



Appendix F5

Final Verification – CLEA Statistics

Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type	MG								
								Location & Depth	MG 150616 211 (HOLE 53)	MG 150616 214 (HOLE 56)	MG 150615 221 (HOLE 63)						
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Result of Significance Test									
Arsenic	0.6	3	9.05	11.1	0	640	12.63197	POTENTIALLY SUITABLE FOR USE	9.05	9.3	11.1						
Beryllium	0.01	3	0.846	1.33	0	390	1.691951	POTENTIALLY SUITABLE FOR USE	0.904	0.846	1.33						
Boron	1	3	1	1	0	190000	1		1	1	1						
Cadmium	0.02	3	0.274	0.454	0	220	0.584515	POTENTIALLY SUITABLE FOR USE	0.454	0.328	0.274						
Chromium (III)	0.9	3	23.6	36.6	0	8400	46.08974	POTENTIALLY SUITABLE FOR USE	23.6	26.4	36.6						
Chromium (VI)	1.2	0	0	0	0	33											
Copper	1.4	3	17.3	22.3	0	69000	25.9303	POTENTIALLY SUITABLE FOR USE	17.3	18.6	22.3						
Lead	0.7	3	25.3	38.8	0	2330	49.98398	POTENTIALLY SUITABLE FOR USE	38.8	34.1	25.3						
Mercury, inorganic	0.14	3	0.14	0.14	0	3600	0.14		0.14	0.14	0.14						
Nickel	0.2	3	26.8	44.2	0	1700	56.84091	POTENTIALLY SUITABLE FOR USE	26.8	31.2	44.2						
Selenium	1	3	1	1	0	13000	1		1	1	1						
Vanadium	0.2	3	26.9	38	0	9000	46.732	POTENTIALLY SUITABLE FOR USE	26.9	26.9	38						
Zinc	1.9	3	75.2	76.2	0	670000	76.98667	POTENTIALLY SUITABLE FOR USE	75.2	75.2	76.2						
Cyanide (free)	1	3	1	1	0	16000	1		1	1	1						
Phenol (total)	0.01	3	0.01	0.01	0	760	0.01		0.01	0.01	0.01						
Acenaphthene	0.008	3	0.008	0.008	0	84000	0.008		0.008	0.008	0.008						
Acenaphthylene	0.012	3	0.012	0.012	0	83000	0.012	POTENTIALLY SUITABLE FOR USE	0.012	0.012	0.012						
Anthracene	0.016	3	0.016	0.016	0	520000	0.016		0.016	0.016	0.016						
Benz(a)anthracene	0.014	3	0.014	0.014	0	86	0.014		0.014	0.014	0.014						
Benzo(a)pyrene	0.015	3	0.015	0.015	0	14	0.015		0.015	0.015	0.015						
Benzo(b)fluoranthene	0.015	3	0.015	0.015	0	97	0.015		0.015	0.015	0.015						
Benzo(ghi)perylene	0.024	3	0.024	0.024	0	630	0.024	POTENTIALLY SUITABLE FOR USE	0.024	0.024	0.024						
Benzo(k)fluoranthene	0.014	3	0.014	0.014	0	140	0.014		0.014	0.014	0.014						
Chrysene	0.01	3	0.01	0.01	0	140	0.01		0.01	0.01	0.01						
Dibenz(a,h)anthracene	0.023	3	0.023	0.023	0	12	0.023	POTENTIALLY SUITABLE FOR USE	0.023	0.023	0.023						
Fluoranthene	0.017	3	0.017	0.017	0	23000	0.017		0.017	0.017	0.017						
Fluorene	0.01	3	0.01	0.01	0	63000	0.01		0.01	0.01	0.01						
Indeno(1,2,3,cd)pyrene	0.018	3	0.018	0.018	0	58	0.018		0.018	0.018	0.018						
Naphthalene	0.009	3	0.009	0.013	0	190	0.016147	POTENTIALLY SUITABLE FOR USE	0.009	0.009	0.013						
Phenanthrene	0.015	3	0.015	0.015	0	22000	0.015		0.015	0.015	0.015						
Pyrene	0.015	3	0.015	0.015	0	54000	0.015		0.015	0.015	0.015						
Asbestos identified	Y/N																
FOC (dimensionless)	0.004407	(mean)							0.00433	0.00599	0.0029						
SOM (calculated)	0.76%	(mean)							0.75%	1.03%	0.50%						
pH (su)	8.5	(mean)							8.7	8.32	8.58						

Risk parameter: Human health - commercial (1%SOM)

Data set: Validation

Client: Lend Lease

Site: North Wale Prison

Job no.: C14656

Lab. report no(s): Various

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC) or +ve asbestos ID. MG denotes Made Ground NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type						
								Location & Depth	MG 150616 211 (HOLE 53)	MG 150616 214 (HOLE 56)	MG 150615 221 (HOLE 63)	MG 150615 212 (HOLE 54)	MG 150616 218 (HOLE 60)	
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Result of Significance Test						
Aliphatics EC5-EC6	0.01	5	0.01	0.01	0	300	0.01		0.01	0.01	0.01	0.01	0.01	
Aliphatics >EC6-EC8	0.01	5	0.01	0.01	0	140	0.01		0.01	0.01	0.01	0.01	0.01	
Aliphatics >EC8-EC10	0.01	5	0.01	0.01	0	78	0.01		0.01	0.01	0.01	0.01	0.01	
Aliphatics >EC10-EC12	0.01	5	0.01	0.01	0	48	0.01		0.01	0.01	0.01	0.01	0.01	
Aliphatics >EC12-EC16	0.1	3	0.1	0.1	0	24	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0	0	
Aliphatics >EC16-EC35	0.2	3	0.2	17.02	0	1000000	30.4255	POTENTIALLY SUITABLE FOR USE	17.02	0.2	10.179	0	0	
Aliphatics >EC35-EC44	0.1	3	0.1	8.2	0	1000000	14.15085	POTENTIALLY SUITABLE FOR USE	8.2	0.1	1.58	0	0	
Aromatics EC5-EC7	0.01	5	0.01	0.01	0	1200	0.01		0.01	0.01	0.01	0.01	0.01	
Aromatics >EC7-EC8	0.01	5	0.01	0.01	0	870	0.01		0.01	0.01	0.01	0.01	0.01	
Aromatics >EC8-EC10	0.01	5	0.01	0.01	0	610	0.01		0.01	0.01	0.01	0.01	0.01	
Aromatics >EC10-EC12	0.01	5	0.01	0.01	0	360	0.01		0.01	0.01	0.01	0.01	0.01	
Aromatics >EC12-EC16	0.1	3	0.1	0.1	0	36000	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0	0	
Aromatics >EC16-EC21	0.1	3	0.1	1.37	0	28000	2.314082	POTENTIALLY SUITABLE FOR USE	1.37	0.1	0.668	0	0	
Aromatics >EC21-EC35	0.1	3	4.6	12.5	0	28000	18.42208	POTENTIALLY SUITABLE FOR USE	12.5	4.6	8.32	0	0	
Aromatics >EC35-EC44	0.1	3	3.92	9.89	0	28000	14.49736	POTENTIALLY SUITABLE FOR USE	9.89	3.92	4.16	0	0	
ADDITIVITY CHECK									HAZARD QUOTIENTS FOR EACH FRACTION					
									Aliphatics EC5-EC6	0.000	0.000	0.000	0.000	0.000
									Aliphatics >EC6-EC8	0.000	0.000	0.000	0.000	0.000
									Aliphatics >EC8-EC10	0.000	0.000	0.000	0.000	0.000
									Aliphatics >EC10-EC12	0.000	0.000	0.000	0.000	0.000
									Aliphatics >EC12-EC16	0.004	0.004	0.004	0.000	0.000
									Aliphatics >EC16-EC35	0.000	0.000	0.000	0.000	0.000
									Aliphatics >EC35-EC44	0.000	0.000	0.000	0.000	0.000
									Aromatics EC5-EC7	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC7-EC8	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC8-EC10	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC10-EC12	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC12-EC16	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC16-EC21	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC21-EC35	0.000	0.000	0.000	0.000	0.000
									Aromatics >EC35-EC44	0.000	0.000	0.000	0.000	0.000
									Hazard Index for ali>C8-C16	0.005	0.005	0.005	0.000	0.000
									Hazard Index for aro>C8-C16	0.000	0.000	0.000	0.000	0.000
									Hazard Index for aro>C16-C35	0.000	0.000	0.000	0.000	0.000
Risk parameter: Human health - commercial (1%SOM) Data set: Validation Client: Lend Lease Site: North Wale Prison Job no.: C14656 Lab. report no(s): Various														
Legend: Hazard Index table - HI or HQ greater than 1 highlighted with yellow shading. Main table values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Main table values in red are equal to, or greater than, the generic assessment criterion (GAC). MG denotes Made Ground NAT denotes natural ground														