



Performance Assessment Report

External Quality Assessment for: *Legionella* Isolation from Water Samples

Distribution Numbers: G61, G62, G63 and G64

Sample Numbers: G61A, G61B, G61C
G62A, G62B, G62C
G63A, G63B, G63C
G64A, G64B, G64C

Distribution Date:	January 2009
Results Due:	27 February 2009
Report Date:	26 March 2009
Data analysed by:	Heena Shah
Report compiled by:	Heena Shah Dr Nicola L. Lang Julie E. Russell
Authorised by:	Julie E. Russell

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**Centre for Infections
Food and Environmental Proficiency Testing Unit (FEPTU)**

61 Colindale Avenue

London

NW9 5EQ

Tel: +44 (0) 20 8327 7119

Fax: +44 (0) 20 8200 8264

Email: Legionellaeqa@hpa.org.uk

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This report accompanies the summary of results for *Legionella* Isolation Scheme Distribution G64. Please refer to the relevant summaries for individual sample details.

Performance assessments are designed to identify laboratories with ongoing problems with their examinations and are undertaken after every distribution.

Scores are allocated to results reported for every sample to help participants assess their performance. Cumulative scores are calculated for every participant for *Legionella* examinations for the current and previous three distributions. Participants' cumulative scores are compared with the maximum possible scores after every distribution.

Reporting an incomplete, incorrect or misleading identification of *Legionella* spp. from water samples may have serious public health implications. Correct reporting of the serogroup is essential for outbreak investigations. Outlying results may give a misleading impression of the severity of the risk associated with the water-source.

Individual comments are included in this report for those participants who achieved <70% of the maximum possible score over four distributions, which is deemed to indicate on-going problems with examinations for *Legionella* organisms.

A summary of the performance assessments and our comments is included on pages 2 – 10.

If you experienced problems with these examinations please refer to the 'Troubleshooting Section' on page 11 and request a repeat sample.

Please contact FEPTU staff for additional advice and information. Contact details are on page 12.

Information about other Health Protection Agency functions and services is available from the web-site www.hpa.org.uk

Sample specific comments:

Please note that we have not included any comments in this report relating to performance with sample G62A. We did not allocate scores for that sample because it was used to raise participants' awareness of the *Legionella* species included in the sample. We remind participants that this type of sample may occur in nature and we may allocate scores for similar samples in the future.

Note: Participants who can not perform one or more of the examinations requested are required to indicate this by writing 'NE' (not examined) in the appropriate area of the results form. Scores will not be allocated for these tests and the maximum possible score will be adjusted accordingly.

For Example:

Return of report	1
Isolation of a <i>Legionella</i> sp.	2
Correct identification of <i>L.pneumophila</i>	2
Correct serogroup	NE
Enumeration within the expected range	5
Total maximum score	10

Table 1: Performance assessment for *Legionella* isolation for samples **G61 – G64**
 NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%
		A	B	C	A	B	C	A	B	C	A	B	C			
8	L45	10	12	12	N/A	12	12	10	12	12	12	12	12	128	132	97.0
9	L58	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
12	L43	12	12	12	N/A	12	12	12	12	12	10	12	10	128	132	97.0
14	L49	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
46	L3	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
48	L28	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
53	L4	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
67	L280	12	1	11	N/A	12	12	1	12	12	12	12	12	109	132	82.6
78	L36	10	10	10	N/A	12	12	12	11	12	12	12	12	125	132	94.7
79	L40	12	12	12	N/A	0	0	12	12	12	NE	NE	NE	72	96	75.0
89	L50	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
97	EL10	12	12	12	N/A	12	12	12	11	12	12	12	12	131	132	99.2
123	L22	1	10	12	N/A	12	12	12	12	12	12	12	12	119	132	90.2
124	EL149	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
125	L164	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
126	EL220	12	12	10	N/A	12	1	12	NE	NE	12	12	12	95	108	88.0
141	L15	12	12	12	N/A	12	12	10	11	12	12	12	12	129	132	97.7
143	L8	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
145	L53	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
157	L207	12	12	11	N/A	12	12	1	12	12	10	12	12	118	132	89.4
166	L108	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
175	EL99	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
183	EL180	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100
214	EL346	NE	NE	NE	N/A	0	5	0	0	0	0	0	0	5	96	5.2
243	L247	12	12	12	N/A	12	12	12	9	12	12	11	10	126	132	95.5
252	EL199	NE	NE	NE	N/A	NE	NE	NE	NE	NE	NE	NE	NE			
253	EL32	12	12	12	N/A	12	12	1	12	12	12	12	11	120	132	90.9
293	EL74	12	12	12	N/A	12	12	8	9	1	12	12	12	114	132	86.4
329	EL301	12	10	12	N/A	12	12	12	12	12	12	12	12	130	132	98.5
342	L90	12	12	12	N/A	12	6	12	9	12	11	12	12	122	132	92.4

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**
 NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%		
		A	B	C	A	B	C	A	B	C	A	B	C					
355	EL126	11	12	12	N/A	12	12	12	12	12	12	12	12	12	131	132	99.2	
394	EL175	12	12	12	N/A	12	12	12	12	12	12	12	11	131	132	99.2		
395	EL153	12	12	12	N/A	12	12	1	12	12	12	12	12	121	132	91.7		
401	EL235	NE	NE	NE	NE	NE	NE	0	0	0	0	0	0	0	72	0.0		
411	EL344	NE	12	12	N/A	12	7	1	12	12	12	12	12	104	120	86.7		
415	L278	11	12	1	N/A	12	12	12	12	12	12	12	12	120	132	90.9		
421	EL316	12	8	12	N/A	12	12	1	9	1	0	0	0	67	132	50.8	<ul style="list-style-type: none"> • Incorrect serogroup was reported for G61B. • Count reported was higher than expected range for G61B. • <i>Legionella</i> sp. was not detected for G63A. • Count reported was lower than expected range for G63B. • <i>L.bozemanii</i> was not reported for G63B. • Incorrect result was reported for G63C. • No report was returned for distribution G64. 	
422	EL131	12	12	12	N/A	12	10	10	12	12	10	12	10	124	132	93.9		
445	EL342	12	12	12	N/A	12	1	12	11	12	0	0	0	84	132	63.6	<ul style="list-style-type: none"> • <i>Legionella</i> sp. was not detected for G62A and G62C. • <i>L.bozemanii</i> was not reported for G63B. • No report was returned for distribution G64. 	
446	EL362	NE	NE	NE	N/A	12	12	1	11	12	12	10	10	80	96	83.3		
463	EL54	12	12	12	N/A	12	5	1	9	12	10	12	12	109	132	82.6		
473	L77	12	12	12	N/A	3	1	12	12	12	12	12	12	112	132	84.8		
483	EL190	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100		
530	EL380	NE	NE	NE	NE	NE	NE	1	12	12	0	0	0	25	72	34.7		
532	L290	NE	NE	NE	NE	NE	NE	12	12	12	12	12	12	72	72	100		
546	EL216	12	12	10	N/A	12	12	12	12	12	12	12	12	130	132	98.5		
590	EL206	10	1	12	N/A	12	10	5	9	12	12	12	12	107	132	81.1		

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**

NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%	
		A	B	C	A	B	C	A	B	C	A	B	C				
684	EL191	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
700	L289	NE	NE	NE	NE	NE	NE	12	9	12	12	12	12	69	72	95.8	
717	EL145	12	12	12	N/A	12	12	12	9	12	12	12	12	129	132	97.7	
747	EL71	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
786	EL188	12	12	12	N/A	12	1	12	12	12	10	12	12	119	132	90.2	
789	EL155	NE	NE	NE	N/A	12	12	NE	NE	NE	12	12	12	60	60	100	
825	825	NE	NE	NE	NE	NE	NE	NE	NE	NE	11	12	12	35	36	97.2	
854	EL336	12	10	12	NE	NE	NE	1	9	12	12	10	12	90	108	83.3	
858	EL143	12	12	10	N/A	0	0	1	11	12	0	0	0	58	132	43.9	<ul style="list-style-type: none"> Count reported was higher than expected range for G61C. No reports were returned for distributions G62 and G64. <i>Legionella</i> sp. was not detected for G63A. <i>L.bozemanii</i> was not reported for G63B.
877	EL89	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
901	EL1	12	10	12	N/A	12	12	12	12	12	12	12	12	130	132	98.5	
903	EL114	NE	NE	NE	N/A	2	6	NE	NE	NE	6	7	9	30	60	50.0	
904	EL119	NE	NE	NE	NE	NE	NE	12	12	12	12	12	12	72	72	100	
905	EL124	12	12	12	N/A	0	12	6	12	12	12	12	12	114	132	86.4	
908	EL136	12	10	12	N/A	12	12	12	10	12	12	12	11	127	132	96.2	
909	EL14	0	0	0	N/A	12	12	12	11	12	12	12	11	94	132	71.2	
910	EL146	10	12	12	N/A	12	12	1	12	12	0	0	0	83	132	62.9	<ul style="list-style-type: none"> Count reported was higher than expected range for G61A. <i>Legionella</i> sp. was not detected for G63A. No report was returned for distribution G64.
914	EL158	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
915	EL16	12	12	12	N/A	12	12	1	11	12	12	12	12	120	132	90.9	

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**

NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%	
		A	B	C	A	B	C	A	B	C	A	B	C				
919	EL176	12	12	12	N/A	12	12	1	12	12	0	0	0	85	132	64.4	<ul style="list-style-type: none"> • <i>Legionella</i> sp. was not detected for G63A. • No report was returned for distribution G64.
921	EL185	12	12	12	N/A	12	12	10	12	12	12	12	12	130	132	98.5	
922	EL187	12	12	11	N/A	NE	NE	NE	NE	NE	12	12	12	71	72	98.6	
923	EL196	12	12	12	N/A	12	10	12	9	1	11	12	12	115	132	87.1	
925	EL209	10	1	10	NE	NE	NE	NE	NE	NE	12	12	12	57	72	79.2	
926	EL21	0	0	0	N/A	12	10	12	12	12	12	12	12	94	132	71.2	
927	EL210	10	12	10	N/A	12	12	1	12	12	12	12	12	117	132	88.6	
928	EL213	12	12	12	N/A	12	12	0	0	0	12	12	10	94	132	71.2	
929	EL214	10	10	10	N/A	12	10	0	0	0	12	10	12	86	132	65.2	<ul style="list-style-type: none"> • <i>L.pneumophila</i> was not reported for any G61 samples. • Count reported was lower than expected range for G62C. • Count reported was higher than expected range for G64B. • No report was returned for distribution G63.
930	EL218	1	1	12	N/A	12	12	1	10	12	10	10	12	93	132	70.5	
931	EL22	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
932	EL221	NE	NE	NE	NE	NE	NE	12	11	12	12	12	12	71	72	98.6	
933	EL225	12	1	12	N/A	12	11	1	12	12	12	12	12	109	132	82.6	
935	EL227	12	12	12	NE	NE	NE	NE	NE	NE	12	11	12	71	72	98.6	
936	EL230	5	12	5	N/A	12	12	12	9	12	10	10	10	109	132	82.6	
937	EL231	12	12	10	N/A	12	12	12	12	12	12	12	12	130	132	98.5	
938	EL24	12	12	12	N/A	12	12	8	12	12	12	12	12	128	132	97.0	
940	EL250	1	12	12	N/A	12	11	1	9	12	1	1	1	73	132	55.3	<ul style="list-style-type: none"> • <i>Legionella</i> sp. was not detected for G61A, G63A and any G64 samples. • Counts reported were lower than expected range for G62C & G63B. • <i>L.bozemanii</i> was not reported for G63B.

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**

NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%	
		A	B	C	A	B	C	A	B	C	A	B	C				
942	EL30	12	12	12	N/A	12	10	12	12	12	12	12	12	130	132	98.5	
944	EL306	10	12	10	N/A	12	10	10	12	12	12	12	12	124	132	93.9	
953	EL317	12	12	12	N/A	12	12	12	10	12	8	12	12	126	132	95.5	
955	EL320	1	12	12	N/A	3	1	1	11	12	10	1	1	65.3	132	49.5	<ul style="list-style-type: none"> • <i>Legionella</i> sp. was not detected for G61A, G62C, G63A, G64B and G64C. • Incorrect result was reported for G62B. • Count reported was lower than expected range for G64A. • <i>L.bozemanii</i> was not reported for G63B.
958	EL324	0	0	0	N/A	12	12	12	11	12	0	0	0	59	132	44.7	<ul style="list-style-type: none"> • No reports were returned for distributions G61 and G64. • <i>L.bozemanii</i> was not reported for G63B.
959	EL326	12	12	12	N/A	12	10	12	12	12	12	12	12	130	132	98.5	
964	EL339	8	10	10	NE	NE	NE	7	9	12	11	8	8	83	108	76.9	
972	EL35	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
979	EL36	NE	NE	NE	N/A	12	10	NE	NE	NE	12	11	12	57	60	95.0	
981	EL364	NE	NE	NE	N/A	12	1	1	12	12	12	1	12	63	96	65.6	
985	985	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	12	12	36	36	100	
989	EL375	NE	NE	NE	NE	NE	NE	1	9	12	12	12	12	58	72	80.6	
991	EL378	NE	NE	NE	NE	NE	NE	12	10	12	0	0	0	34	72	47.2	
992	EL381	NE	NE	NE	NE	NE	NE	10	9	12	12	12	11	66	72	91.7	
993	EL382	NE	NE	NE	NE	NE	NE	1	1	1	3	6	1	13	72	18.1	
995	EL40	10	12	10	N/A	12	12	12	12	12	10	12	12	126	132	95.5	
997	EL42	11	12	12	N/A	0	0	12	10	12	12	12	12	105	132	79.5	
998	EL43	1	1	1	N/A	0	0	1	1	12	6	6	6	35	132	26.5	<ul style="list-style-type: none"> • <i>Legionella</i> sp. was not detected for all G61 samples, G63A and G63B. • No report was returned for distribution G62. • Isolation of <i>Legionella</i> and <i>Legionella</i> sp. was not reported for all G64 samples.
1000	EL49	NE	NE	NE	N/A	12	1	NE	NE	NE	12	12	12	49	60	81.7	

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**

NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%	
		A	B	C	A	B	C	A	B	C	A	B	C				
1001	EL5	12	12	12	N/A	12	10	11	9	12	11	10	10	121	132	91.7	
1003	EL57	0	0	0	N/A	12	12	NE	NE	NE	11	12	12	59	96	61.5	
1004	EL60	8	8	8	N/A	12	1	12	12	12	10	10	12	105	132	79.5	
1005	EL63	8	10	11	N/A	NE	NE	12	12	12	12	12	12	101	108	93.5	
1006	EL64	12	12	12	N/A	12	12	12	12	12	0	0	0	96	132	72.7	
1007	EL65	11	12	11	N/A	12	12	10	12	12	0	0	0	92	132	69.7	<ul style="list-style-type: none"> Counts reported were lower than expected range for G61A and G61C. Count reported was higher than expected range for G63A. No report was returned for distribution G64.
1009	L102	0	0	0	N/A	0	0	0	0	0	0	0	0	0	132	0.0	<ul style="list-style-type: none"> No reports were returned for distributions G61, G62, G63 and G64.
1010	L103	12	12	12	N/A	12	12	5	9	12	12	12	12	122	132	92.4	
1012	L13	NE	NE	NE	N/A	NE	NE	NE	NE	NE	1	1	12	14	36	38.9	
1013	L175	12	12	12	N/A	3	8	12	12	12	11	12	12	118.25	132	89.6	
1014	L197	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1015	L251	12	1	12	N/A	12	12	12	12	12	12	12	12	121	132	91.7	
1016	L26	NE	NE	NE	N/A	12	12	11	12	12	12	12	12	95	96	99.0	
1017	L274	0	0	0	N/A	0	0	1	9	1	0	0	0	11	132	8.3	<ul style="list-style-type: none"> <i>Legionella</i> sp. was not detected for G63A. <i>L.pneumophila</i> and serogroup one was not detected for G63B. Incorrect result was reported for G63C. No reports were returned for distributions G61, G62 and G64.
1018	L275	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1019	L276	8	8	8	N/A	8	8	8	8	8	8	8	8	88	88	100	
1020	L277	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1022	L281	NE	NE	NE	NE	NE	NE	0	0	0	0	0	0	0	72	0.0	
1023	L285	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1024	L287	7	7	7	N/A	7	1	1	7	7	7	7	7	65	77	84.4	

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**

NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%	
		A	B	C	A	B	C	A	B	C	A	B	C				
1029	L80	8	12	12	N/A	12	12	12	12	12	12	12	12	128	132	97.0	
1041	EL178	12	12	12	N/A	12	1	10	7	12	12	10	11	111	132	84.1	
1053	EL363	NE	NE	NE	N/A	12	12	12	12	12	12	12	12	96	96	100	
1059	EL6	10	12	12	N/A	12	1	12	12	12	12	12	12	119	132	90.2	
1060	EL66	12	12	12	N/A	12	12	12	12	12	12	11	10	129	132	97.7	
1063	EL86	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1072	L47	10	12	12	N/A	12	12	12	12	12	12	12	12	130	132	98.5	
1154	L59	12	12	12	N/A	12	12	1	11	12	12	11	11	118	132	89.4	
1155	L273	12	12	12	N/A	12	12	12	12	12	8	9	12	125	132	94.7	
1159	L172	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1160	L94	12	12	12	N/A	12	12	11	11	12	12	12	12	130	132	98.5	
1161	L89	12	12	12	N/A	12	1	11	12	12	12	12	12	120	132	90.9	
1162	L254	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1174	EL170	0	0	0	N/A	12	12	12	12	12	8	12	12	92	132	69.7	<ul style="list-style-type: none"> No report was returned for distribution G61. Incorrect species was reported for G64A.
1177	EL72	NE	NE	NE	NE	NE	NE	12	12	12	12	12	12	72	72	100	
1187	L252	12	12	12	N/A	12	12	1	11	12	12	11	12	119	132	90.2	
1204	EL53	12	12	10	N/A	12	12	11	12	12	0	0	0	93	132	70.5	
1205	EL107	12	10	12	N/A	12	12	12	9	12	12	12	12	127	132	96.2	
1212	EL174	11	10	12	N/A	12	12	12	9	12	12	10	12	124	132	93.9	
1214	EL222	12	12	11	N/A	12	11	10	12	12	12	12	12	128	132	97.0	
1215	EL223	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1216	EL258	1	6	8	N/A	8	1	1	8	8	7	8	8	64	88	72.7	
1217	EL302	1	1	12	N/A	0	0	0	0	0	0	0	0	14	132	10.6	<ul style="list-style-type: none"> <i>Legionella</i> sp. was not detected for G61A and G61B. No reports were returned for distribution G62, G63 and G64.
1219	EL34	12	12	12	N/A	12	12	10	12	12	12	12	12	130	132	98.5	
1220	EL370	NE	NE	NE	N/A	12	12	12	12	12	0	0	0	60	96	62.5	

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**

NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%	
		A	B	C	A	B	C	A	B	C	A	B	C				
1222	EL51	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1223	EL61	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1224	L104	12	12	12	N/A	12	12	12	12	12	8	12	12	128	132	97.0	
1225	L109	12	12	10	N/A	12	10	12	12	12	12	12	12	128	132	97.0	
1226	L112	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1227	L12	12	12	12	N/A	12	12	5	12	12	12	12	11	124	132	93.9	
1228	L132	11	12	12	N/A	12	1	NE	NE	NE	10	12	12	82	96	85.4	
1229	L147	8	8	1	N/A	12	12	1	10	12	12	12	12	100	132	75.8	
1230	L226	12	12	12	N/A	12	1	12	12	12	12	12	12	121	132	91.7	
1232	L249	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1233	L259	12	12	12	N/A	0	0	10	10	1	10	10	11	88	132	66.7	<ul style="list-style-type: none"> • No report was returned for distribution G62. • Counts reported were higher than expected range for G63A and G63B. • Incorrect result was reported for G63C. • Counts reported were lower than expected range for all G64 samples.
1234	L279	12	12	12	N/A	12	12	11	12	12	12	12	12	131	132	99.2	
1235	L286	12	12	12	N/A	12	1	0	0	0	12	12	12	85	132	64.4	<ul style="list-style-type: none"> • <i>Legionella</i> sp. was not detected for G62C. • No report was returned for distribution G63.
1236	L56	11	12	12	N/A	12	12	12	12	12	12	12	12	131	132	99.2	
1237	L70	12	12	12	N/A	12	12	12	9	12	12	12	12	129	132	97.7	
1238	L71	12	12	12	N/A	12	12	1	9	12	12	12	12	118	132	89.4	
1239	L74	12	12	12	N/A	12	12	12	12	12	12	12	12	132	132	100	
1241	L82	11	12	12	N/A	12	9	1	12	12	12	12	12	117	132	88.6	
1246	EL192	12	12	12	N/A	12	12	12	12	12	0	0	0	96	132	72.7	
1249	EL92	1	1	12	N/A	3	12	8	12	12	12	12	12	97.1	132	73.6	
1258	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	12	12	36	36	100	
1260	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	10	1	10	21	36	58.3	

Table 1 (cont'd): Performance assessment for *Legionella* isolation for samples **G61 – G64**
 NE = not examined, N/A = not applicable

Lab number	Previous Lab number	G61			G62			G63			G64			Cumulative score	Max possible score	%
		A	B	C	A	B	C	A	B	C	A	B	C			
1262	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	0	0	0	0	36	0.0
1263	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	7	1	1	9	36	25.0
1265	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	1	12	25	36	69.4
1267	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	11	12	35	36	97.2
1271	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	10	10	10	30	36	83.3
1275	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	12	12	36	36	100
1284	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	12	12	36	36	100
1285	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	12	12	36	36	100
1286	n/a	NE	NE	NE	NE	NE	NE	NE	NE	NE	12	12	7	31	36	86.1

Troubleshooting

Checklist for Quality:

- 1. Methods**
Are you using standard or validated, clearly documented methods for isolation, identification and enumeration of Legionella spp.?
- 2. Culture media**
Is your culture media allowing optimal isolation of Legionella spp.? Do you have sufficiently challenging quality control procedures for your culture media?
- 3. Control strains**
Do you use control strains, at appropriate levels, for all the processing procedures?
- 4. Processing**
*Is the percentage recovery of legionellae as expected following heat and acid treatments?
Do you undertake trend analyses for these processes? Are you aware of the limitations of the method used?*
- 5. Equipment**
Is all the equipment used for the procedures (incubators, refrigerators, measuring instruments, waterbaths etc.) calibrated and monitored regularly?
- 6. Staff Training**
Are the staff who perform the examinations fully trained and familiar with all the procedural steps?
- 7. Internal Quality Control (IQC)**
Do you have adequate IQC procedures in place with documented guidelines for dealing with IQC failures?
- 8. Good Laboratory Practice (GLP)**
*Do staff adhere to GLP at all times?
If cross-contamination has occurred with EQA samples it can also occur with routine water samples.*
- 9. Clerical Procedures**
*Are your laboratory numbering and clerical procedures adequate?
If you have reported EQA results incorrectly this may also happen with routine water samples*

Identification of *Legionella* spp.

There are at least 50 species of *Legionella* of which at least 20 have been associated with human disease. The species that is most commonly isolated both from the environment and from infections is *L.pneumophila*; this species can be divided into at least 16 serogroups on the basis of surface antigens. *L.pneumophila* serogroup 1 is the most common cause of outbreaks of Legionnaires' disease and, within serogroup 1, the strains most commonly associated with disease share a common epitope, as revealed by monoclonal subtyping. It is important, because of the risks to human health, to differentiate routinely between *L.pneumophila* and the other *Legionella* species and to be able to distinguish serogroup 1 from the other serogroups of *L.pneumophila*. However, monoclonal subtyping is normally performed only by specialist reference laboratories. Participants who do not identify *Legionella* spp. other than *L.pneumophila* should, where appropriate, report their results as '*Legionella* sp. not *L.pneumophila*' rather than '*Legionella* sp.'

Incomplete or misleading identification of *Legionella* spp. from water samples may have serious public health implications. Correct reporting of the serogroup is essential for outbreak investigations.

False Positive Results - *Legionella* sp. reported incorrectly as present

False positive results may arise due to cross-contamination, either from other test samples or control strains, mis-identification of background micro-organisms that are present in the sample, or sample-handling and clerical errors. False positive results may result in unnecessary treatment of the water-source with serious financial implications.

False Negative Results - *Legionella* sp. reported incorrectly as not detected

There are many reasons for false negative results including failures with processing, culture media or equipment, insufficiently sensitive methods, inadequately trained staff or sample-handling or clerical errors. False negative results may have serious public health implications.

Outlying Results for Enumerations

Outlying results may be due to errors such as preparation of dilutions, selectivity of culture media, errors in counting, mis-calculation, mis-identification, mis-reporting or sample-handling or clerical errors. Laboratories are advised to investigate the reasons for any anomalous results, particularly if they are occurring repeatedly. Participants who report consistently low levels should audit all stages of their procedure that might allow organisms to be lost, e.g. filtration, centrifugation and pre-treatment. Participants reporting consistently high counts should assess their identification processes but should consider also whether they use methods that differ from those used by the majority of other participants. Incorrect results for enumerations can give a misleading impression of the severity of the risk associated with the sample.

Repeat Samples

Participants should, where possible, determine the reason(s) for mis-identification, false positive and false negative results and outlying counts for enumerations. Repeat samples should be requested to ensure that causes of error have been eradicated. Repeat samples are free of charge, provided they are dispatched with the next distribution of samples. A handling fee will be charged for immediate dispatch.

Help and Advice

The Scheme Organisers will help participants to resolve issues relating to the testing of environmental water samples for *Legionella* spp. Participants should also contact FEPTU to discuss any issues relating to the schemes in general, data analysis or performance assessments.

Contact Details

Repeat samples

Agnes Byron, Carmen Gomes
and Nic Day

Tel: +44 (0)20 8327 7119

Data analysis

Heena Shah or Dr Nicola Lang

Fax: +44 (0)20 8200 8264

Microbiological advice

Dr Nicola Lang or Julie Russell

E-mail: legionellaeqa@hpa.org.uk

General comments and complaints

Dr Nicola Lang or Julie Russell

Scheme Consultant

Dr John V. Lee