as	<0.3 h	ng/i	110099	0.345	0.909	7.28	<0.3	<0.3	<0.3
NH4				#	#	#	#	#	#
COD, unfiltered	<7 m	a/l	TM107	<7	10.1	3330	<7	<7	7.65
		Ŭ		#	#	#	#	#	#
	.0.1	0	T1450	π	π	<i>π</i>	<i>π</i>	<i>π</i>	π
Antimony (diss.nit)	<0.1	0	11/1152	0.171	0.081	2.06	0.27	0.306	0.172
	µg/I								
Arsenic (diss.filt)	<0.1	2	TM152	39.4	45.4	14.4	3.79	6.51	17.3
	µg/l			#	#	#	#	#	#
Barium (diss filt)	<0.0	3	TM152	116	73 /	30.0	15.4	70.1	66
Danum (uiss.iiit)	<0.0	3	1101132	110	73.4	39.9	13.4	79.1	
	µg/i			#	#	#	#	#	#
Beryllium (diss.filt)	<0.0	7	TM152	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
	µg/l			#	#	#	#	#	#
Boron (diss filt)	<9.4	Ja/I	TM152	133	138	27.8	82.3	106	140
(a.co.m.)		- 9' '		ш.	ш	_1.5 	л	л оо л	. п
-				#	#	#	#	#	#
Cadmium (diss.filt)	<0.1 µ	ug/l	TM152	<0.1	<0.1	0.228	<0.1	<0.1	<0.1
				#	#	#	#	#	#
Chromium (diss filt)	<0.2	2	TM152	2 23	5 24	7 52	1 21	2 27	1 71
	un/l			 	<u>с. </u>			 	ш
	μy/i			#	#	#	#	#	#
Cobalt (diss.filt)	<0.0	6	TM152	0.3	3.29	9.27	0.337	11.8	1.25
	µg/l			#	#	#	#	#	#
Copper (diss.filt)	<0.8	5	TM152	1.95	1.59	61.3	1.16	1.08	1.74
	un/l		-	#	#	#		#	#
	P9/1	0	T1450	#	#	#	#	#	#
Lead (diss.filt)	<0.0	2	TM152	0.059	0.072	22.8	<0.02	0.098	0.057
	µg/l			#	#	#	#	#	#
Manganese (diss.filt)	< 0.0	4	TM152	772	1200	983	23	1180	665
č ()	ua/l			#	#	#	#	#	#
Nickel (diss filt)	<0.1	5	TM152	6.63	 8 /3	12.3	2.26	 19./	8 /3
	~0.1	5	1101132	0.05	0.45	12.5	2.20	10.4	0.40
	µg/i			#	#	#	#	#	#
Selenium (diss.filt)	<0.3	9	TM152	9.71	1.13	1.87	1.86	1.76	7.19
	µg/l			#	#	#	#	#	#
Thallium (diss filt)	<0.9	6	TM152	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96
	ug/l	Ŭ		0.00	0.00	0.00	0.00	0.00	0.00
	μ9/1		-	0.057	0.05	7.07	0.750	0.011	0.07
Vanadium (diss.filt)	<0.2	4	IM152	0.657	2.35	7.67	0.759	0.941	0.67
	µg/l			#	#	#	#	#	#
Zinc (diss.filt)	< 0.4	1	TM152	15.7	11.2	280	1.27	17.5	11.9
	ug/l				#	#	#	#	#
EDIL Develop 040 040	P9/1		T1470	#	#	#	#	#	#
EPH Range >010 - 040	<46 µ	ıg/I	11/172	<4b	<40	1430	<40	<4b	<4b
(aq)				#	#	#	#	#	#
Total EPH (C6-C40) (aq)	<100	µg/l	TM172	<100	<100	1430	<100	<100	<100
× / × 1/	· · ·	-							
Mercury (dies filt)	~0.0	1	TM182	<0.01	~0.01	0.0171	~0.01	~0.01	~0.01
	~ 0.0		1111103	~ 0.01	NU.U I	0.0171	NU.U I	<u>∿0.01</u>	~ 0.01
	µg/l			#	#	#	#	#	#
Sulphate	<2 m	ig/l	TM184	457	74.5	<2	70.1	82.2	287
				#	#	#	#	#	#
Phosphate (ortho) as PO4	<0.0	5	TM184	<0.05	0.07	14 1	4 46	0.056	<0.05
	-0.0	ĭ	111104	.0.00	5.01 "	и п. т. т.	лт у л	0.000 "	.0.00
		<u> </u>	-	#	#	#	#	#	#
Nitrate as NO3	<0.3 n	ng/l	TM184	<0.3	0.926	<0.3	18.7	9.17	2.01
				#	#	#	#	#	#
рН	<1 p	н	TM256	7.59	7.9	7.55	7.56	8.09	7.22
	LInite	s		#		#			
Olivery (dia e Cit)	4.5		T1 1000	#	#	#	#	#	#
Silver (diss.fiit)	<1.5	ug/i	11/1283	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5

CERTIFICATE OF ANALYSIS

Validated

GRO by GC-FID (W)								
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.	urd to	Depth (m) Sample Type Date Sampled	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 02/09/2015
check the efficiency of the method	. The	Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
results of individual compounds w samples aren't corrected for the re	ithin covery	SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		AGS Reference	12000010	12000011	12000012	12000010	12000010	12000014
Component	LOD/Un	its Method	-					
Methyl tertiary butyl ether (MTBE)	<3 µç	g/l TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Benzene	<7 με	g/l TM245	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Toluene	<4 µç	g/l TM245	<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
Ethylbenzene	<5 µç	g/l TM245	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
m,p-Xylene	<8 hố	g/l TM245	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
o-Xylene	<3 µç	g/l TM245	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Sum of detected BTEX	<28 µ	g/l TM245	<28	<28	<28	<28	<28	<28
GRO >C5-C10	<10 µ	g/l TM245	<10	<10	281	<10	<10	<10
EPH (C6-C10)	<100 µ	ıg/I TM245	<100	<100	<100		<100	<100

CERTIFICATE OF ANALYSIS

		CEP		NAL 1 313
SDG:	150903-66	Location:	Stag Brewery	Order Number:
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329161
Client Reference:		Attention:	Gary Marshall	Superseded Report:
SVOC MS (W) -	Aqueous			

	3	0	B 110					
# ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 02/09/2015
** % recovery of the surrogate standa check the efficiency of the method.	ard to . The	Sampled Time	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
results of individual compounds wind the samples aren't corrected for the re-	ithin covery	SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	12003516	12003511	12003512	12003513	12003515	12003514
Component	LOD/Un	its Method						
1,2,4-Trichlorobenzene	<1 µg	/l TM176	<1	<1 ""	<4	<1	<1	<1
1,2-Dichlorobenzene (aq)	<1 µg	/l TM176	# <1	# <1	# <4	# <1	# <1	# <1
1 3-Dichlorobenzene (ag)	<1 uc	ı/I TM176	# <1	# <1	#	# <1	#	#
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			#	#	#	#	#	#
1,4-Dichlorobenzene (aq)	<1 µg	J/I IM176	<1	<1	<4	<1	<1	<1
2,4,5-Trichlorophenol (aq)	<1 µg	/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg	/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg	/l TM176	<1 #	<1 #	<4 #	<1 		<1 #
2,4-Dimethylphenol (aq)	<1 µg	/l TM176	<1	<1			* <1	<1
2,4-Dinitrotoluene (aq)	<1 µg	/l TM176	# <1	# <1	# <4	# <1	# <1	# <1
2,6-Dinitrotoluene (ag)	<1 µg	/l TM176	# <1	# <1	#	# <1	# <1	#
2-Chloronaphthalene (ag)	<1.00	// TM176	#	#	#	# <1	#	#
	1 12		#	#	#	#	#	#
	<1 µg	// ////////////////////////////////////	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Methylnaphthalene (aq)	<1 µg	J/I TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Methylphenol (aq)	<1 µg	/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Nitroaniline (aq)	<1 µg	J/I TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
2-Nitrophenol (aq)	<1 µg	/l TM176	<1 #	<1 #	<4 #	<1 		<1 #
3-Nitroaniline (aq)	<1 µg	J/I TM176	 <1					
4-Bromophenylphenylethe	<1 µg	J/I TM176	# <1	# <1	# <4	# <1	# <1	# <1
r (aq) 4-Chloro-3-methylphenol	<1 µg	J/I TM176	# <1	# <1	# <4	# <1	# <1	# <1
(aq) 4-Chloroaniline (aq)	<1 µg	/l TM176	# <1	# <1	#	# <1	# <1	# <1
	<1.00	// TM176	<1	<1	<4	<1	<1	<1
r (aq)	1 12		#	#	#	#	#	#
4-methylphenol (aq)	<1 µg	/1 11/11/6	<1 #	<1 #	172 #	<1 #	<1 #	<1 #
4-Nitroaniline (aq)	<1 µg	/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
4-Nitrophenol (aq)	<1 µg	J/I TM176	<1	<1	<4	<1	<1	<1
Azobenzene (aq)	<1 µg	J/I TM176	<1	<1 "	<4	<1	<1 #	<1
Acenaphthylene (aq)	<1 µg	J/I TM176	<1 "	<1 "		<1 "	* <1	<1
Acenaphthene (aq)	<1 µg	/l TM176	# <1	# <1	# <4	<1	# <1	# <1
Anthracene (aq)	<1 µg	/l TM176	# <1	# <1	# <4	<1 #	# <1	# <1
bis(2-Chloroethyl)ether	<1 µg	J/I TM176	# <1	# <1	# <4	# <1	# <1	# <1
(aq) bis(2-Chloroethoxv)metha	<1 ມດ	/l TM176	# <1	# <1	#	# <1	# <1	#
ne (aq)	- 2	// TM176	#	#	#	#	#	#
(aq)	~z µg		**	#		*	*	**
Butylbenzyl phthalate (aq)	<1 µg	/I TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

Validated

SDG:	150903-66	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329161
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)						
tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate stands	ard to	Date Sampled	02/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	02/09/2015
check the efficiency of the method results of individual compounds w	. The ithin	Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
samples aren't corrected for the re (F) Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	12003516	12003511	12003512	12003513	12003515	12003514
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Benzo(a)anthracene (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Benzo(b)fluoranthene (aq)	<1 µ	g/l TM176	 <1 #	 <1 #	6.42 #			
Benzo(k)fluoranthene (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Benzo(a)pyrene (aq)	<1 µ	g/l TM176	<1 #	<1 #	4.69 #	<1 #	<1 #	<1 #
Benzo(g,h,i)perylene (aq)	<1 µ	g/l TM176	<1 #	<1 #	4.05 #	<1 #	<1 #	<1 #
Carbazole (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Chrysene (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Dibenzofuran (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
n-Dibutyl phthalate (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Diethyl phthalate (aq)	<1 µ	g/I IM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Dibenzo(a,h)anthracene (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Dimethyl phthalate (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
n-Dioctyl phthalate (aq)	<5 µ	g/l TM176	<5 #	<5 #	<20 #	<5 #	<5 #	<5 #
Fluoranthene (aq)	<1 µ	g/l TM176	<1 #	<1 #	6.12 #	<1 #	<1 #	<1 #
Fluorene (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Hexachlorobenzene (aq)	<1 µ	g/l TM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Hexachlorobutadiene (aq)	<1 µ	g/I IM176	<1 #	<1 #	<4 #	<1 #	<1 #	<1 #
Pentachlorophenol (aq)	<1 µ	g/l IM176	<1	<1	<4	<1	<1	<1
Phenol (aq)	<1 µ	g/I IM176	<1	<1	10.7	<1	<1	<1
n-Nitroso-n-dipropylamine (aq)	<1 µ	g/I IM176	<1 #	<1 *1	<4 #	<1 #	<1 *1	<1 #
Nitrobonzono (ag)	<1 µ	g/I TM176	<1 (1)	<1 #	<4 #	<1 <1	<1 #	<1 #
	<1 µ	g/l TM176	×1 #	×1 #		×1 #	×1 #	×1 #
	<1 µ	g/l TM176	<1	<1 <1	<4 #	<1 <1	<1 <1	<1 <1
	<1 µ	g/l TM176	<1	<1	<4 #	<1	<1	<1
e (aq) Phenanthrene (aq)	<1 µ	g/l TM176	<1	<1	<4	<1	<1	<1
Indeno(1.2.3-cd)pyrene	<1 u	a/I TM176	= #	# <1	# <4	<i>*</i>	#	# <1
(aq) Pyrene (aq)	<1 µ	g/l TM176	# <1	# <1	4.78	# <1	# <1	# <1
2 X- 17			#	#	#	#	#	#
	-							

CERTIFICATE OF ANALYSIS

Validated

SDG:		
Job:		

SDG:	150903-66 H URS WIM-	273	Location: S	Stag Brewery		Order Number: Report Number:	329161	
Client Reference:	1_0100_0000	210	Attention: (Bary Marshall		Superseded Repo	ort:	
VOC MS (W)		Customer Sample P	DUO	DUIZ	DUO	DUMO	DUDDAA	DUIADAD
# ISO17025 accredited. M mCERTS accredited.		Customer Sample K	BHZ	вн/	вня	вній	BH201A	BH104B
aq Aqueous / settled sample diss.filt Dissolved / filtered sampl tot.unfilt Total / unfiltered sample. * Subcontracted test.	Ie.	Depth (m) Sample Type Date Sampled	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 02/09/2015
** % recovery of the surroga check the efficiency of the results of individual comp samples aren't corrected	ate standard to e method. The pounds within for the recovery	Sampled Time Date Received SDG Ref	03/09/2015 150903-66	03/09/2015 150903-66	03/09/2015 150903-66	03/09/2015 150903-66	03/09/2015 150903-66	03/09/2015 150903-66
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see ap	pendix)	Lab Sample No.(s) AGS Reference	12003516	12003511	12003512	12003513	12003515	12003514
Component	LOD/Un	its Method						
Dibromofluoromethane*	* %	TM208	89.4	87.9	83	117	90.6	119
Toluene-d8**	%	TM208	80.2	80.5	81.6	99.4	81.4	99.8
4-Bromofluorobenzene*	* %	TM208	78.8	78.1	78.6	96.2	80.2	97.4
Dichlorodifluoromethane	e <1 μς	j/l TM208	<1	<1	<1	<1	<1	<1
Chloromethane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 μς	J/I TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 μς	j/l TM208	<1	<1 # #	2.28	<1 #	<1 #	<1 #
Dichloromethane	<3 µç	j/l TM208	<3	<3 # #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ethe (MTBE)	er <1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethen	e <1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 μς	j/l TM208	<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 μς	j/l TM208	<1	<1	<1	<1	<1	<1
Benzene	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 μς	j/l TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 μς	j/l TM208	<1	<1 ##	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 μς	j/l TM208	<1	<1 ##	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	e <1 μς	j/l TM208	<1	<1 ##	<1 #	<1 #	<1#	<1
Toluene	<1 μς	j/l TM208	<1	<1 ##	<1 #	<1 #	<1#	<1
trans-1,3-Dichloroprope	ne <1 με	j/l TM208	<1	<1 ##	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 μς	J/I TM208	<1	<1 # #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

Validated

SDG:	150903-66	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329161
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (W)

Results Legend		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
# ISO17025 accredited. M mCERTS accredited. ag Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 02/09/2015
** % recovery of the surrogate stand check the efficiency of the method results of individual compounds w	ard to I. The vithin	Sampled Time Date Received	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015	03/09/2015
(F) Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	150903-66 12003516	150903-66 12003511	150903-66 12003512	150903-66 12003513	150903-66 12003515	150903-66 12003514
Component	LOD/Ur	AGS Reference						
1,3-Dichloropropane	<1 µ(g/I TM208	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1 µ	g/l TM208	# <1	# <1	# <1	# <1	# <1	# <1
Dibromochloromethane	<1 µç	g/I TM208	# <1	# <1	# <1	# <1	# <1	# <1
1,2-Dibromoethane	<1 µç	g/I TM208	# <1	# <1	# <1	# <1	# <1	# <1
Chlorobenzene	<1 µç	g/I TM208	# 1.7	# 1.77	# 1.89	# <1	# 1.8	# <1
1,1,1,2-Tetrachloroethane	<1 µg	g/I TM208	# <1	# <1	# <1	# <1	# <1	# <1
Ethylbenzene	<1 µg	g/l TM208	#	#	#	#	# <1	#
m p-Xvlene	<1 µ	a/I TM208	#	#	#	= #	#	#
		a/l TM208		#	- #	- #	- #	#
o-xylene	<1μί	y/i TM200	×1 #	×1 #	×1 #	<1 #	×1 #	*1
Styrene	<1 µ(g/I I M208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µ	g/l TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µ(g/l TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µ	g/I TM208	<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µ(g/I TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µ(g/I TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µ	g/I TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µ	g/I TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µç	g/I TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µç	g/I TM208	<1 #	<1 #	<1 #	<1 #		<1 #
tert-Butylbenzene	<1 µç	g/I TM208	<1 #	<1 #	<1 #	<1 #		<1 #
1,2,4-Trimethylbenzene	<1 µç	g/I TM208	<1 #	<1 #	<1 #	<1 #	" <1 #	<1 #
sec-Butylbenzene	<1 µç	g/I TM208	<1 #	<1 #	<1 #	<1 #	" <1 #	<1 #
4-iso-Propyltoluene	<1 µ(g/I TM208	<1 #	<1 #	<1 #	<1 #		<1 #
1,3-Dichlorobenzene	<1 µ(g/I TM208	<1 #	<1 #	<1 #	<1 #	~1 #	<1 #
1,4-Dichlorobenzene	<1 µ(g/l TM208	 <1 #	 <1 #			π <1 #	
n-Butylbenzene	<1 µ(g/l TM208	# <1 #	# <1 				
1,2-Dichlorobenzene	<1 µ(g/l TM208	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloroprop ane	<1 µ(g/I TM208	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µ	g/I TM208	<1	<1 	<1 <u>"</u>	<1	<1	<1
Hexachlorobutadiene	<1 µç	g/I TM208	# <1	# <1 	# <1	# <1	# <1	# <1
tert-Amyl methyl ether (TAMF)	<1 µ	g/I TM208	# <1 	# <1 	# <1 	# <1 	# <1 	
Naphthalene	<1 µg	g/l TM208	# <1	<1	<1		* <1	<1
		-	#	#	#	1#	#	#

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VOC MS (W)

()	_							
# ISO17025 accredited.		Customer Sample R	BH2	BH7	BH9	BH10	BH201A	BH104B
M mCERTS accredited. aq Aqueous / settled sample.		Depth (m)						
tot.unfilt Total / unfiltered sample.		Sample Type	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 02/09/2015	Water(GW/SW) 02/09/2015
** % recovery of the surrogate standa check the efficiency of the method.	rd to The	Sampled Time	03/09/2015		03/09/2015		03/09/2015	03/09/2015
results of individual compounds wi samples aren't corrected for the red	thin covery	SDG Ref	150903-66	150903-66	150903-66	150903-66	150903-66	150903-66
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	12003516	12003511	12003512	12003513	12003515	12003514
Component	LOD/Unit	ts Method						
1,2,3- I richlorobenzene	<1 µg/	I IM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/	'I TM208	<1	<1	<1	<1	<1	<1

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Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <u>1</u>	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM283		Determination of Dissolved Niobium, Tungsten, and Zirconium in Water Matrices by ICP-MS		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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SDG:

Job:

CERTIFICATE OF ANALYSIS

150903-66 Location: Stag Brewery Order Number: H_URS_WIM-273 Customer: AEČOM 329161 Report Number: Client Reference: Attention: Gary Marshall . Superseded Report:

Test Completion Dates

Lab Sample No(s)	12003516	12003511	12003512	12003513	12003515	12003514
Customer Sample Ref.	BH2	BH7	BH9	BH10	BH201A	BH104B
AGS Ref.						
Depth						
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
Anions by Kone (w)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	09-Sep-2015
COD Unfiltered	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015	05-Sep-2015
Dissolved Metals by ICP-MS	06-Sep-2015	08-Sep-2015	06-Sep-2015	07-Sep-2015	08-Sep-2015	06-Sep-2015
Dissolved W, Nb and Zr by ICP-MS	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH (DRO) (C10-C40) Aqueous (W)	07-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015	07-Sep-2015	08-Sep-2015
GRO by GC-FID (W)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Mercury Dissolved	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015	08-Sep-2015
Nitrite by Kone (w)	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	06-Sep-2015	09-Sep-2015
pH Value	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	07-Sep-2015
SVOC MS (W) - Aqueous	07-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015	07-Sep-2015	08-Sep-2015
Total EPH (aq)	08-Sep-2015	08-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015	09-Sep-2015
VOC MS (W)	07-Sep-2015	07-Sep-2015	07-Sep-2015	09-Sep-2015	07-Sep-2015	09-Sep-2015

150903-66

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

ASSOCIATED AQC DATA

Location: Stag Brewery AEČOM Customer: Attention: Gary Marshall

Order Number: Report Number: Superseded Report:

329161

Ammoniacal Nitrogen

Client Reference:

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SDG:

Job:

Component	Method Code	QC 1214	QC 1207
Ammoniacal Nitrogen as	TM099	102.8	104.4
N		91.84 : 108.16	91.84 : 108.16

Anions by Kone (w)

Component	Method Code	QC 1269	QC 1243
Chloride	TM184	99.4	
		94.64 : 106.82	94.23 : 107.50
Phosphate (Ortho as	TM184		102.4
PO4)		96.40 : 108.40	96.41 : 109.80
Sulphate (soluble) TM184		101.2	
		96.47 : 104.74	94.38 : 108.93
TON as NO3	TM184	98.5	
		93.05 : 112.12	93.93 : 110.49

COD Unfiltered

Component	Method Code	QC 1200	QC 1252
COD	TM107	97.91 95.90 : 102.57	100.38 95.90 : 102.57

Dissolved Metals by ICP-MS

Component	Method Code	QC 1282	QC 1276
Aluminium	TM152	103.33 88.58 : 117.87	100.53 88.58 : 117.87
Antimony	TM152	100.4 87.01 : 109.33	100.53 87.01 : 109.33
Arsenic	TM152	99.87 89.45 : 113.51	100.67 89.45 : 113.51
Barium	TM152	99.33 90.47 : 113.85	98.53 90.47 : 113.85
Beryllium	TM152	102.13 84.68 : 120.26	102.4 84.68 : 120.26
Boron	TM152	98.93 82.95 : 121.47	99.73 82.95 : 121.47
Cadmium	TM152	102.93 90.40 : 113.29	101.73 90.40 : 113.29
Chromium	TM152	102.27 90.01 : 114.05	102.27 90.01 : 114.05
Cobalt	TM152	102.0 87.14 : 117.85	100.8 87.14 : 117.85
Copper	TM152	97.6 88.43 : 114.27	100.53 88.43 : 114.27
Lead	TM152	96.67 89.53 : 109.90	96.53 89.53 : 109.90

CERTIFICATE OF ANALYSIS

Stag Brewery

Gary Marshall

AEČOM

Location:

Customer:

Attention:

150903-66 H_URS_WIM-273 **Client Reference:**

Order Number: 329161 Report Number: Superseded Report:

Dissolved Metals by ICP-MS

SDG:

Job:

		QC 1282	QC 1276
Lithium	TM152	103.07 84.32 : 123.11	102.8 84.32 : 123.11
Manganese	TM152	102.13 91.43 : 113.17	102.13 91.43 : 113.17
Molybdenum	TM152	98.27 80.73 : 113.85	98.93 80.73 : 113.85
Nickel	TM152	100.27 87.68 : 113.94	100.13 87.68 : 113.94
Phosphorus	TM152	88.93 86.68 : 118.34	100.93 86.68 : 118.34
Selenium	TM152	100.4 91.03 : 113.34	100.53 91.03 : 113.34
Strontium	TM152	102.0 90.44 : 114.09	100.67 90.44 : 114.09
Tellurium	TM152	90.27 80.93 : 116.91	85.6 80.93 : 116.91
Thallium	TM152	96.27 90.27 : 111.31	98.93 90.27 : 111.31
Tin	TM152	101.47 83.07 : 112.37	99.6 83.07 : 112.37
Titanium	TM152	102.93 92.65 : 111.58	101.07 92.65 : 111.58
Uranium	TM152	94.13 88.60 : 110.35	94.53 88.60 : 110.35
Vanadium	TM152	102.27 88.43 : 116.60	102.53 88.43 : 116.60
Zinc	TM152	95.73 89.84 : 113.06	101.6 89.84 : 113.06

Dissolved W, Nb and Zr by ICP-MS

Component	Method Code	QC 1290
Bismuth	TM283	92.13 66.55 : 123.56
Niobium	TM283	107.6 85.00 : 115.00
Silver	TM283	105.33 81.37 : 112.35
Tungsten	TM283	85.87 85.00 : 115.00
Zirconium	TM283	102.27 85.00 : 115.00

EPH (DRO) (C10-C40) Aqueous (W)

Component	Method Code	QC 1284	QC 1280
EPH (DRO) (C10-C40)	TM172	80.5 59.47 : 106.15	72.5 59.22 : 112.78

GRO by GC-FID (W)

Validated

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GRO by GC-FID (W)

Component	Method Code	QC 1234
Benzene by GC	TM245	98.0 77.50 : 122.50
Ethylbenzene by GC	TM245	97.5 77.50 : 122.50
m & p Xylene by GC	TM245	97.75 77.50 : 122.50
MTBE GC-FID	TM245	101.0 77.50 : 122.50
o Xylene by GC	TM245	97.0 77.50 : 122.50
QC	TM245	104.67 74.88 : 125.54
Toluene by GC	TM245	98.5 77.50 : 122.50

Mercury Dissolved

Component	Method Code	QC 1282	QC 1248
Mercury Dissolved	TM183	108.0	96.1
(CVAF)		73.51 : 120.83	73.51 : 120.83

pH Value

Component	Method Code	QC 1280	QC 1258
рН	TM256	101.62 99.37 : 102.65	101.08 99.20 : 102.85

SVOC MS (W) - Aqueous

Component	Method Code	QC 1255	QC 1208	QC 1247
4-Bromophenylphenyleth	TM176	65.28	87.2	82.4
ei		55.04 : 128.00	55.04 : 128.00	65.62 : 120.95
Benzo(a)anthracene	TM176	66.0	87.2	82.4
		52.64 : 123.68	52.64 : 123.68	62.83 : 114.26
Benzo(a)pyrene	TM176	58.24	79.68	80.8
		49.60 : 114.40	49.60 : 114.40	54.19 : 105.67
Butylbenzyl phthalate	TM176	70.32	93.6	82.4
		49.04 : 127.76	49.04 : 127.76	45.10 : 118.90
Hexachlorobutadiene	TM176	59.36	77.52	61.28
		42.80 : 108.20	42.80 : 108.20	43.12 : 110.32
Naphthalene	TM176	67.92	92.0	85.6
		47.20 : 116.80	47.20 : 116.80	69.48 : 118.94
Nitrobenzene	TM176	69.36	88.8	79.52
		58.70 : 110.90	58.70 : 110.90	69.13 : 107.62
Phenol	TM176	38.08	50.08	49.12
		30.25 : 79.75	30.25 : 79.75	30.92 : 74.19

150903-66

H_URS_WIM-273

SDG: Job: Client Reference:

VOC MS (W)

CERTIFICATE OF ANALYSIS

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 3 Superseded Report:

329161

Component	Method Code	QC 1272	QC 1223	QC 1239
1,1,1,2-Tetrachloroethan e	TM208	91.5 84.25 : 114.84	94.5 77.50 : 122.50	100.5 84.25 : 114.84
1,1,1-Trichloroethane	TM208	90.0 84.67 : 111.97	96.5 77.50 : 122.50	96.0 84.67 : 111.97
1,1-Dichloroethane	TM208	92.0 80.19 : 121.45	107.0 77.50 : 122.50	99.5 80.19 : 121.45
1,2-Dichloroethane	TM208	93.0 77.68 : 127.05	98.0 77.50 : 122.50	99.0 77.68 : 127.05
2-Chlorotoluene	TM208	93.0 85.81 : 116.77	97.0 77.50 : 122.50	99.0 85.81 : 116.77
4-Chlorotoluene	TM208	92.5 87.22 : 115.45	97.5 77.50 : 122.50	100.0 87.22 : 115.45
Benzene	TM208	90.5 82.30 : 120.49	103.0 77.50 : 122.50	101.0 82.30 : 120.49
Bromomethane	TM208	99.0 76.16 : 123.35	104.0 75.87 : 132.10	90.0 76.16 : 123.35
Carbontetrachloride	TM208	92.5 83.96 : 117.98	98.5 77.50 : 122.50	99.5 83.96 : 117.98
Chlorobenzene	TM208	94.5 85.75 : 114.88	99.5 77.50 : 122.50	100.0 85.75 : 114.88
Chloroform	TM208	94.0 84.84 : 119.97	103.0 77.50 : 122.50	104.5 84.84 : 119.97
Chloromethane	TM208	96.0 53.63 : 141.38	131.0 77.12 : 138.43	113.5 53.63 : 141.38
Cis-1,2-Dichloroethene	TM208	102.5 81.65 : 120.44	111.0 77.50 : 122.50	111.0 81.65 : 120.44
Dichloromethane	TM208	93.5 79.31 : 122.56	113.0 77.50 : 122.50	104.0 79.31 : 122.56
Ethylbenzene	TM208	89.5 80.74 : 110.74	96.0 78.88 : 104.73	94.0 80.74 : 110.74
Hexachlorobutadiene	TM208	101.5 68.91 : 121.59	81.5 72.12 : 118.38	91.5 68.91 : 121.59
o-Xylene	TM208	91.0 85.43 : 113.21	96.0 82.27 : 108.61	95.0 85.43 : 113.21
p/m-Xylene	TM208	90.0 80.94 : 113.51	97.0 74.83 : 118.29	95.0 80.94 : 113.51
Tert-butyl methyl ether	TM208	102.5 59.77 : 129.51	87.0 75.13 : 130.32	88.5 59.77 : 129.51
Tetrachloroethene	TM208	91.5 83.21 : 115.40	95.0 82.93 : 109.54	101.5 83.21 : 115.40
Toluene	TM208	90.0 86.02 : 114.04	96.5 80.95 : 110.35	98.5 86.02 : 114.04
Trichloroethene	TM208	92.0 83.50 : 113.50	96.5 82.90 : 111.55	96.5 83.50 : 113.50
Vinyl Chloride	TM208	84.5 63.71 : 124.88	105.5 64.36 : 126.94	82.0 63.71 : 124.88
	Component1,1,1,2-Tetrachloroethane1,1,1-Trichloroethane1,1-Dichloroethane1,2-Dichloroethane2-Chlorotoluene4-ChlorotolueneBenzeneBromomethaneCarbontetrachlorideChlorobenzeneChloromethaneChloromethaneDichloromethaneHexachlorobutadienehexachlorobutadieneTetrachloroetheneTolueneTrichloroetheneVinyl Chloride	ComponentMethod Code1,1,1,2-Tetrachloroethan eTM2081,1,1-TrichloroethaneTM2081,1-DichloroethaneTM2081,2-DichloroethaneTM2082-ChlorotolueneTM2084-ChlorotolueneTM208BenzeneTM208CarbontetrachlorideTM208ChlorobenzeneTM208ChloroformTM208ChloromethaneTM208ChloroformTM208ChloromethaneTM208ChloromethaneTM208ChloromethaneTM208DichloromethaneTM208DichloromethaneTM208DichloromethaneTM208Method ZogTM208TM208TM208TM208TM208DichloromethaneTM208ThyleneTM208Tetr-butyl methyl etherTM208TolueneTM208TolueneTM208Vinyl ChlorideTM208	Component Method Code QC 1272 1,1,1,2-Tetrachloroethane TM208 91.5 e TM208 90.0 1,1,1-Trichloroethane TM208 92.0 1,1-Dichloroethane TM208 93.0 1,2-Dichloroethane TM208 93.0 2-Chlorotoluene TM208 93.0 2-Chlorotoluene TM208 90.5 82.30: 120.49 89.0 85.81: 116.77 4-Chlorotoluene TM208 90.5 82.30: 120.49 90.5 82.30: 120.49 Benzene TM208 90.5 82.30: 120.49 90.5 82.30: 120.49 Bromomethane TM208 90.5 82.30: 120.49 90.5 82.30: 120.49 Chlorobenzene TM208 92.5 83.96: 117.98 94.5 85.75: 114.88 Chloroform TM208 94.0 84.84: 119.97 104.5 89.5 Chlorobenzene TM208 94.0 84.84: 119.97 102.5	Component Method Code QC 1272 QC 1223 1,1,2-Tetrachloroethane TM208 91.5 94.5 1,1,1-Trichloroethane TM208 90.0 96.5 1,1.1-Trichloroethane TM208 92.0 107.0 1,1-Dichloroethane TM208 93.0 77.50: 122.50 1,1-Dichloroethane TM208 93.0 97.0 1,2-Dichloroethane TM208 93.0 97.0 2-Chlorotoluene TM208 92.5 97.5 4-Chlorotoluene TM208 92.5 97.5 85.81:116.77 77.50: 122.50 103.0 77.50:122.50 82.30: 120.49 77.50: 122.50 Bromomethane TM208 99.0 104.0 76.16:123.35 75.87: 132.10 75.50: 122.50 Chlorobenzene TM208 94.5 99.5 0.10 TM208 94.0 103.0 84.84:119.97 77.50: 122.50 77.50: 122.50 Chlorobenzene TM208 94.0 103.0 84.84:119.

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

The figure detailed is the percentage recovery result for the AQC.

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.















G: :: unt Reference:	150903-66 H_URS_WIM-273	Location: Customer:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Percet:	329161	
IN REIEIEIICE:		Allention:	Chromatoaran			
lysis: GRO b	by GC-FID (W)	Sample No	: 12010788	Depth :		
1000		Sample ID .	BH10			
_		120107	88_GRO_W.DATA - Chem	73 FID		
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SDG: 150903-66 H_URS_WIM-273 Location: Stag Brewery Customer: Order Number: Report Number: 329161 Client Reference: H_URS_WIM-273 Location:: Gary Marshall Supreseded Report: Attention: Gary Marshall Supreseded Report: 329161 Analysis: GRO by GC-FID (W) Sample ID: 12010954 Depth : Sample ID: BH201A Depth : 12010954_ORO_VV.DATA - Chem 73 FID	
Analysis: GRO by GC-FID (W) Sample No : 12010954 Depth : BH201A Depth : 12010954_GRO_WV.DATA - Chem 73 FID	
Analysis: GRO by GC-FID (W) Sample ID: 12010954_GRO_W.DATA - Chem 73 FID	
12010954_GRO_WDATA - Chem 73 FD	
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SDG:	150903-66	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

329161

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	ATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	END OVER END	GCFID
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	ENDOWEREND	GCFID
POB TOT / POB CON	D&C	HEXANE/ACETONE	ENDOVEREND	GCMS
POL VAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POLVAROMATIC HYDROCARBONS RAFID GC	WET	HEXANEACETONE	SHAVER	9CEZ
SEM VOLATILEORGANIC	WET		SONCATE	CCM6

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH .	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST 00P/0PP	DOM	LIQUID'LIQUID SHAKE	GCMS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Containing Material, Asbestos removed 'Screening of during the soils Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) method of transmitted/polarised in-house light microscopy and central stor dispersion staining, based on HSG 248 (2005)

Asbestos Type	Common Name	
Chrysofile	WhiteAsbestos	
Amoste	BrownAsbestos	
Orodolte	Blue Asbestos	
Fibrous Adinaite	-	
Fibrous Anthophylite	-	
Fibrous Tremolile	-	

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

SDG:	150903-66	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329161
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

Container with Headspace provided for volatiles analysis
Incorrect container received
Deviation from method
Holding time exceeded before sample received
Samples exceeded holding time before presevation was performed
Sampled on date not provided
Sample holding time exceeded in laboratory
Sample holding time exceeded due to sampled on date
Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	WhiteAsbestos
Amoste	BrownAsbestos
Orodolite	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.


UK and Ireland Office Locations



