



C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

Last Altered:	February 20, 2016 10:27:04 AM Eastern Standard Time
Printed:	February 20, 2016 10:30:25 AM Eastern Standard Time

ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016 Time: 23:28:36

Total HxCB F6 M2160218DS007 Smooth(SG,3x1) F6:SIR of 14 channels.EI+ PCB 156/157 100-359.8415 30.68 1.289e+005 15621 PCB 167 29.53 7168 %-32.13 L 28.49 29.76 2415 29.15 33.45 34.09 n 29.00 min 30.00 31.00 32.00 33.00 34.00 35.00 **Total HxCB F6** M2160218DS007 Smooth(SG,3x1)





Total HxCB labeled F6



32.00

33.00

34.00

31.00

Total HxCB labeled F6



AutoSpec - Ultima 3

35.00

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20,	2016	10:27:04 AM	Eastern	Standard -	Time
Printed:	February 20.	2016	10:30:25 AM	Fastern	Standard -	Timo
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ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016 Time: 23:28:36

Total HpCB F5





Total HpCB labeled F5



Total HpCB labeled F5







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ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016 Time: 23:28:36



AutoSpec - Ultima 3

29.00

30.00

31.00

32.00

33.00

34.00

35.00



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ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016



Total NoCB F7



Total NoCB labeled F7



Total NoCB labeled F7



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D samples 1668A.gld

Last Altered: February 20, 2016 10:27:04 AM Eastern Standard Time Printed: February 20, 2016 10:30:25 AM Eastern Standard Time

ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016

Time: 23:28:36

Total DeCB F7 6 M2160218DS007 Smooth(SG,3x1) F7:SIR of 18 channels.EI+ 43.53 100 1.010e+003 % 42.96 43.19 38.86 40.10 40.44 45.76 37.96 38.49 36.29 36.79 45 41 37.37 44.52 41.65 0 37.0 38.0 39.0 36.0 40.0 41.0 42.0 43.0 44.0 45.0









Total DeCB labeled F7



AutoSpec - Ultima 3

497.6826

🦳 min

46.0

Last Altered:	February 20,	2016	10:27:04 AN	Eastern	Standard '	Time
Printed:	February 20,	2016	10:30:25 AM	Eastern	Standard ⁻	Time

ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016 Time: 23:28:36

lockmass F1



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20,	2016	10:27:04	AM	Eastern	Standard	Time
Printed:	February 20,	2016	10:30:25	AM	Eastern	Standard	Time

ID: Anchor QEA, PG-SMA2-2-MUS-COC-16010, Ti Description: BRP508-01R Vial: 7 Date: 18-FEB-2016 Time: 23:28:36

lockmass F5



lockmass F6

M2160218DS007 Smoo	oth(SG,3x1)					F6:SIR of 14 of	channels,El+
100	lockmass F6;30.17;6	067 lockmass	F6;31.61;5078 lo	ckmass F6;33.07;1	1516		404.9760
-							
- %							
_							
0			Terrar from the submersion of				— min
29.00	30.00	31.00	32.00	33.00	34.00	35.00	

lockmass F7

18DS007 Smooth(SG,3x1)				F7:	SIR of 18 char	nels,El+
lockmass F7;37.23;100	097	lockma	ass F7;40.99;11408	lockmass F7	;43.51;4048	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	154.9728 27e+005
	·						
0 37.0 3	38.0 39.0	40.0	41.0 42.	0 43.0	44.0	45.0	⊷ min 46.0
	18DS007 Smooth(SG,331 lockmass F7;37.23;10	18DS007 Smooth(SG,3x1) lockmass F7;37.23;10097	18DS007 Smooth(SG,3x1) lockmass F7;37.23;10097 0 37.0 38.0 39.0 40.0	18DS007 Smooth(SG,3x1) lockmass F7;37.23;10097 lockmass F7;40.99;11408 0 37.0 38.0 39.0 40.0 41.0 42.	18DS007 Smooth(SG,3x1) lockmass F7;40.99;11408 lockmass F7 10ckmass F7;37.23;10097 lockmass F7;40.99;11408 lockmass F7 0 37.0 38.0 39.0 40.0 41.0 42.0 43.0	18DS007 Smooth(SG,3x1) F7 lockmass F7;37.23;10097 lockmass F7;40.99;11408 lockmass F7;43.51;4048 0 37.0 38.0 39.0 40.0 41.0 42.0 43.0	18DS007 Smooth(SG,3x1) F7:SIR of 18 char lockmass F7;37.23;10097 lockmass F7;40.99;11408 lockmass F7:43.51;4048 lockmass F7:43.51;4048 0 37.0 38.0 39.0 40.0 41.0 42.0 43.0 44.0 45.0





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Maxxam Analytics

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Filename M2160218DS008 Acquired 18/02/2016 0:18

Cali File M2160218D_209

Sample ID BRP509-01R Comments Instrument File Ultima 3 Sample Size 10.142

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Dil Fac 1.00

Nama								Isomers					
1 PCB 1	mas 188	ss RT NotFnd	Area	ratio *	Tot Are	a ng -0.00063	Code	loomera	DL -0.00063	S/N	Mod	rrf 1.092	Rec
2 PCB 2	NOCB 190 188 McCB 100	8.98 NotFnd	*	no *	*	-0.00057			-0.00057	*	10	1.002	-
3 PCB 3	188 MaCB 100	10.10 NotFnd	*	no *	*	-0.00063			-0.00063	*	0	1.2	-
4 PCB 4	222 222	NotFnd	*	no *	*	-0.00248			-0.00248	*	00	0.054	-
5 PCB 10	DICB 224 222	10.29 NotFnd	*	no *	*	-0.00192			-0.00192	*	10	0.954	-
6 PCB 9	DICB 224 222	10.36 NotFnd	*	no *	*	-0.00291			-0.00204	*	110	1.229	-
7 PCB 7	DiCB 224 222	11.18 NotFnd	*	no *	*	-0.00327			0.00291	*	по	1.311	-
8 PCB 6	DiCB 224 222	11.26 NotFnd	*	no *	*	-0.00280			-0.00327	*	no	1.165	-
9 PCB 5	DICB 224 222	11.34 NotFnd	*	no *	*	-0.00387			-0.00289	*	no	1.319	-
10 PCB 8	DiCB 224 222	11.50 11.55	* 6360	no 1.63	10254	0.007019			-0.00387	*	no	0.983	-
11 PCB 14	DiCB 224 222	11.55 NotFnd	3894	yes *	*	0.00000			-0.00262	62 6	no	1.456	-
12 PCB 11	DiCB 224 222	12.26 12.64	* 5181	no 1 35	0020	0.00288			-0.00286	*	no	1.332	-
13 PCB 13/12	DICB 224	12.66 NotEnd	3848	yes	9029	0.007005			-0.00296	34 4	no	1.285	-
14 PCB 15	DiCB 224	12.81	*	no 1 52	05007	-0.00315			-0.00315	*	no	1.21	-
15 PCB 19	DICB 224	12.96	10160	yes	25627	0.019415			-0.00437	112 11	no	0.871	-
16 PCB 30/18	TriCB 258	11.70	968	yes	2024	0.004135			-0.00118	20 17	yes	0.899	-
17 PCB 17	TriCB 258	12.49	12597	1.08 yes	26200	0.028935			-0.0013	244 236	no	0.813	-
18 PCB 27	TriCB 258	12.69	2824 2949	0.96 yes	5773	0.007593			-0.00155	42 47	no	0.683	-
19 PCB 24	TriCB 258	12.78	2469 2541	0.97 yes	5010	0.004491			-0.00106	41 45	yes	1.002	-
20 PCB 16	TriCB 258	12.87	280 377	0.74 no	657	-0.00124			-0.00124	*	yes	0.855	-
21 PCP 32	TriCB 258	12.91 12.90	4177 3870	1.08 yes	8047	0.014439			-0.00211	69 62	yes	0.501	-
22 000 34	TriCB 258	13.14 13.13	-4304.56 -4139	1.04 OK	-8443.56	-0.00698	PCB 32 NDR		-0.00097	75 69	хĻ	1.093	-
22 FOD 04	TriCB 258	NotFnd 13.74	*	* no	*	-0.00122			-0.00122	*	no	1.235	-
20 FOB 20	TriCB 258	NotFnd 13.82	*	* no	*	-0.00145			-0.00145	*	no	1.033	-
24 FGD 20/29	TriCB 258	13.97 13.99	11730 11298	1.04 yes	23029	0.01694			0.00123	50	no	1.221	-
20 PGB 20	TriCB 258	14.10 14.10	5454 5763	0.95 yes	11216	0.007552		-	0.00113	23 25	no	1.334	-
27 PCP 28/20	TriCB 258	14.26 14.26	57835 56349	1.03 yes	114185	0.076819		-	0.00113	246 245	no	1.335	-
27 FCB 20/20	256 TriCB 258	14.42 14.43	154634 150530	1.03 yes	305164	0.230263		-	0.00126	630	no	1.191	-
20 PCD 21/33	TriCB 258	14.55 14.53	28482 27127	1.05 yes	55609	0.039798			-0.0012	108	no	1.255	-
20 000 22	TriCB 258	14.77 14.76	24766 24852	1 yes	49617	0.03955		-	0.00133	93	no	1.127	-
31 DCD 30	TriCB 258	NotFnd 15.60	*	* no	*	-0.00096		**	0.00096	*	no	1.57	-
32 DCD 20	TriCB 258	15.83 15.83	1086 1062	1.02 yes	2148	0.001462		1	0.00114	4 4	no	1.32	-
32 DOD 35	TriCB 258	NotFnd 16.18	*	* no	*	~0.00104		~().00104	*	no	1.438	-
33 FCB 33	TriCB 258	NotFnd 16.45	*	* no	*	-0.00094		-().00094	*	no	1.597	-
34 PCB 37	256 TriCB 258	16.70 16.70	21632 21566	1 yes	43198	0.028367		-().00166	77 80	no	0.906	-
36 DCD 52/50	290 TCB 292	NotFnd 13.08	*	* no	*	-0.00089		-(.00089	*	no	0.911	-
30 PCB 53/50	290 TCB 292	14.12 14.11	8382 10562	0.79 yes	18944	0.025703		~C	1.00186	57 54	no	0.654	-
37 FUD 45/51	290 TCB 292	14.48 14.49	5062 6377	0.79 yes	11439 (0.016046		-0	.00192	32	yes	0.633	-
30 000 50	290 TCB 292	14.64 14.64	2731 3616	0.75 yes	6347 (0.010177		-0	.00219	19 18	yes	0.554	-
	290 TCB 292	15.36 15.38	62919 78184	0.81 yes	141103 (0.150186		-0	.00146	397	no	0.834	-
70 FUD /3	290 TCB 292	NotFnd 15.46	*	* no	* .	0.00149		-0	.00149	*	no	0.813	-
42 DOD 00/10	290 TCB 292	15.52 15.52	2810 3897	0.72 yes	6707 0	0.011529		-0	.00235	18	no	0.516	-
42 PCB 69/49	290 TCB 292	15.65 15.64	27034 34213	0.79 yes	61247 0	.063877		-0.	.00143	179	no	0.851	-
										110			

43 PCB 48	290 TOP 202	15.83	15995	0.8	35945	0.047396		-0.0018	103	no	0.673	-
44 PCB 44/47/6	5 292	15.84 15.96	19950 60198	yes 0.79	13653	8 0 154778		0.00455	100		0.010	
45 PCB 59/62/7	TCB 292	15.98	76340	yes		0.10-1110		-0.00105	318 318	no	0.783	-
40 1 00 300201	TCB 290	16.16	8002 9743	0.82 ves	17745	0.015498		~0.00119	46	no	1.017	-
46 PCB 42	290	16.28	12062	0.77	27674	0.036047		-0.00178	43 71	no	0.682	
47 PCB 40/41/71	1 292	16.29	27396	yes 0.8	61777	0.075801		0.00480	72			
48 PCB 64	TCB 292	16.58	34381	yes				-0.00100	144	no	0.724	-
10 1 00 04	TCB 292	16.72	20437	0.81 ves	36913	0.035549		-0.00132	98	no	0.922	-
49 PCB 72	290	17.20	855	0.84	1874	0.001276		-0.00111	93 4	ves	1.304	-
50 PCB 68	290	NotFnd	1019	yes *	*	-0.00118		0.00119	4			
51 PCB 57	TCB 292	17.40 NotEnd	*	no				-0.00110	*	no	1.22	-
	TCB 292	17.68	*	no	•	-0.00118		-0.00118	*	no	1.221	-
52 PCB 58	290 TCB 292	NotFnd	*	*	*	-0.00139		-0.00139	*	no	1.035	-
53 PCB 67	290	17.95	1664	0.72	3979	0.002624		-0.00107	* 7	100	1 9 4 7	
54 PCB 63	TCB 292 290	17.94 18 13	2315 1513	yes	2490	0 000 170		0.00101	7	yes	1.347	-
	TCB 292	18.13	1975	yes	3469	0.002473		-0.00115	7	no	1.253	-
55 PCB 61/70/74	TCB 290	18.36 18.34	42761 54286	0.79	97046	0.077714		-0.0013	115	no	1.109	-
56 PCB 66	290	18.57	17489	0.72	41819	0.029906		-0.00116	113 69	no	1 2/1	
57 PCB 55	TCB 292 290	18.58 NotFnd	24329 *	yes *	*	-0.00144			69	110	1.241	-
59 DCD 50	TCB 292	18.71	*	no		~0.00144		-0.00144	*	no	0.998	-
36 FGB 56	290 TCB 292	19.05 19.05	2837 3622	0.78	6459	0.005761		-0.00145	12	no	0.995	-
59 PCB 60	290	19.21	2037	0.68	5042	0.004532		-0.00146	11 8	no	0.988	-
60 PCB 80	1CB 292 290	19.22 NotFnd	3005	yes *	*	-0.00118		0.00/10	9		0.000	
61 PCB 79	TCB 292	19.48	*	no		0.00110		-0.00118	*	no	1.224	-
01 - 05 75	TCB 290	NotFnd 20.61	*	* no	*	~0.00099		~0.00099	*	no	1.462	-
62 PCB 78	290 TCB 202	NotFnd	*	*	*	-0.00112		-0.00112	*	no	1.287	-
63 PCB 81	290	NotFnd	*	no *	*	~0.0014		0.0014	*			
64 PCB 77	TCB 292	21.43 NotEnd	*	no				~0.0014	*	no	1.027	-
0110011	TCB 292	21.87	*	no	*	-0.00134		-0.00134	*	no	1.077	-
65 PCB 104	326 PeCB 328	NotFnd	*	*	*	-0.00053		-0.00053	*	no	1.094	-
66 PCB 96	326	16.16	-704	1.55	-1158.19	-0.00113	PCB 96 NDR	-0.00067	*	vi	0.974	
67 PCB 103	PeCB 328 326	16.16 17 33	-454.194 926	OK	4 4 7 0	0.0047		5.56667	9	XL.	0.074	-
	PeCB 328	17.32	552	yes	14/0	0.0017		-0.00116	5	yes	0.739	-
68 PCB 94	326 PeCB 328	NotFnd 17.47	*	*	*	-0.00159		-0.00159	*	no	0.54	-
69 PCB 95	326	17.75	30377	1.63	49047	0.061039		-0.00126	* 157	no	0.683	
70 PCB 100/93/102	2/98 328	17.77 18.00	18670 3023	yes 1 58	1011	0.006794			148	110	0.000	-
71 DCD 89/04	PeCB 328	17.93	1919	yes	4341	0.000781		-0.00139	10 10	no	0.619	-
11 FCB 00/91	326 PeCB 328	18.34 18.31	2459 1427	1.72 Ves	3886	0.005282		-0.00137	12	no	0.625	-
72 PCB 84	326	18.50	3251	1.64	5228	0.008317		-0.00161	11 16	no	0.534	
73 PCB 89	326 S	18.50 NotFnd	1977	yes *	*	-0.00148		0.00470	15			
74 PCB 121	PeCB 328	18.84	*	no		0.00140		-0.00148	*	no	0.582	-
14 1 00 121	926 PeCB 328	NotFnd 19.08	*	* no	*	-0.00113		-0.00113	*	no	0.761	-
75 PCB 92	326	19.36	7020	1.53	11595	0.016479		-0.00144	33	no	0.598	-
76 PCB 113/90/101	326	19.35	4070 50700	yes 1.66	81207	0.09713		-0.00104	34		0.74	
77 PCB 83/99	PeCB 328 326	19.76	30506	yes	20000			-0.00121	233	110	0.71	-
70 000 115	PeCB 328	20.22	14923	yes	39086	0.053287		-0.00138	108 101	no	0.623	-
78 PCB 112	326 PeCB 328	NotFnd 20.33	*	*	*	-0.00105		-0.00105	*	no	0.819	-
79 PCB 109/119/86	/97/125/ 326	20.62	15086	1.5	25114	0.029374		-0.00118	*	no	0 726	
80 PCB 117/116/85	PeCB 328 326	20.62 21.19	10028 5762	yes	0265	0.000005			40	110	0.720	-
91 DCD 110/145	PeCB 328	21.23	3504	yes	3205	0.009895		-0.00108	23 24	no	0.796	-
01 FCB 110/115	326 PeCB 328	21.32 21.32	33792 20233	1.67 ves	54026	0.061227		-0.00114	146	no	0.75	-
82 PCB 82	326	21.58	1542	1.62	2496	0.003758		-0.00152	135 7	no	0.564	
83 PCB 111	326 328	21.59 NotFnd	954 *	yes *	*	-0.00106		0.00400	6		0.004	
84 PCB 120	PeCB 328	21.85	*	no		0.00100		-0.00106	*	no	0.809	- 1
ST I OD IZU	326 PeCB 328	1NOTH11d 22.24	*	no	*	-0.0009		-0.0009	*	no	0.951	-
85 PCB 108/124	326	23.20	1508	1.49	2524	0.001911		~0.00082	7	no	1.122	-
86 PCB 107	326	23.21 23.40	4926	yes 1.43	8366	0.006195		.0.000	8			
87 PCB 123	PeCB 328	23.39	3439	yes				-0.0008	19	yes	1.147	•
	PeCB 328	23.51	385	1.47 no	950	-0.00103		-0.00103	*	yes	0.894	-
88 PCB 106	326 PeCB 328	NotFnd	*	*	*	-0.00076		-0.00076	*	no	1.218	-
89 PCB 118	326	23.79	51322	1.57	84021	0.063602		~0 000a4	*	20	0.084	
	PeCB 328	23.80	32699	yes				0.00024	189	10	0.981	-

90 PCB 122	326	NotFnd	*	*	*	-0.00086	-0	00086	*	no	1 079	
91 PCB 114	PeCB 328 326	24.08 NotEnd	*	no *	*	0.00004			*	110	1.075	-
02 000 445	PeCB 328	24.28	*	no		-0.00091	-0	00091	*	no	1.01	-
92 PCB 105	326 PeCB 328	24.84 24.85	15765 10777	1.46	26542	0.020834	-0	00095	58	no	0.977	-
93 PCB 127	326	NotFnd	*	yes *	*	-0.00075	-0	00075	60 *	00	1 22	
94 PCB 126	PeCB 328 326	26.20 NotEnd	*	no *	*	0.00000		00010	*	110	1.25	-
05 000 455	PeCB 328	27.72	*	no		-0.00095	-0.	00095	*	no	0.977	-
95 PCB 155	360 HxCB 362	NotFnd	*	*	*	-0.00109	-0.	00109	*	no	0.997	-
96 PCB 152	360	NotFnd	*	*	*	-0.00133	-0	00133	*		0.912	
97 PCB 150	HxCB 362 360	19.78 NotEnd	*	no *		0.00107	-0.	00100	*	110	0.813	-
	HxCB 362	19.88	*	no		-0.00167	-0.	0167	*	no	0.65	-
98 PCB 136	360 HxCB 362	20.18 20.17	6387 5100	1.25	11486	0.013885	-0.	00142	38	no	0.761	-
99 PCB 145	360	NotFnd	*	yes *	*	-0.00164	_0	10164	37		0.000	
100 PCB 148	HxCB 362 360	20.41 NotEnd	*	no *	*	0.00400	0.	50104	*	110	0.002	-
	HxCB 362	21.55	*	no		~0.00196	-0.1	00196	*	no	0.551	-
101 PCB 151/135	360 HxCB 362	22.03 22.04	19295 13870	1.39	33165	0.058784	-0.	0209	89	no	0.519	-
102 PCB 154	360	22.22	1279	1.34	2232	0.003323	-n-	0175	80	20	0.010	
103 PCB 144	HxCB 362 360	22.21 22.51	953 2560	yes	4500	0.007470	0		7	10	0.010	-
	HxCB 362	22.51	2009	yes	4000	0.007476	-0.0	0193	14 14	yes	0.562	-
104 PCB 147/149	360 HxCB 362	22.79 22.80	59982 45743	1.31	105726	0.146885	-0.	0026	209	yes	0.662	-
105 PCB 134/143	360	22.97	1768	1.27	3158	0.004959	-0 (0294	191		0 596	
106 PCB 139/140	HxCB 362 360	23.06 NotEnd	1390	yes *	*	0.00050		0201	6	110	0.000	-
	HxCB 362	23.31	*	no		-0.00253	-0.0	0253	*	no	0.68	-
107 PCB 131	360 HxCB 362	NotFnd 23.49	*	*	*	-0.00321	-0.0	0321	ŵ	no	0.537	-
108 PCB 142	360	NotFnd	*	*	*	~0.00275	-0.0	0275	*	20	0.626	
109 PCB 132	HxCB 362 360	23.65 23.88	* 8647	no 1 22	45445	0.004000	0.0	0210	*	110	0.020	-
	HxCB 362	23.88	6498	yes	15145	0.024869	-0.0	0307	27	no	0.561	-
110 PCB 133	360 HxCB 362	24.31 24.31	1494	1.4	2562	0.003589	-0.0	0262	4	no	0.657	-
111 PCB 165	360	NotFnd	*	yes *	*	-0.00225	-0.0	0225	4 *	20	0.705	
112 PCB 146	HxCB 362 360	24.66 24.88	* 15436	no 1 22	29094	0.00007	0.0	02.20	*	110	0.765	-
110 000 101	HxCB 362	24.86	12648	yes	28084	0.03667	-0.0)244	46 47	no	0.705	-
113 PCB 161	360 HxCB 362	NotFnd 25.01	*	*	*	-0.00178	-0.0)178	*	no	0.97	-
114 PCB 153/168	360	25.43	134025	1.31	236031	0.25492	-0.0	1202	*		0.050	
115 PCB 141	HxCB 362 360	25.45 25.61	102005	yes	4000		010	2.01.	384	10	0.652	-
	HxCB 362	25.60	2182	yes	4860	0.006565	-0.0)253	7	no	0.681	-
116 PCB 130	360 HxCB 362	26.00 25.00	3338	1.37	5778	0.00862	-0.0	279	10	no	0.617	-
117 PCB 137	360	26.21	796	1.26	1427	-0.00284	-0.0	1284	10 *		0.007	
118 PCB 164	HxCB 362 360	26.19 26.30	631 2498	no	4640	0.004075	-0.0	204	*	yes	0.607	-
	HxCB 362	26.28	2120	yes	4618	0.004655	-0.00	189	7	yes	0.913	-
119 PCB 138/163/12	29 360 HxCB 362	26.59 26.60	96062	1.31	169524	0.221445	-0.00	244	269	no	0.705	-
120 PCB 160	360	NotFnd	*	yes *	*	-0.0021	-0 n	121	258 *	20	0.000	
121 PCB 158	HxCB 362 360	26.78 26.96	*	no 1 22	40004	0.044700	0.0		*	110	0.622	-
	HxCB 362	26.96	7203	yes	16084	0.014738	-0.00	172	25 26	no	1.004	-
122 PCB 128/166	360 HxCB 362	27.80 27.78	9771	1.23	17717	0.021071	-0.00	223	25	no	0.774	-
123 PCB 159	360	NotFnd	*	yes *	*	-0.00098	-0.00	098	24 *	no	1 170	
124 PCB 162	HxCB 362 360	28.76 NotEnd	*	no *	*	0.00105	-0.00		*	110	1.179	-
	HxCB 362	29.05	*	no		~0.00105	~0.00	105	*	no	1.101	-
120 PCB 167	360 HxCB 362	29.53 29.52	4568 3577	1.28	8145	0.006207	-0.00	122	17	no	0.946	-
126 PCB 156/157	360	30.68	8904	1.27	15920	0.011806	-0 00-	114	17 20	20	1 0 1 7	
127 PCB 169	HxCB 362 360	30.71 NotEnd	7016 *	yes *	*	0.00404	0.00		29	no	1.017	-
100 000 400	HxCB 362	34.11	*	no		-0.00121	-0.00	121	* .	no	0.954	-
128 PGB 188	394 HpCB 396	NotFnd 24 22	*	*	*	-0.00122	-0.00	122	*	no	1.012	-
129 PCB 179	394	24.52	8347	1.06	16218	0.017567	-0.00	118	* 44	no	1 047	
130 PCB 184	нрСВ 396 394	24.51 NotEnd	7871 *	yes *	*	-0.00400	-0.00		44	10	1.047	-
121 DCD 474	HpCB 396	25.00	*	no		-0.00129	-0.00	129	*	no	0.961	-
131 PCB 176	394 HpCB 396	25.32 25.31	2247 2173	1.03	4420	0.004881	-0.00	21	12	no	1.027	-
132 PCB 186	394	NotFnd	*	y c s *	*	-0.00138	~0 00·	38	12 *	no	0.800	
133 PCB 178	HpCB 396 394	25.75 27.01	*	no 1 11	7447	0.044000	-0.00		*	10	0.099	-
104 000 175	HpCB 396	27.01	3527	yes	/44/	0.011698	-0.001	72	20	no	0.722	-
134 PCB 175	394 HpCB 396	NotFnd 27.61	*	*	*	-0.00165	-0.001	65	*	no	0.753	-
135 PCB 187	394	27.87	24715	1.06	47937	0.07519	-0.001	71	* 124	00	0 722	
136 PCB 182	HpCB 396 394	27.88 NotEnd	23222	yes *	*	0.00460	-3.001		121	10	0.120	-
	HpCB 396	28.10	*	no		-0.00100	-0.001	66	*	no	0.747	-

137 PCB 183	394	28.48	16708	1.08	3216	1 0.031412		-0.00141	65	ves	1,162	_
138 PCB 185	HPCB 396 394	28.50 NotFnd	15453	yes *	*	-0.00103		0.00400	67	,		
120 000 474	HpCB 396	28.56	*	no		-0.00193		-0.00193	*	no	0.851	-
139 PCB 174	394 HpCB 396	NotFnd 28 72	*	*	*	-0.00169		~0.00169	*	no	0.97	-
140 PCB 177	394	29.16	12202	1.08	23548	3 0.028331		-0.00174	* 46	no	0.043	
141 PCB 181	HpCB 396 394	29.14 NotEnd	11345	yes *	*	0.00404			46	110	0.040	-
	HpCB 396	29.56	*	no		-0.00184		-0.00184	*	no	0.892	-
142 PCB 171/173	394 HpCB 396	29.78	6170 5856	1.05	12026	6 0.014388		-0.00173	25	no	0.948	-
143 PCB 172	394	NotFnd	*	yes *	*	-0.00173		-0.00173	24	20	0.05	
144 PCB 192	HpCB 396 394	31.42 NotEnd	*	no *	*	0.00454		0.00110	*	110	0.95	-
	HpCB 396	31.74	*	no		-0.00151		-0.00151	*	no	1.085	-
145 PCB 193/180	394 HpCB 396	32.13 32.06	34863 32730	1.07	67593	0.066898		-0.00119	129	no	1.383	-
146 PCB 191	394	NotFnd	*	yes *	*	-0.00121		-0.00121	129	no	1 350	
147 PCB 170	HpCB 396 394	32.47 33.45	* 5958	no 1 04	11677	0.014222			*		1.002	-
149 DCD 400	HpCB 396	33.45	5719	yes	110/7	0.0142.32		-0.00129	21 22	no	1.271	-
146 PCB 190	394 HpCB 396	34.02 34.01	4150 3733	1.11 ves	7883	0.006651		-0.00122	15	no	1.345	-
149 PCB 189	394	36.86	1359	1.09	2602	0.001922		-0.00036	14 14	no	0 944	
150 PCB 202	нрСВ 396 428	36.88 29.28	1243 -1833.4	yes 0.89	-3893 4	1 -0.00601		6 00000	12		0.011	
151 BCB 201	OcCB 430	29.27	-2060	OK	0000.	0.00001	F GD 202 NDR	-0.00209	9	xL	0.988	-
151 FGB 201	428 OcCB 430	30.21 30.18	1019 1075	0.95 Ves	2094	0.002505		-0.00207	4	no	0.997	-
152 PCB 204	428 0000 428	NotFnd	*	*	*	-0.00215		-0.00215	4 *	no	0.962	
153 PCB 197	428 428	30.88 NotFnd	*	no *	*	-0.00236		0.00000	*			
154 PCB 200	OcCB 430	31.12	*	no		0.002.00		-0.00236	*	no	0.876	-
104 1 00 200	420 OcCB 430	31.23	*	no *	*	-0.00205		-0.00205	*	no	1.006	-
155 PCB 198/199	428	NotFnd	*	*	*	~0.00316		-0.00316	*	no	0.654	-
156 PCB 196	428	NotFnd	*	no *	*	-0.00306		-0.00308	*		0.074	
157 PCB 203	OcCB 430	34.90	*	no				-0.00308	*	no	0.674	-
	OcCB 430	35.12	1579	0.96 yes	3097	0.005604		-0.00313	6	no	0.659	-
158 PCB 195	428 OcCB 430	NotFnd	*	*	*	-0.00135		-0.00135	*	no	1.005	-
159 PCB 194	428	39.20	2354	0.95	4823	0.00527		-0.00124	*	20	1 001	
160 PCB 205	OcCB 430 428	39.19 NotEnd	2469	yes *	*	0.00404		0.00124	9	10	1.091	-
	OcCB 430	39.75	*	no		-0.00124		-0.00124	*	no	1.091	-
161 PCB 208	462 NoCB 464	NotFnd 36.30	*	*	*	-0.0027		~0.0027	*	no	1.023	-
162 PCB 207	462	NotFnd	*	*	*	-0.00209		-0.00209	*	00	1 32	
163 PCB 206	NoCB 464 462	37.32 NotEnd	*	no *	*	0.00260			*	no	1.52	-
101 000 000	NoCB 464	41.70	*	no		~0.00269		~0.00269	*	no	1.027	-
164 PCB 209	498 DCB 500	NotFnd 43.54	*	*	*	-0.00206		-0.00206	*	no	1.04	-
165 PCB 1L	200	8.98	173840	3.48	223776	0.148277		0	* 2948	no	0 824	75
166 PCB 3L	202	8.97 10.17	49936 164862	yes 3.58	210902	0 135062		2	429		0.024	10
	202	10.16	46041	yes		0.100002		U	2806 411	no	0.852	68
	234	10.28	60043 36619	1.64 ves	96662	0.097236		0	2801	no	0.543	49
168 PCB 15L	234	12.93	186622	1.66	299013	0.151924		0	3434 1927	no	1.074	77
169 PCB 19L	268	11.68	55173	yes 1.06	107389	0.101375		0.001	3893		0.570	
170 PCB 37L	270 268	11.65	52217	yes	224045			0.001	393	110	0.578	51
	270	16.68	162738	yes	331645	0.201882		0.001	466 838	no	1.987	102
171 PCB 54L	302 304	13.06 13.07	51957 63790	0.81	115746	0.107891		0	1310	no	1.297	55
172 PCB 81L	302	21.41	124040	0.8	278802	0.194		0	1913	20	1 720	00
173 PCB 77L	304 302	21.42 21.85	154762	yes	274044	0 405000		<u> </u>	2748	110	1.730	90
171 000 101	304	21.85	150990	yes	2/1011	0.195993		0	1134 2575	no	1.677	99
174 PCB 104L	338 340	15.92 15.93	73782 45644	1.62	119426	0.141277		0	4515	no	1.156	72
175 PCB 123L	338	23.49	167496	1.6	271933	0.192041		0	3241 2614	no	1 936	07
176 PCB 118L	340 338	23.50 23.77	104438 162275	yes 1.57	265426	0 100402			2834		1.000	51
177 DCD 444	340	23.76	103151	yes	200420	0.130402		U	2494 2719	no	1.906	97
177 PCB 114L	338 340	24.25 24.25	151783 94699	1.6 ves	246482	0.190073		0	2340	no	1.773	96
178 PCB 105L	338	24.82	157377	1.58	257278	0.193002		0	∠498 2372	no	1.822	98
179 PCB 126L	340 338	∠4.81 27.69	99901 155542	yes 1.63	250872	0.197622		0	2549			
180 PCB 1551	340	27.67	95330	yes				U	2167 2276	no	1.735	100
100 100 100L	372	19.61 19.61	7 4397 59583	1.25 ves	133980	0.128563		0	8425	no	1.404	65
181 PCB 167L	372	29.50	152966	1.27	273572	0.174629		0	1960	no	2.11	89
182 PCB 156L/157L	372	29.49 30.68	120606 293558	yes 1.28	522900	0.366614		0	2052		1 001	
183 PCB 169	374	30.69	229342	yes	40000-			U	3164	no	1.921	93
	374	34.06	80716	yes	188039	0.13426		0	1292 1289	no	1.886	68

184	PCB 188L	406 408	24.20 24.20	73749 67211	1.1 ves	140960	0.142805			0	4759	no	1.329	72
185	9 PCB 180L	406 408	32.09 32.09	74304 69815	1.06 Ves	144119	0.138807			0	2091	no	1.349	70
186	PCB 170L	406 408	33.41 33.42	66749 60563	1.1 ves	127312	0.14012			0	2549 1832	no	1.18	71
187	PCB 189L	406 408	36.84 36.83	144919 137929	1.05	282847	0.170297			0	3711	no	2.157	86
188	PCB 202L	440 442	29.25 29.27	61828 66682	0.93	128510	0.117593			0	2162	no	1.419	60
189	PCB 205L	440 442	39.71 39.73	97851 104514	0.94 Ves	202365	0.171647			0	3489 2462	no	1.531	87
190	PCB 208L	474 476	36.27 36.28	53494 68898	0.78 Ves	122391	0.139517			0	1955	no	1.139	71
191	PCB 206L	474 476	41.70 41.73	41747 49864	0.84 ves	91611	0.156658			0	1429	no	0.76	79
192	PCB 209L	510 512	43.54 43.53	45751 38084	1.2 ves	83835	0.150334			0	2969	no	0.724	76
193	PCB 28L PCB Cleanup Standard	268 270	14.40 14.43	205258 200431	1.02 ves	405689	0.240568			0.001	4004 654	no	2.039	110
194	PCB 111L PCB Cleanup Standard	338 340	21.83 21.84	129937 79734	1.63 ves	209671	0.213428			0	7751	no	1.343	98
195	PCB 178L PCB Cleanup Standard	406 408	26.98 26.97	54404 51846	1.05 ves	106250	0.19524			0	3278	no	0.733	89
196	PCB 31L PCB Audit Standard	268 270	NotFnd 14.26	*	* no	*				0.001	2000	no	1.934	
197	PCB 95L PCB Audit Standard	338 340	NotFnd 17.73	*	* no	*				0		no	0.946	
198	PCB 153L PCB Audit Standard	372 374	25.41 25.40	2518 1935	1.3 yes	4452	0.004894			0	79 91	no	1.225	2
199	PCB 9L PCB Recovery Standard	234 236	11.17 11.19	1242877 763991	1.63 yes	2006868	10.15679			-	14080 28874	no	-	-
200	PCB 52L PCB Recovery Standard	302 304	15.36 15.36	404683 501201	0.81 yes	905884	7.086131			-	6029 7912	no	-	-
201	PCB 101L PCB Recovery Standard	338 340	19.77 19.76	497075 304225	1.63 yes	801300	7.203416			-	31478 8131	no	-	-
202	PCB 138L PCB Recovery Standard	372 374	26.57 26.56	462859 350532	1.32 yes	813391	7.460174			-	17049	no	-	-
203	PCB 194L PCB Recovery Standard	440 442	39.18 39.17	407546 435858	0.94 yes	843404	7.702536			-	10409 5621	no	-	-
	Chlorobiphenyls						-0.00063		0	-0.00063				
	Dichlorobiphenyls						0.033439		3	-0.00437				
	Tetrachlorobinhenvis						0.500344		13	-0.00211				
	Pentachiorobinhenvis						0.766873		19	-0.00235				
	Hexachlorobinhenvis						0.446811	1	16	-0.00161				
	Hentachlorohinhenvis						0.850467	1	18	-0.00321				
	Octachlorobinhenvle						0.2/31/	1	11	-0.00193				
j	Nonachlorohinhenvis						0.013379		3	-0.00316				
	Decachlorobinhenvi						-0.0027		0	-0.0027				
í	PCB (total)						-0.00206		U	-0.00206				
							2.004400							

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February 20, 2016 11:26:26 AM Eastern Standard Time Last Altered: February 20, 2016 11:29:33 AM Eastern Standard Time Printed:



Total DiCB F1



Total DiCB F1







% 8.60 8.80 – min 9.00 9.20 9.40 9.60 9.80 10.00 10.20 10.40 10.60 10.80






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February 20, 2016 11:26:26 AM Eastern Standard Time Last Altered: Printed: February 20, 2016 11:29:33 AM Eastern Standard Time

ID: Anchor QEA, PG-PJ-1-MUS-COC-160104, Ti Description: BRP509-01R Vial: 8 Date: 18-FEB-2016 Time: 00:18:49

Total TeCB F2



Total TeCB F2



Total TeCB labeled F2

M2160218DS008 Smooth(SG,3x1) F2:SIR of 16 channels,EI+ 100 PCB 54L 301.9626 13.06 6.713e+005 51957 % 0 11.00 11.20 11.40 11.60 11.80 🖵 min 12.00 12.20 12.40 12.60 12.80 13.00 13.20 13.40 Total TeCB labeled F2 M2160218DS008 Smooth(SG,3x1)



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13.20

13.40

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 11:26:26 AM Eastern Standard TimePrinted:February 20, 2016 11:29:33 AM Eastern Standard Time



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Quantify Sample Report MassLynx 4.0 SP1 Page 9 of 23 Acquired Date Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Last Altered: February 20, 2016 11:26:26 AM Eastern Standard Time Printed: February 20, 2016 11:29:33 AM Eastern Standard Time ID: Anchor QEA, PG-PJ-1-MUS-COC-160104, Ti Description: BRP509-01R Vial: 8 Date: 18-FEB-2016 Time: 00:18:49 Xndr-**Total PeCB F3** M2160218DS008 Smooth(SG.3x1) F3:SIR of 14 channels,EI+ 100-PCB 96 325.8805 16.16 9.380e+003 704 % L 15.92 0 13.75 14.00 14.25 14.50 14.75 15.00 15.25 15.50 15.75 16.00 16.25 16.50 16.75 **Total PeCB F3** M2160218DS008 Smooth(SG,3x1) F3:SIR of 14 channels,EI+ 100 PCB 96 327.8775 16.16 6.682e+003 554 % C 13.75 14.00 14.25 14.50 min 14.75 15.00 15.25 15.50 15.75 16.00 16.25 16.50 16.75 **Total PeCB labeled F3** M2160218DS008 Smooth(SG,3x1)







C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset: Last Altered: February 20, 2016 11:26:26 AM Eastern Standard Time Printed: February 20, 2016 11:29:33 AM Eastern Standard Time ID: Anchor QEA, PG-PJ-1-MUS-COC-160104, Ti Description: BRP509-01R Vial: 8 Date: 18-FEB-2016 Time: 00:18:49 **Total PeCB F5** M2160218DS008 Smooth(SG,2x1) F5:SIR of 14 channels,EI+ PCB 118 100 325.8805 23.79 5.392e+005 51322 PCB 105 % 24.84 PCB 107 L 15765 23.40 25.43 22.79 26.60 4926 L L 3909 3139 n 23.00 — min 23.50 24.00 24.50 25.00 25.50 26.00 26.50 27.00 27.50 28.00 **Total PeCB F5** M2160218DS008 Smooth(SG,2x1) F5:SIR of 14 channels,EI+ PCB 118 100-327.8775 23.79 3.401e+005 32699 PCB 105 % 24.84 PCB 107 10777 23.40 25.43 22.79 26.59 3439 2464 2559 ſ min ---23.00 23.50 24.00 24.50 25.00 25.50 26.00 26.50 27.00 27.50 28.00 **Total PeCB labeled F5** M2160218DS008 Smooth(SG,3x1) F5:SIR of 14 channels,EI+ PCB 123L 100-PCB 118L 337.9207 23.49 PCB 105L 1.736e+006 23.77 167496 24.82 PCB 126L 162275 157377 27.69 155542 % 0 23.00 min 23.50 24.00 24.50 25.00 25.50 26.00 26.50 27.00 27.50 28.00 **Total PeCB labeled F5** M2160218DS008 Smooth(SG,3x1) PCB 105L F5:SIR of 14 channels,EI+ PCB 123L 24.82 PCB 118L 100-339.9178 23.49 99901 23.77 1.090e+006 104438 PCB 126L 103151 27.69 95330 %

AutoSpec - Ultima 3

23.00

0

23.50

24.00

24.50

25.00

25.50

26.00

26.50

27.00

Quantify Sample Report

Acquired Date

MassLynx 4.0 SP1

28.00

27.50

– min

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Total HxCB F4 M2160218DS008 Smooth(SG,3x1) F4:SIR of 14 channels,EI+ PCB 151/135 100-359.8415 22.03 1.691e+005 19295 PCB 136 20.18 % V 6387 PCB 144 22.51 L 2560 0 min 17.00 17.50 18.00 18.50 19.00 19.50 20.00 20.50 21.00 21.50 22.00 22.50

Total HxCB F4



Total HxCB labeled F4



Total HxCB labeled F4





Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

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ID: Anchor QEA, PG-PJ-1-MUS-COC-160104, Ti Description: BRP509-01R Vial: 8 Date: 18-FEB-2016 Time: 00:18:49

Total HxCB F6









Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 11:26:26 AM Eastern Standard TimePrinted:February 20, 2016 11:29:33 AM Eastern Standard Time

ID: Anchor QEA, PG-PJ-1-MUS-COC-160104, Ti Description: BRP509-01R Vial: 8 Date: 18-FEB-2016 Time: 00:18:49



29.00 30.00 31.00 32.00 33.00 34.00 35.00

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Filename M2160218DS009 Acquired 18/02/2016 1:09

Cali File M2160218D_209

Sample ID BRP510-01R Comments Instrument File Ultima 3 Sample Size 10.076

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Dil Fac 1.00

1	Name PCB 1	m 18	ass RT 38 NotFn	Area	ratio	Tot	Area		Isomore					
2	PCB 2	18 INDCB	0 8.98 8 NotEn	*	* no	•	-0.00062	Code	loomers	DL	S/N	N		
3	PCB 3	MoCB 19 18: MoCB 10:	0 10.10 ^B NotFnc	1 * * *	* no	*	-0.00056			-0.0006;	2 *	Mod no	rrf 1.082	Rec -
4 F	PCB 4	222) 10.19 NotEnd	*	no	*	~0.00062			-0.00056	3 * *	no	1.2	-
5 P	CB 10	DiCB 224 222	10.29	*	* no	*	~0.00257			~0.00062	*	no	1.079	_
6 P	СВ 9	DiCB 224	10.37	*	*	*	-0.002		-	-0.00257	*	по	0.954	-
7 PC	CB 7	DICB 224	11.18	*	*	*	-0.00327			-0.002	*	no	1 220	-
8 PC	B 6	DICB 224	NotFnd 11.26	*	*	*	-0.00369		-(0.00327	*	no	1.22.9	-
9 PC	В 5	DICB 224	11.36 11.34	1926	no 1.28	3435	-0.00205		-0	.00368	*	PO	1.311	-
10 PCE	38	DICB 222	NotFnd 11.50	*	no *	*	-0.00420		-0.	.00325	*		1.165	-
11 PCE	3 14	222 DICB 224	11.55 11.55	7721	no 1.37	13339	0.00430		-0.	00436	*	no Re	1.319	-
12 PCB	11	222 DICB 224	NotFnd 12.26	5618	yes *	*	0.009779		-0.(00295	*	110	0.983	-
13 PCB	13/10	222 DiCB 224	12.64 12.66	6882	no 1.37	11800	-0.00322		-0.0	0322	8	no	1.456	-
14 PCP	10/12	222 DICB 224	NotFnd	5009 *	yes *	*	0.009881		~0.0	0334	*	no	1.332	-
15 PCD	15	222 DICB 224	12.95	* 20403	no 1.38 -	-	-0.00355		-0.00	0355	5	no	1.285	-
16 PCP -	т Т	256 riCB 258	11.68	14795 1390	yes	5198	0.028358		-0.00	1403	*	no	1.21 .	-
10 PCB 3	0/18 Ti	256 riCB 258	12.49	1262 18728	yes	:652	0.005636		-0.00	215	12	no	0.871 -	
17 PCB 1	7 Tr	256 iCB 259	12.48 12.68	17529 3766 4	yes	5257	0.042919		~0.00		16 14	no	D.899 -	
18 PCB 27	Tri	256 ·	12.69 1 2.78	3248 3594	ves	013 0	0.009888		-0.002	1	95 93	no (.813 -	
19 PCB 24	Tric	256 N	l2.79 NotFnd	3839 y	.94 74 /es	33 0	.007142		-0.002	.o∠ 3 	33 33	no 0	.683 -	
20 PCB 16	Tric	256 1	2.87 2.91 f	*	10	, -().00226		0.001	93 <u>3</u> . 34	12 8	no 1.	002 -	
21 PCB 32	TriC	256 1: 256 1:	2.90 6 3.14 <u>5</u>	118 ye	06 125 es	82 0.0	024198		-0.0022	26 * *	•	no 0.	855 -	
22 PCB 34	Trio	256 No	3.14 50 DtFnd	588 ye	05 1168 Is	82 0.0	010291		~0.0038	5 51 48	1 3	no 0.8	501 _	
23 PCB 23	Trior	^B 258 13 256 No	.74 tFnd	* na	*	-0.	00089		-0.00176	6 58 54	· ·	no 1.0	93 _	
24 PCB 26/29	9 Trion	258 13. 256 13.	83 , 97 165	, * no	*	~0.(0107		-0.00089) *	r	1.2:	35 _	
25 PCB 25	TICB	258 13. 256 14.	99 154 10 704	34 yes	5 3165 ⁻	1 0.02	4955		-0.00107	*	n	0 1.03	3 _	
26 PCB 31	THCB	258 14.1 256 14.2	0 737	1.06 2 yes	15183	0.01	0957		~0.0009	95 91	no	0 1.22	1_	
27 PCB 28/20	TriCB	258 14.2 256 14.4	6 8277	7 1.01 75 yes	166542	0.12	009		-0.00083	46 45	nc	0 1.33	1_	
28 PCB 21/33	l riCB	258 14.4 256 14.5	³ 21526	10 1.03 ⁵³ yes	436973	0.353	405		-0.00083	503 505	no	1.335		
29 PCB 22	TriCB 2	258 14.53 256 14.75	3966 3925	5 1.01	78920	0.060	537		-0.00093	1255	no	1.191		
30 PCB 36	TriCB 2	14.76	34073 33671	3 1.01	67745	0.0578	378		~0.00088	217	no	1.255	-	
31 PCB 39	TriCB 2	58 15.60	a * *	, *	*	-0.000)7		-0.00098	191	no	1.127	-	
32 PCB 38	TriCB 25	58 15.83	1448 1581	0.92	3029	0.0022	09		~0.0007	*	no	1.57	-	
33 PCB 35	TriCB 25	8 16.18	1 * *	*	*	~0.0007	7		-0.00084	8	no	1 3 2	-	
34 PCB 37	TriCB 258	B 16.45	-1271.92 -1223	1.04	-2494.92	-0.0015	DOD on the		-0.00077	10	no	1 4 2 0	-	
35 PCB 54	TriCB 258	16.70	31005 30323	1.02	61328 (0.04359	7 FCB 35 NDR		-0.00069	* 9	хL	1.436	-	
36 PCB 53/50	TCB 292	NotFnd 13.08	*	yes *	* _	0.00122			-0.00122	7 157	no	0.000	-	
37 PCB 45/51	TCB 292	14.10 14.11	12174 15078	0.81	27252 0	039495			-0.00122	157 *	ΠO	0.906	-	
38 PCB 46	TCB 292	14.46 14.49	7243 9216	yes 0.79	16459 0	.02466			-0.00293 (* 55	no	0.911	-	
39 PCB 52	TCB 292	14.64 14.64	3834 4879	yes 0.79	8713 0.0)14024			0.00303 3	52 80	no	0.000	-	
40 PCB 73	TCB 292	15.36 15.38	91762 114120	yes 0.8 2	05890 n	23407		-	0.00346 1	0 6	 no	0.633	-	
41 PCB 43	7CB 290	15.47 15.46	291	yes 0.67	725 _n i	10220		-	0.0023 40	6 1	no	0.004	-	
42 PCB 69/49	290 TCB 292	15.51 15.52	3786 4934	yes 0.77 8	 1721 ۵۰۰	16014		~0	.00236 *	0,	Ves	0.834	-	
	290 TCB 292	15.65 15.64	40291	yes 0.78 91	1886 044	10017		-0.	00371 16	ر 	/00	0.813	-	
			01096	yes	U. 1 (236		-0.	16 00225 177	У	105	0.516 .		
									173	n	10	0.851 _		

	43 PCB 48		290 15 00												
	44 PCB 44/47/6	5 TCB	292 15.84	22709 28906	0.79	5161	5 0.072602								
	45 PCP FORM	TCB 2	290 15.96 292 15.00	88635	yes 0.82	1000	0.072092		-0.0	0285	00				
	10 T CB 59/62/7	5 2	290 16.16	108246	yes	19685	31 0.238384				92 92	no	0.673	-	2
. •	46 PCB 42	2	92 16.17 90 16.27	14472	0.83 Ves	2656	0 0.024778		-0.0	0245	317	no	0 783		
4	47 PCB 40/41/71	TCB 2	92 16.30	17241	0.79	39126	0.054400		-0.00)188	297 44		0.700	-	
4	12 Don	29 TCB 20	90 16.57	40007	yes		0.054436		-0.00	204	40	по	1.017	-	
4	64 PCB 64	29	16.58 0 16.70	49550	yes	89558	0.117373		-0.00	281	67 68	no	0.682	_	
49	9 PCB 72	TCB 29	2 16.71	24274 31405	0.77	55679	0.057273		-0.00	265	132	no	0.704		
50	PCB 68	TCB 292	2 17.20	1115	yes 0.72	2657			-0.002	208	124		0.724	-	
	00.08	290 TCP 200	17.38	1542 881	yes	2037	0.001932		0.00		93 93	no	0.922	-	
51	PCB 57	292	17.40	1096	0.8 Ves	1978	0.001537		~0.001	11	5	no	1.304		
52	PCB 58	TCB 292	17.68	697	0.79	1582	0.001000		-0.001	19	5 4	1/0-	1004	-	
52	D00 er	290 TCB 292	NotFnd	*	yes *		0.001229		-0.0011	0	3	yes	1.22	-	
	FCB 67	290	17.83	*	no	*	-0.0014		0.0071	9	4 4	yes	1.221	-	
54	PCB 63	ICB 292 290	17.94	3451	0.73	5956	0.004195		-0.0014	ļ	*	по	1 025		
55 F	CB 61/70/74/70	TCB 292	18.13 18.13	2615	.83	5780	0.00.00		-0.00108	3 1	*		1.035	-	
50 -		290 TCB 202	18.34	3165) 58857 0	es	0/00	0.004376		0.0011-	1	1	yes	1.347	-	
56 P	CB 66	292	18.34	77654 v	-76 1 es	36511 (0.116763		-0.00116	1	1	yes	1.253		
57 P(CB 55	TCB 292	18.58	24866 0.	77 5	7298 0	043766		-0.00131	16	5 7	DO.		-	
58 PC		290 TCB 292	NotFnd	* ye	es				-0.00117	16	8	110	1.109	-	
	56 56	290	19.06	* n	5	~(0.00145		-	101	1	no	1.241	-	
59 PC	B 60	290 291	19.05	4532 Ve	38	174 0.	007788		-0.00145	*		no	0 000		
60 PCI	B 80	TCB 292	19.22	2778 0.7	s 1 66	364 0/			-0.00146	15			0.000		
61 5 5		290 CB 202	NotFnd	3886 yes		0.0	06399		-0.004.4m	14	r	10 ().995 -		
01 PCE	3 79	290	19.48 NotEnd	* no		* -0.	00119		-0.00147	12	n	0 0	.988		
62 PCB	3 78 T	CB 292	20.61	* *		· -0.(0000		-0.00119	*	n	0 4			
63 PCB	P1 TC	290 CB 292	NotFnd 21.0e	* no * *	*				-0.00099	*		° 1.	- 224		
	51 TC	290	NotFnd	* no		-0.0	0113			*	nc	D 1.4	462 _		
64 PCB	77 10	292 292 290	21.43	* no	*	-0.0	0141		0.00113	*	no	1.2	287		
65 PCB 1	104 TC	B 292	21.89 1	311 0.72	313	5 0.00	2200	-	0.00141	*			-		
66 BCD 0	PeCi	326 N 3328 1	lotFnd	* yes		- 0.00,	2282	-(00135	*	10	1.0	27 -		
U PCB 9	96 D. O.	326 1	5.94 6.16	* no	*	-0.0(003			5 5	no	1.0	77 _		
67 PCB 1	03 Pece	328 16	6.16 68	12 1.62	1798	0.001	875	~(0.0003	*	no	1.00	A		
68 PCB 94	PeCB	328 17	(.31 12 (.33 70	16 1.6	1976	0.000		-0	00037	26		1.08	-		
60	PeCB	326 No	otFnd *	0 yes		0.0022	437	-0	00404	23	no	0.87	4 _		
69 PCB 95	; -	326 17	.47 *	no	*	-0.001	18	-0,	00131	6 6	no	0.739	э.		
70 PCB 100	PeCB 0/93/102/98	328 17.	77 2467	36 1.65	65407	0.0873	00	-0.	0018	*	no	0.5.			
71 PCB ***	PeCB :	326 17.9 328 17.0	99 435	6 1.75	69.40		00	~0.0	0142 2	*		0.54	-		
00 00/	Pacp s	326 18.3	34 3690	yes	0046	0.01007	77		19	14 11	no _.	0.683	-		
72 PCB 84	7 ec B 3	26 18.3	2128	2 1.73 Ves	5816	0.00847	8	-0.0	0157 14	1	yes	0.610			
73 PCB 89	PeCB 3	28 18.5	0 4294 0 2540	1.69	6840	0 0140~		-0.00	13 155 17	,		0.019	-		
74 DOD	Becb 3	26 NotF	nd *	yes *		0.01167	1	-0.00	100 16		yes	0.625	-		
74 PCB 121	32	-0 18.84 26 NotFr	1. * >d *	no	*	~0.00167		0.00	102 21		по	0.534			
75 PCB 92	PeCB 32	8 19.08	*	*	*	-0.00128		-0.00	167 *		no	0.500			
76 PCB 112/0	PeCB 32	° 19.36 8 19.35	9595	1.55 ·	5700			-0.001	28 *			0.582	-		
	0/101 326 PeCB 330	19.78	6203 71024	yes	5/56 (0.024083		0.001	*		no	0.761	-		
77 PCB 83/99	326	19.76	43464	1.63 1. Ves	4488	0.14688		-0.001	62 46		no	0.598			
78 PCB 112	PeCB 328	20.22	37316 22914	1.63 6	0230 n	.08807=		-0.001:	40 37 330		20	0 = :	-		
79 PCR 100/1	PeCB 328	NotFnd	*	yes *	*			~0.0015	308	,		U.71	-		
00 -	9/86/97/125/ 326	20.62	* 20809	no	-0	1.00119			- 101 151	n	0	0.623	-		
80 PCB 117/116	5/85 328	20.62	12371	1.69 33 Ves	269 0.(041738		-0.0011	9 *	n	0 1	0.810			
81 PCB 110/115	PeCB 328	21.19 21.23	6688	1.61 10	349 ^ ~	1240-		-0.00134	* 49			010	-		
82 BOD	326 PeCB 328	21.30	48352	yes 1.68 -	- 0.0	12427		-0.00100	46	no	, ().726	-		
V~ FLB 82	326	≥1.32 21.57	28745	yes 770	97 0.0	93717		0.00122	31 30	yes	s 0	.796	-		
83 PCB 111	PeCB 328	21.59	1305	1.48 323	9 0.0	0523		-0.00129	194	no	~				
84 PCB 120	PeCB 328	NotFnd 21 85	*	yes * *	-			-0.00172	181		0	.75	-		
0.0	326	NotFnd	*	no	-0.0	012		0.04	9	no	0.8	564 .	-		
85 PCB 108/124	328	22.25	*	no *	-0.0()102		-0.0012	*	no	0.8	309			
86 PCB 107	PeCB 328	23.21	2149	1.55 3537	0.000	070		-0.00102	*		0.0				
87 PCD tor	326 PeCB 328	23.40	6362 ·	yes 1.64	0.002	0/2		-0.0010=	*	110	0.9	51 _			
CD 123	326	≥3.40 NotFnd	3869	yes 10231	0.008	127		-	8 8	no	1.12	22 -			
88 PCB 106	PecB 328	23.51	*	* *	-0.001	31		-0.00102	21	yes	1 1 4	17			
89 PCB 118	PeCB 328	NotFnd 23.63	*	* *	0.00			-0.00131	19 *		1.14	w -			
	326 PeCB 200	23.79	71040	0	-0.000	96		-0.000	*	no	0.89	4 -			
	-00 020	23.80	44534 ve	.o 115574 es	0.0952	74		-0.00096	*	no	1.218	3			
			,					-0.0012	236	no		-			
									230	10	0.981	-			

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43 PCB 48

90	PCB 122	326	NotEnd											
91	PCB 114	PeCB 328	24.08	*	*	*	-0.00109							
92 F	PCB 105	PeCB 328	24.27 24.28	1098 723	1.52	1821	0.001523			-0.00108) * *	no	1.07	79 -
0.2		326 PeCB 328	24.84 24.83	22977	yes 1.54	3793	0.021750			-0.0011e	3	no	1.0	1
30 P	CB 127	326 PeCB 220	NotFnd	14953	yes *		0.031753			-0.0012	3 72	00	0.07	
94 P	CB 126	326	26.20 NotFnd	*	no	î	-0.00095			-0.00095	70	10	0.97	7 -
95 PC	CB 155	PeCB 328 360	27.72	*	* no	*	-0.0012			0.000000	*	no	1.23	- 1
96 PC	CB 152	HxCB 362	19.63	*	*	*	-0.00171			-0.0012	*	no	0.977	7 -
97 PC	B 150	360 HxCB 362	NotFnd 19.78	*	*	*	-0.0021			-0.00171	*	no	0.997	, _
	100	360 HxCB 362	NotFnd	*	no *	*	0.00027			-0.0021	*	no	0.910	
98 PC	B 136	360	20.18	* 9535	no 1 20		-0.00263			-0.00263	*		0.013	-
99 PCI	B 145	360 362	20.18 NotEnd	7385	yes	16920	0.021811			-0 00224	*	no	0.65	-
100 PCE	B 148 H	HXCB 362	20.41	*	* no	*	-0.00258			0.00224	39 37	no	0.761	-
101 PCE	F 151/135	XCB 362	21.55	*	*	*	-0.0031			-0.00258	*	no	0.662	-
102 PCP	H	360 IxCB 362	22.03 22.04	25480	1.3	45014	0.085082			-0.0031	*	no	0.551	
102 - 05	- 154 H	360 xCB 362	22.23	19534 1653	yes 1.14	3100	0.00.0002		-	0.00329	82	по	0 510	
103 PCB	144	360	22.22 22.49	1449 3476	yes	5102	0.004925		-	0.00276	79 7		0.519	-
104 PCB	147/149	362 360	22.51 22.80	2770	yes	6246	0.0109		-(00204	8	no	0.618	-
105 PCB	Hx 134/143	CB 362	22.80	90862 68058	1.34 ves	158920	0.235445				13 14	yes	0.562	-
106 PCB 1	Hxi 139/140	CB 362	22.97 23.06	2324 1728	1.35	4051 (0.006784		-(0.0018	475 434	yes	0.662	-
107 000 4	Hx	360 CB 362	23.31	1161	yes 1.21	2120 0	002064		-0	.00204	13	no	0.586	
ICT PCB 1	31 HxC	360 j	NotFnd	*	yes *	*	.003061		-0.	00175	13 5	DO	0.00	-
108 PCB 1	42	360 N	i3.49 lotFnd	*	no	-	0.00222		-0.1	00222	6 *		0.68	-
109 PCB 13	32 HXC	B 362 2 360 2	3.65	*	no	* ~(.00191		-0 (0104	*	no	0.537	-
110 PCB 13	HxC 33	B 362 2	3.88 90	642 1	1.33 2 /es	22454 0.	039317		0.0	0191	*	no	0.626	-
111 PCB 16	5 HxCl	B 362 24	1.29 2: 1.31 17	398 1 704	.41 .	4102 0.0	06128		-0.0	10213 💡	31	no ().561	-
112 DOD 44	HxCE	360 No 3362 24	otFnd	ст у *	'es *	* _0	00150		-0.0	0182 1	1	no c	657	
112 PCB 140	6 HxCB	360 24	.86 256	* n 370 1	10 32 4	-0.	00106		-0.0) 156 ·	0	PO 0	705	-
113 PCB 161	l lhon	360 No	.87 194 tFnd *	163 ye	95 95	5133 0.0	62845		-0.00	, 169 11	8		.765	-
114 PCB 153	HXCB	362 25. 360 25	01 * 43 0.10	no	0	* -0.(0123		-0.00	11	0	no 0.	705	-
115 PCB 141	HxCB	362 25.	46 1617	5 25 1.3 707 ve	31 374	4232 0.43	81013		-0.00	* 23		no 0	.97	-
116 PCB 130	HxCB	362 25.6 362 25.6	5 1 420 50 314	0 1.3	4 73	45 0.01	0579		-0.00	114 101	5	no 0.8	352 .	-
117 DOD (07	HxCB	360 25.9 362 25.0	8 531	7 1.4	s 1 90	96 0.04	447		-0.001	175 16	r	10 0.F	81	
117 PCB 137	HYCB	360 26.2	0 3779 0 1127	9 yes 7 1.30	3		447		~0.001	93 23		0 00		
118 PCB 164		360 26.1 360 26.2	9 810 9 3987	yes	19.	37 0.00	313		-0.001	21 97 8		0.6	17 -	
119 PCB 138/1	63/129 3	62 26.28	3 3176	yes	716	64 0.007	701		"0.004r	7	ye	es 0.6	. 07	
120 PCB 160	HxCB 3	62 26.61	114931	6 1.3 3 ves	2642	59 0.368	109		-0.001.	16 15	ye	s 0.91	13 -	
121 PCB 158	HxCB 3	62 NotFr 62 26.78	1d *	*	*	-0.001	45		-0.0016	9 651 638	пс	0.70	5.	
122 BCB 400/14	36 HxCB 36	60 26.96 52 26.96	13742	1.41	2351	7 0 0 2 2 0	70		-0.0014	5 *	no	0.82	2	
122 FCB 128/16	6 36 HxCB 36	0 27.80	9775 14261	yes 1.23	2590	4 0.0222			-0.0011	9 58	по	1.00		
123 PCB 159	36	0 NotFnd	11633 1 *	yes	2003	+ 0.0328	34		-0.00154	54 1 54		1.002	+ -	
124 PCB 162	36	2 28.76 0 NotEnc	*	no	*	-0.0012	26		-0.00126	55	10	0.774	-	
125 PCB 167	HxCB 362 360	² 29.06	*	* no	*	-0.0013	5		.0 00120	*	no	1.179	-	
126 PCB 156/157	HxCB 362	29.53	5964 5039	1.18	11003	0.00870	8		~0.00135	*	no	1.101	-	
127 PCB 160	360 HxCB 362	30.68 30.69	13331	1.26	23900	0.019			-0.00157	18	no	0.946	-	
120 000	360 HxCB 362	NotFnd	*	yes *	*	0.00/0			-0.00146	20 37	no	1 017		
128 PCB 188	394 HDCP 202	NotFnd	*	no *		-0.00156	5		-0.00156	36 *	Do	1.017	-	
129 PCB 179	394	24.23 24.52	* 11774	no		~0.00187			-0.00187	*	110	0.954	-	
130 PCB 184	HpCB 396 394	24.52	11218	1.05 yes	22992	0.026472			0.0010	*	no	1.012	-	
131 PCB 176	HpCB 396	25.00	*	* DO	*	-0.00196			-0.0018	45 45	no	1.047	-	
132 PCR 100	394 HpCB 396	25.32 25.32	3475	1.03	6835	0.008022			-0.00196	*	no	0.961	-	
132 DOD	394 HpCB 396	NotFnd	*	yes *	*	-0.0004			-0.00184	12	no	1.027		
135 PGB 178	394	27.00	* 5880	no 1.16	10005	-0.0021			-0.0021	13 *	00	0.021	-	
134 PCB 175	394	27.01 NotFnd	5054	yes	10935	0.018257			0.00261	*	10	0.899	-	
135 PCB 187	HpCB 396 394	27.61	*	no	*	-0.00251			0.000~	∠ı 19	no	0.722	-	
136 PCB 182	HpCB 396	27.88	37497 35031	1.07	72529 (0.120921		-	0.00251	*	no	0.753	-	
	394 HpCB 396	NotFnd 28.10	*	*	* .	0.00253		-(0.00261	137	no	0.723	-	
		-		по				~C	0.00253	*	no	0.747		
										*		I	-	

----;

137 PCB 183	5	394	4 28.49											
138 PCB 185	F	IpCB 396 394	6 28.50	26286	1.12 yes	4980	6 0.051709			-0.00257	Q1			
139 PCB 174	н	pCB 396	28.56	א ב *	* no	*	-0.00351			-0.00207	58	yes	1.162	-
140 PCB 177	Н	pCB 396	28.72	1 *	* no	*	~0.00308			0.000001	*	no	0.851	-
141 PCB 181	Ηp	CB 394	29.14 29.14	16474 16175	1.02	32649	0.041754		-	-0.00308	*	no	0.97	-
142 PCB 171/4	Hp	394 CB 396	NotFnd 29.56	*	yes *	*	-0.00335		-	0.00317	39 39	no	0.943	-
143 PCP 170	Hp	394 CB 396	29.78 29.78	9016 8440	1.07	17456	0.022199		4	0.00335	*	no	0.892	-
144 POD 14-	Hp	394 CB 396	NotFnd 31.42	*	yes *	*	-0.00314	•	-(0.00315	20	no	0.948	-
144 PCB 192	Hp	394 CB 396	NotFnd	*	no *	*	-0.00276		~C	0.00314	*	no	0.95	-
145 PCB 193/18	BO HpC	394 CB 396	32.11	54906	no 1.08	105966	0.112222		-0	.00275	*	no	1.085	
146 PCB 191	HnC	394 394	32.06	51061 1320	yes 0.99	2650	0.112323		-0.	.00216	113	no	1.383	_
147 PCB 170	Hpc Hpc	394	32.48 33.43	1331 10176	no 1.07	2000	-0.00221		-0.	00221	112	Ορ-Ο	1 350	-
148 PCB 190	прс	396 394	33.45 34.02	9493 5841	yes	19670	0.025556		-0.6	00235	* 20	Ves	1.002	-
149 PCB 189	HpCi	B 396 394	34.02 36.87	5148	yes	10990	0.009856		-0.(0222	21 12	yea	1.271	-
150 PCB 202	HpCE	3 396 428	36.86	1462	1.18 yes	3181	0.002468		-0.0	0078	11	yes	1.345	-
151 PCB 201	OcCE	3 430 428	29.26	3168 3409	0.93 yes	6577	0.011083		-0.0	0182	7	no	0.944	-
152 PCB 204	OcCB	430	30.16	1585 1678	0.94 yes	3263	0.004252		-0.0	0104	17	no	0.988	-
153 PCB 197	OcCB	430	NotFnd 30.86	*	* no	* .	-0.00187		-0.0	0181	9 7	no	0.997	-
154 PCB 200	OcCB	428	NotFnd 31.10	*	*	* .	-0.00205		-0.00	J187	*	no	0.962	-
155 PCB 108/100	OcCB	428 430	NotFnd 31.22	*	*	* -	0.00179		-0.00	205	*	no (0.876	-
156 PCP 100	OcCB	428 430	NotFnd 34.17	*	*	* ~(0.00275		-0.00	179	*	no 1	.006 .	-
167 PCB 196	OcCB	428 430	NotFnd 34.90	*	no *	* -0	0.00267		~0.00;	275 *	•	0 סר	.654 -	
157 PCB-203	OcCB	428 430	35.12	2301 (no).98 4	656 0	000182		-0.002	267 *		0 0	.674 _	
158 PCB 195		128	NotFnd	2355 y	/es *	* .0	00450		-0.002	273 12	2 r	o 0.	659 .	
159 PCB 194	4 0cCB 4	28	36.57 39.20	* 3582	יס 1 ז י	176 0.0	.00153		-0.001	53 *	: n	o 1.	005	
160 PCB 205	0000 4	28 N	39.19 √otFnd	3594 y *	es *	+ 0.0	08545		~0.001	41 15	n)) 1	101	
161 PCB 208	4000B 4	30 3 62 N	9.75 lotFnd	* n * .	0	~ -0.:	00141		-0.0014	13 41 *	n	. 10		
162 PCB 207	NOCB 46	34 30 32 N	6.31 otFnd	* n	0	* -0.(00221		-0.0022	* {1 *				
163 PCB 206	NoCB 46 46	64 .31 12 No	7.32 DtEnd	* n	, S	-0.0	0171		-0.0017	*		1.0	-23	
164 PCB 209	NoCB 46	4 41 8 No	1.68	* no	*	-0.(0022		-0.0025	*	no	1.3	32 -	
165 PCB 1L	DCB 50	0 43	.54	* * * nc	*	-0.0	0294		-0.0020	*	no	1.0;	27 -	
166 PCB 3L	202	2 8.9	98 15 97 44	5995 3.5 468 ves	1 2004	63 0.14	3928		0.0023	* *	no	1.0	4 -	
167 PCB 4L	202	10. 10.	. 17 14 9 16 45	9306 3.29 455 ves	9 1947	61 0.13	5146		0.001	3155 297	no	0.82	4 73	
168 PCB 15	234 236	10. 10.:	28 55 28 33	461 1.66	8883	2 0.096	826		0.001	3035 302	no	0.85	2 68	
169 PCB 101	234 236	12.9 12.9	93 176 91 106	498 1.66	28299	97 0.15	58		0	2200 2227	no	0.54	3 49	
170 000 191	268 270	11.6 11.6	58 533	316 1.05	10393	1 0.106	308		0	1393 1376	no	1.074	1 78	
171 00 3/L	268 270	16.6 16.6	8 1590	065 1.07	30834	9 0.198/	453		0.001	251	no	0.578	54	
171 PCB 54L	302 304	13.0	6 49 7	284 yes 20 0.82	11052	9 0 100	02		0.001	574	no	1.987	100	
172 PCB 81L	302 304	21.4	6080 1 1168	09 yes 31 0.79	264254	0 1044	00		0	837	no	1.297	55	
173 PCB 77L	302	21.85	2 1474 1096	20 yes 90 0.76	2531/4	0.1944	0.0		0	2545 1384	no	1.738	92 QR	
174 PCB 104L	338	21.82 15.92	1434 7022	56 yes 7 1.61	112700	0.1929	ษา		0	1451 1269	no	1.677	07	
175 PCB 123L	340 338	15.93 23.49	4356 15266	5 yes	0.000	0.1431	55		0	1381 7879	no	1 150	97	
176 PCB 118L	340 338	23.50 23.77	99598	B yes	∠52266 0.:-	0.18945	58		0	6953 3748	VAC	1.000	12	
177 PCB 114L	340 338	23.76 24.25	95388	3 yes	245317	0.18714	5		0	1680 3720	Vec	1.936	95	
178 PCB 105L	340 338	24.25 24.81	88159	9 1.66 yes	234846	0.19259	4		0	1601 3487	yes	1.906	94	
179 PCB 126L	340 338	24.81	92518	9 1.62 yes	242804	0.193704	4		0	1460	yes	1.773	97	
180 PCB 155L	340 372	27.67	147420 89611	9 1.64 yes	237031	0.198569	9		0	1517	yes	1.822	98	
181 PCB 167L	374	19.61 19.61	70581 55042	1.28 Ves	125624	0.128449			0	3178 1349	no	1.735	100	
182 PCB 156L/157	374	29.50 29.49	148674 116493	1.28	265166	0.180363				7957 4725	по	1.404	65	
183 PCB 1691	374	30.66 30.69	275092 215880	1.27	490972	0.3668			v :	2200 1957	no	2.11	91	
	372 374	34.08 34.06	95843 76804	1.25	172647	0.131352			U 3	3370 2961	no	1.921	92	
			,	yes				() 1 1	300 171	no	1.886	66	

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184 PCB 188L	406	24.20	68320	4 00	10/000								
185 PCB 180	408	24.21	63368	1.08 yes	131689	0.14216			0	2524	no	1.329	72
	406 408	32.09	71317	1.11	135441	0.140653			0	4987			12
186 PCB 170L	406	32.09	64124 62775	yes	100100				U	3625 2960	no	1.349	71
197 DCD (00)	408	33.42	57424	ves	120199	0.142639			0	3127	no	1 18	70
107 PCB 189L	406	36.82	139725	1.06	271007	0.175931			_	2515		1.10	12
188 PCB 202L	408	36.83	131281	yes					0	3185	no	2.157	89
(00 B ==)	442	29.23	56559 62709	0.9	119268	0.117673			0	3108	no	1 440	
189 PCB 205L	440	39.71	89654	0.93	186327	0 170 405				3613	110	1.419	59
190 PCB 208	442	39.73	96674	yes	100027	0.170405			0	1921	no	1.531	86
COL COL	474	36.27	50056	0.78	114332	0.140523			0	2333			
191 PCB 206L	474	41.68	64276 38430	yes					0	1993	no	1.139	71
100 000 000	476	41.73	47595	0.81 Ves	86034	0.158629			0	1429	no	0.76	00
192 PCB 209L	510	43.54	43637	1.2	80109	0 15/888				1599	110	0.76	80
193 PCB 28L	512	43.53	36472	yes		0.104000			0	1951	no	0.724	78
PCB Cleanup Stand	200 ard 270	14.41	167545	1.04	327910	0.205584			0.001	1597			
194 PCB 111L	338	21.83	105185	yes 1 ce	400074				0.001	1106	no	2.039	93
PCB Cleanup Standa	ard 340	21.84	63686	Ves	168871	0.182806			0	2803	no	1 3/3	02
PCB Cleanup Stands	406	26.98	43963	1.06	85442	0.167298				3574		1.040	03
196 PCB 31L	268	26.97 NotEnd	41479	yes					0	1532	no	0.733	76
PCB Audit Standa	ard 270	14.24	*	*	*				0.001	3089		4.00.1	
197 PCB 95L	338	NotFnd	*	*	*				01001		110	1.934	
PCB Audit Standa	ird 340	17.73	*	no					0		no	0.946	
PCB Audit Standa	372 rd 374	NotFnd	*	*	*								
199 PCB 9L	234	20.40	1154405	no					0		no	1.225	
PCB Recovery Standa	rd 236	11.19	710012	1.63	1864177	9.496049			-	10076	80		
200 PCB 52L	302	15.35	384435	0.8	862382	6 780766				10131	110	-	-
201 PCB 101	rd 304	15.36	477948	yes	UULUUL	0.709700			-	7724	no	-	-
PCB Recovery Standar	338 d 340	19.77	468814	1.62	758386	6.862019				7544			
202 PCB 138L	372	26.57	289572	yes					-	13247	no	-	-
PCB Recovery Standar	d 374	26.56	333947	Ves	768308	7.092558			-	19094	no	-	
PCB Recovery Stonder	440	39.18	381268	0.94	787312	7.237078				7235			-
. Ob Recovery Standar	0 442	39.17	406044	yes					-	8005	no	·-	-
Chlorobiphenyls										9780			
Dichlorobiphenyls						-0.00062		0	-0.00062				
Irichlorobiphenyls					(0.048018		3	-0.00493				
Tetrachlorobiphenyls					C C	0.773702	1	14	-0.00385				
Pentachlorobiphenyls						1.18672	2	22	-0.00371				
Hexachlorobiphenyls					0	.673546	1	8	-0.00182				
Heptachlorobiphenyls					1	.394827	2	20	-0.00329				
Octachlorobiphenyls					0	.439538	1	1	-0.00351				
Nonachlorobiphenvls					0	.033062		4	-0.00275				
Decachlorobiphenvl					-(0.00221	ſ	1	-0.00270				
PCB (total)					-(0.00294	((- n	-0.00221				
					4.	.549413	· · · ·	-	0.00294				

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Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 01:21:44 PM Eastern Standard TimePrinted:February 20, 2016 01:24:13 PM Eastern Standard Time



Total DiCB F1



AutoSpec - Ultima 3

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AutoSpec - Ultima 3


Quantify Sample Report MassLynx 4.0 SP1 Acquired Date Acquired Date

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Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

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	February 20, 2016 01:24:13 PM Eastern Standard T	imo
		nne

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total TeCB F2



Total TeCB labeled F2

11.20

11.40

11.60

11.80

12.00

11.00



12.20

12.40

12.60

12.80

13.00

13.20

🖵 min

C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

Last Altered:	February 20, 2016 01:21:44 PM Eastern Standard Time
Printed:	February 20, 2016 01:24:13 PM Eastern Standard Time



Total TeCB F3



Total TeCB F3





Total TeCB labeled F3



Total TeCB labeled F3



16.25

16.50



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

February 20, 2016 01:21:44 PM Eastern Standard Time Last Altered: Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total PeCB F3







Total PeCB labeled F3



Total PeCB labeled F3





Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered: February 20, 2016 01:21:44 PM Eastern Standard Time Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total PeCB F5



Total PeCB F5



Total PeCB labeled F5



Total PeCB labeled F5



AutoSpec - Ultima 3

27.50

28.00

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

February 20, 2016 01:21:44 PM Eastern Standard Time Last Altered: Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total HxCB F4



Total HxCB F4



Total HxCB labeled F4



Total HxCB labeled F4



AutoSpec - Ultima 3

22.00

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20,	2016	01:21:44	ΡM	Eastern	Standard	Time
Printed:	February 20,	2016	01:24:13	ΡM	Eastern	Standard	Time















Quantify Sample Report MassLynx 4.0 SP1 Acquired Date Acquired Date

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 01:21:44 PM Eastern Standard TimePrinted:February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered: February 20, 2016 01:21:44 PM Eastern Standard Time Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total HpCB F5





M2160218DS009 Smooth(SG,3x1)











AutoSpec - Ultima 3

28.00



C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

Last Altered: February 20, 2016 01:21:44 PM Eastern Standard Time Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total HpCB F7



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 01:21:44 PM Eastern Standard TimePrinted:February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02



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C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

Last Altered: February 20, 2016 01:21:44 PM Eastern Standard Time Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total OcCB F7







Total OcCB labeled F7



42.0

43.0

44.0

Total OcCB labeled F7



AutoSpec - Ultima 3

Maxxam Analytics

45.0

Dataset: C:\MassLynx\Default.pro\M2160218D \M2160218D samples 1668A.gld

Last Altered:	February 20,	2016 01:21:44	PM Eastern	Standard Time
Printed:	February 20,	2016 01:24:13	PM Eastern	Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti **Description: BRP510-01R** Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total NoCB F7







Total NoCB labeled F7



Total NoCB labeled F7



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

February 20, 2016 01:21:44 PM Eastern Standard Time Last Altered: Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016 Time: 01:09:02

Total DeCB F7



Total DeCB F7



Total DeCB labeled F7



45.0

46.0

Quantify Sampl Acquired Date	e Report MassLynx 4.0 SP1	Page 22 of 23
Dataset:	C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld	
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Last Altered: February 20, 2016 01:21:44 PM Eastern Standard Time Printed: February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016

Time: 01:09:02

lockmass F1

M2160218DS009 Smooth(SG,3x1) F1:SIR of 10 channels,EI+ lockmass F1;9.69;105049 218.9856 100-5.536e+006 % 0 min 10.00 10.20 10.40 10.60 10.80 8.60 8.80 9.00 9.20 9.40 9.60 9.80 lockmass F2 M2160218DS009 Smooth(SG,3x1) F2:SIR of 16 channels,EI+ 242.9856 lockmass F2;11.18;63808 lockmass F2;11.66;59541 lockmass F2;12.68;10624 100 1.996e+006 % 0min 11.00 11.20 11.40 11.60 11.80 12.00 12.20 12.40 12.60 12.80 13.00 13.20 13.40 lockmass F3 M2160218DS009 Smooth(SG,3x1) F3:SIR of 14 channels,EI+ lockmass F3;16.21;6602 292.9824 lockmass F3;14.35;23691 lockmass F3;15.20;6452



lockmass F4

F4:SIR of 14 channels,EI+ M2160218DS009 Smooth(SG,3x1) lockmass F4;17.95;9161 lockmass F4;19.98;18451 lockmass F4;21.64;9276 330.9792 100 2.349e+006 % 0min רדי 17.00 18.00 19.00 20.00 21.00 21.50 22.00 22.50 17.50 18.50 20.50 19.50

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Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 01:21:44 PM Eastern Standard TimePrinted:February 20, 2016 01:24:13 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R Vial: 9 Date: 18-FEB-2016

Time: 01:09:02

lockmass F5



NZ 1602 1603009 SHIOOUN(SG,SXT)					anneis, EI+
lockmass F7;37.71;7836	lockmass F7;39.64;5280	lockmass	F7;42.71;7062		454.9728
		$\sim\sim\sim\sim\sim\sim$		<u>~~~~~~4</u>	"797e+005
7					
]					
%					
/0					
_					
_					
0				*****	min
360 370 380	390 400	410 420	43.0 44.0	45.0	46.0
00.0 07.0 00.0	40.0	41.0 42.0	40.0 44.0	-10.0	-10.0





16/02/20 : AH

M3





M3 16/02/20 : AH









16/02/20 : AH

M3











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16/02/20 : AH

M3

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Filename M2160218DS010 Acquired 18/02/2016 1:59

Cali File M2160218D_209

Dil Fac 1.00

Sample ID BRP510-01R:D1 Comments Instrument File Ultima 3 Sample Size 10.173

								Isomers					
Name 1 PCB 1	mass 188 MoCB 190	RT NotFnd	Area *	ratio *	Tot Area *	ng -0.00063	Code		DL -0.00063	S/N *	Mod no	rrf 1.082	Rec -
2 PCB 2	188 McCB 190	NotFnd	*	*	*	-0.00057			-0.00057	*	no	1.2	-
3 PCB 3	188 188	NotFnd	*	*	*	-0.00063			-0.00063	*	no	1.079	-
4 PCB 4	222	10.30	1208	1.68	1925	0.003436			-0.00204	38	yes	0.954	-
5 PCB 10	DICB 224 222	NotFnd	*	yes *	*	-0.00158			-0.00158	3	no	1.229	-
6 PCB 9	DICB 224 222	NotFnd	*	по *	*	-0.00219			-0.00219	*	no	1.311	-
7 PCB 7	DICB 224 222	NotFnd		no *	*	-0.00246			-0.00246	*	no	1.165	-
8 PCB 6	DICB 224 222	11.26 11.36	2399	no 1.49	4011	0.002575			-0.00217	37	no	1.319	-
9 PCB 5	DICB 224 222	11.34 NotFnd	1612	yes *	*	-0.00292			-0.00292	3	no	0.983	-
10 PCB 8	DICB 224 222	11.50 11.55	9248	no 1.47	15542	0.009037			-0.00197	141	no	1.456	-
11 PCB 14	DICB 224 222	11.55 NotFnd	6294	yes *	*	-0.00215			-0.00215	10	no	1.332	-
12 PCB 11	DiCB 224 222	12.26 12.64	* 7118	no 1.36	12351	0.00814			-0.00223	* 73	no	1.285	-
13 PCB 13/12	DiCB 224 222	12.66 NotFnd	5233 *	yes *	*	-0.00237			-0.00237	6 *	no	1.21	
14 PCB 15	DICB 224 222	12.82 12.95	* 25592	no 1.59	41721	0.027007			-0.00329	* 261	no	0.871	-
15 PCB 19	DICB 224 256	12.96 11.68	16129 1560	yes 0.93	3239	0.005257			-0.00257	19 10	no	0.899	-
16 PCB 30/18	TriCB 258 256	11.70 12.49	1678 23070	yes 1.06	44861	0.04289			-0.00284	13 152	no	0.813	-
17 PCB 17	TriCB 258 256	12.48 12.68	21791 4166	yes 0.99	8357	0.009516			-0.00338	152 27	no	0.683	-
18 PCB 27	TriCB 258 256	12.69 12.79	4191 4665	yes 1.07	9029	0.007007			-0.0023	28 27	no	1.002	-
19 PCB 24	TriCB 258 256	12.79 NotFnd	4364 *	yes *	*	-0.0027			-0.0027	25 *	no	0.855	-
20 PCB 16	TriCB 258 256	12.87 12.91	* 7937	no 1.05	15520	0.024108			-0.00461	* 41	no	0.501	-
21 PCB 32	TriCB 258 256	12.90 13.14	7583 7581	yes 1.04	14877	0.010585			-0.00211	37 46	no	1.093	-
22 PCB 34	TriCB 258 256	13.14 NotFnd	7296	yes *	*	-0.00086			-0.00086	47	no	1.235	-
23 PCB 23	TriCB 258 256	13.74 NotFnd	*	no *	*	-0.00103			-0.00103	*	no	1.033	-
24 PCB 26/29	TriCB 258 256	13.83 13.97	* 19325	no 1.04	37890	0.024129			-0.00087	* 98	no	1.221	-
25 PCB 25	TriCB 258 256	13.99 14.10	18565 9549	yes 1.09	18344	0.010692			-0.0008	96 47	no	1.334	-
26 PCB 31	TriCB 258 256	14.10 14.26	8795 102856	yes 1.03	203142	0.118311			-0.0008	45 516	no	1.335	-
27 PCB 28/20	TriCB 258 256	14.27 14.41	100286 266289	yes 1.04	521393	0.340584			-0.0009	505 1278	no	1.191	-
28 PCB 21/33	TriCB 258 256	14.43 14.53	255104 47456	yes 0.95	97131	0.060178			-0.00085	1323 216	no	1.255	-
29 PCB 22	TriCB 258 256	14.53 14.75	49675 41209	yes 1	82634	0.057022			-0.00095	225 196	no	1.127	-
30 PCB 36	TriCB 258 256	14.77 NotFnd	41425 *	yes *	*	-0.00068			-0.00068	203	no	1.57	-
31 PCB 39	TriCB 258 256	15.60 15.84	* 1645	no 0.92	3428	0.002019			-0.00081	*	no	1.32	-
32 PCB 38	TriCB 258 256	15.83 NotFnd	1783 *	yes *	*	-0.00074			-0.00074	9 *	no	1.438	-
33 PCB 35	TriCB 258 256	16.18 16.45	* 2215	no 1.07	4287	0.002088			-0.00067	*	no	1.597	-
34 PCB 37	TriCB 258 256	16.45 16.70	2072 37828	yes 1.07	73136	0.042822			-0.00118	9 160	no	0.906	-
35 PCB 54	TriCB 258 290	16.70 NotFnd	35308	yes *	*	-0.00142			-0.00142	152 *	no	0.911	
36 PCB 53/50	TCB 292 290	13.08 14.10	* 15069	no 0.82	33510	0.040064			-0.00282	* 58	no	0.654	-
37 PCB 45/51	TCB 292 290	14.12 14.46	18441 8765	yes 0.79	19863	0.024552			-0.00292	56 31	no	0.633	-
38 PCB 46	TCB 292 290	14.49 14.64	11098 4562	yes 0.8	10285	0.014531			-0.00333	31 17	no	0.554	-
39 PCB 52	TCB 292	14.64 15.36	5723 111120	yes 0.81	248582	0.233146			-0.00221	16 418	no	0.834	-
40 PCB 73	TCB 292	15.38 NotEnd	137462	yes *	*	-0.00227			-0 00227	405	no -	0.813	_
41 PCR 43	TCB 292	15.46	* 4812	no 0 75	11917	0.00227			-0.00227	* 17	10	0.516	-
41 FOD 40	TCB 292	15.53	6405	yes	108704	0.000004			-0.00000	16	10	0.010	-
42 208 69/49	TCB 292	15.64	40058 60646	yes	100704	0.09990.1			-0.00217	178	110	0.851	-

43 PCB 48	2	290 15.84	27259	0.77	62770	0.072932		-0.00274	98	no	0.673	-
14 PCB 14/47/65	TCB 2	292 15.84	35511	yes	227054	0 226702		0.00000	95		0 700	
44 FCB 44/4//05	TCB 2	290 15.98 292 15.98	131891	yes	237054	0.236/92		-0.00236	325 311	no	0.783	-
45 PCB 59/62/75	TCB 2	290 16.16 292 16.17	13707 17321	0.79	31028	0.02388		-0.00182	44 42	no	1.017	-
46 PCB 42		290 16.27	21371	0.79	48281	0.055418		-0.00271	72	no	0.682	-
47 PCB 40/41/71	TCB 2	292 16.30 290 16.58	26910 48044	yes 0.78	109897	0.118822		-0.00255	71 139	no	0.724	-
49 DCD 64	TCB 2	292 16.58	61853	yes	00050	0.050000			138			
40 FCB 04	тсв 2	290 16.72	30557 37801	0.81 yes	68358	0.058009		-0.002	103 98	no	0.922	-
49 PCB 72	ZCB 2	17.20	1577 1918	0.82	3495	0.002096		-0.00071	9	no	1.304	-
50 PCB 68	2	17.40	1203	0.82	2667	0.00171		-0.00076	6	no	1.22	-
51 PCB 57	TCB 2	292 17.40 290 17.70	1464 674	yes 0.72	1611	0.001032		-0.00076	6 5	ves	1,221	-
50 DOD 50	TCB 2	17.68	938	yes					6	,00		
52 PCB 58	TCB 2	290 NotFn 292 17.83	a ^ *	no		-0.0009		-0.0009	*	no	1.035	-
53 PCB 67	TCB 2	17.95 17.95	3032	0.77	6988	0.00406		~0.00069	16 17	yes	1.347	-
54 PCB 63	2	90 18.13	2843	0.76	6581	0.00411		-0.00074	16	yes	1.253	-
55 PCB 61/70/74/7	6 2	92 18.13 90 18.34	3738 68571	yes 0.76	158729	0.112007		-0.00084	16 253	no	1,109	-
56 DCD 66	TCB 2	92 18.35	90158	yes	C0004	0.040007		0.00075	254		4.044	
30 1 65 00	TCB 2	18.58	39053	yes	69604	0.043907		-0.00075	155	no	1.241	-
57 PCB 55	TCB 2	90 NotFn 92 18.71	d *	*	*	-0.00093		-0.00093	*	no	0.998	-
58 PCB 56	2	90 19.06	4233	0.79	9616	0.007558		-0.00093	24	no	0.995	-
59 PCB 60	1CB 2	92 19.05 90 19.22	5384 3385	yes 0.76	7816	0.006191		-0.00094	22 19	no	0.988	-
60 PCB 80	TCB 2	92 19.22	4430	yes *	*	0.00070		0.00070	20		4 00 4	
001000	TCB 2	92 19.48	*	no		-0.00076		-0.00076	*	no	1.224	-
61 PCB 79	2 TCB 2	90 20.62 92 20.61	705 947	0.74 ves	1652	0.000884		-0.00063	4	yes	1.462	-
62 PCB 78	2	90 NotFn	d *	*	*	-0.00072		-0.00072	*	no	1.287	-
63 PCB 81	108 2	92 21.06 90 NotFnd	* d *	no *	*	~0.0009		-0.0009	*	no	1.027	-
64 PCB 77	TCB 2	92 21.43	* 1525	no	2474	0 002127		0.00096	*		1 077	
0410017	TCB 2	92 21.87	1936	yes	5471	0.002137		-0.00066	o 7	no	1.077	-
65 PCB 104	3 PeCB 3	26 NotFno 28 15.94	d * *	* no	*	~0.00021		-0.00021	*	no	1.094	
66 PCB 96	3	26 16.16	-1035.4	1.55	-1703.4	-0.00147	PCB 96 NDR	-0.00026	33	хL	0.874	-
67 PCB 103	Pece 3	28 16.16 26 17.31	-668 1444	0K 1.67	2306	0.002348		-0.00062	26 13	no	0.739	-
68 PCB 94	PeCB 3	28 17.33 26 NotEn	862 d *	yes *	*	.0.00085		0.00086	12		0.54	
	PeCB 3	28 17.47	*	no		-0.00085		-0.00065	*	110	0.54	-
69 PCB 95	PeCB 3	26 17.75 28 17.77	48679 29298	1.66 ves	77977	0.085931		-0.00067	426 408	no	0.683	-
70 PCB 100/93/102	/98 3	26 18.00	4637	1.59	7547	0.009172		-0.00074	24	no	0.619	-
71 PCB 88/91	3	26 17.93	4320	yes 1.65	6934	0.008346		-0.00073	24 37	yes	0.625	-
72 PCB 84	PeCB 3	28 18.31 26 18.50	2614 5268	yes 1.65	8456	0 011911		-0.00086	33 44		0.534	_
72 000 00	PeCB 3	28 18.50	3187	yes				-0.00000	39	no	0.004	
73 PCB 89	PeCB 3	26 NotFrid 28 18.84	*	no	•	-0.00079		~0.00079	*	no	0.582	-
74 PCB 121	3. Pace 3	26 NotFno	* b	*	*	-0.0006		-0.0006	*	no	0.761	-
75 PCB 92	3	26 19.36	11253	1.5	18747	0.023593		-0.00077	90	no	0.598	
76 PCB 113/90/101	PeCB 3: 3	28 19.35 26 19.79	7494 84618	yes 1.66	135537	0.143553		-0.00065	95 681	no	0.71	-
77 PCB 93/00	PeCB 3	28 19.76	50918	yes	70645	0.095040		0.00074	644		0.000	
·· FOB 03/88	PeCB 3	28 20.23	26669	yes	10015	0.000249		~0.00074	3∠9 308	ΠÖ	0.623	-
78 PCB 112	3: PeCB 3:	26 NotFnc 28 20.34	* Ł	* no	*	-0.00056		-0.00056	*	no	0.819	-
79 PCB 109/119/86	/97/125/ 3	26 20.68	25148	1.67	40201	0.041637		-0.00063	103	no	0.726	-
80 PCB 117/116/85	PeCB 3: 3:	28 20.62 26 21.19	15053 10349	yes 1.69	16485	0.015589		-0.00058	103 72	no	0.796	-
91 DCD 110/115	PeCB 3	28 21.23	6136	yes	07040	0.000407		0.00004	66		0.75	
81 PGB 110/115	PeCB 32	28 21.30 28 21.32	33153	yes	87816	0.088127		~0.00061	400 377	no	0.75	-
82 PCB 82	BeCB 33	26 21.58 28 21.59	2307 1476	1.56	3784	0.005043		-0.00081	16 17	no	0.564	-
83 PCB 111	32	26 NotFnd	1 *	*	*	-0.00057		-0.00057	*	no	0.809	-
84 PCB 120	PeCB 32	28 21.85 26 NotFnd	* • *	no *	*	-0.00048		-0.00048	*	no	0.951	-
85 DCB 109/404	PeCB 32	28 22.25	*	no	4000	0.000000		0.00000	*		4 400	
03 FOB 100/124	PeCB 32	28 23.20 28 23.21	2558 1677	1.52 yes	4236	0.002839		~0.00096	9 8	yes	1.122	-
86 PCB 107	BeCR 32	26 23.40 28 23.40	6726 4251	1.58	10977	0.007198		-0.00093	21	yes	1.147	-
87 PCB 123	32	26 NotFnd	*	y05 *	*	-0.0012		-0.0012	*	no	0.894	-
88 PCB 106	PeCB 32 32	28 23.51 26 NotFnd	*	no *	*	-0.00088		-0.00088	*	no	1.218	-
80 DCB 149	PeCB 32	28 23.63	*	no	424007	0.004000		0.00400	*		0.001	
55 F 66 110	PeCB 32	23.79	6∠608 52180	yes	134987	0.091063		~0.00109	∠48 241	no	0.981	-

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90 PCB 122	3	26 NotEnd	*	*	*	_ո որոցց	-0.00000	*	20	1 070	
	PeCB 3	28 24.08	*	no		-0.00000	-0.00033	*	110	1.075	-
91 PCB 114	Bece 3	26 24.27 28 24.28	1278	1.53	2112	0.001474	-0.00106	4	yes	1.01	-
92 PCB 105	3	26 24.84	27084	1.59	44156	0.030596	-0.0011	77	no	0.977	-
93 PCB 127	PeCB 3	28 24.85 26 NotEnd	17072	yes *	*	0 00097	0.00087	75 *		4.00	
	PeCB 3	28 26.20	*	no		-0.00000	-0.00087	*	10	1.23	-
94 PCB 126	3: PeCB 3:	26 NotFnd 28 27 72	*	*	*	-0.0011	-0.0011	*	no	0.977	-
95 PCB 155	3	60 NotFnd	*	*	*	-0.00151	-0.00151	*	no	0.997	-
96 PCB 152	HXCB 3	62 19.63 60 NotFnd	*	no *	*	-0.00186	~0.00186	*	no	0.813	-
07 000 450	HxCB 3	62 19.78	*	no				*			
97 PCB 150	HxCB 3	60 Not-nd 62 19.88	*	no	*	-0.00232	-0.00232	*	no	0.65	-
98 PCB 136	3	60 20.18	10688	1.22	19485	0.020979	-0.00198	40	no	0.761	-
99 PCB 145	3	60 NotFnd	*	yes *	*	-0.00228	-0.00228	40	no	0.662	-
100 PCB 148	HxCB 3	62 20.41 60 NotEnd	*	no *	*	-0 00274	-0.00274	*		0.551	
	HxCB 3	62 21.55	*	no		0.00214	-0.002.14	*	110	0.001	-
101 PCB 151/135	30 HxCB 30	60 22.03 62 22.04	30075 23405	1.28 ves	53479	0.084427	-0.00291	88 85	no	0.519	-
102 PCB 154	30	60 22.23	2105	1.27	3767	0.004996	-0.00244	7	no	0.618	-
103 PCB 144	HXCB 30	62 22.22 60 22.49	1662 4117	yes 1.31	7252	0.01057	-0.00269	8 14	ves	0.562	-
104 PCB 147/149	HxCB 36	62 22.51	3135	yes	100001	0 000604	0.00107	14		0.000	
104 1 00 14//145	HxCB 36	62 22.80	81718	yes	100004	0.233031	~0.00127	616	yes	0.002	-
105 PCB 134/143	30 HxCB 36	60 22.97 62 23.06	2604 1995	1.3	4599	0.006433	-0.00144	20	no	0.586	-
106 PCB 139/140	30	60 23.29	1317	1.28	2343	0.002825	-0.00124	7	no	0.68	-
107 PCB 131	HXCB 36	52 23.31 50 NotFnd	1026	yes *	*	-0.00157	-0.00157	7 *	no	0.537	-
109 DOB 140	HxCB 36	32 23.49	*	no		0.00405	0.00407	*			
106 FCB 142	HxCB 36	50 Notena 52 23.65	*	no		~0.00135	~0.00135	*	no	0.626	-
109 PCB 132	30 HYCB 36	50 23.88	14794	1.22	26971	0.039446	-0.0015	81	no	0.561	-
110 PCB 133	36	50 24.29	2657	1.35	4623	0.005768	-0.00128	15	no	0.657	-
111 PCB 165	HxCB 36 36	52 24.31 50 NotFnd	1966 *	yes *	*	-0.0011	-0.0011	15 *	no	0 765	
140 DOD 110	HxCB 36	62 24.66	*	no				*	110	0.700	
112 PCB 146	HxCB 36	50 24.88 52 24.87	29589 23651	1.25 yes	53240	0.061918	-0.0012	169 164	no	0.705	-
113 PCB 161	36	NotFnd	*	*	*	-0.00087	-0.00087	*	no	0.97	-
114 PCB 153/168	36	52 25.01 50 25.43	251274	1.31	442721	0.425881	-0.00099	1432	no	0.852	-
115 PCB 141	HxCB 36 36	62 25.46 60 25.61	191447 5202	yes 1.27	9287	0.011173	-0 00124	1342	no	0.681	_
110 DOD 100	HxCB 36	2 25.60	4085	yes			0.00124	26	110	0.001	
116 PCB 130	HxCB 36	50 26.00 52 25.99	5393 4382	1.23 yes	9775	0.012988	-0.00137	29 27	no	0.617	-
117 PCB 137	36 HVCB 36	26.23	1622	1.25	2916	0.003936	-0.00139	10	yes	0.607	-
118 PCB 164	36	50 26.29	4460	yes 1.27	7968	0.007154	-0.00092	24	yes	0.913	-
119 PCB 138/163/129	HxCB 36 3 36	2 26.28 2 26.59	3508 175425	yes 1.3	310417	0.361162	-0.0012	21 945	no	0 705	
100 DOD 160	HxCB 36	2 26.61	134992	yes		0.00400		894			
120 PCB 160	HxCB 36	2 26.78	*	no	2	-0.00102	-0.00102	*	no	0.822	-
121 PCB 158	36 HxCB 36	26.96	15360 12489	1.23	27849	0.022729	-0.00084	77	no	1.004	-
122 PCB 128/166	36	27.80	16645	1.27	29781	0.031546	-0.00109	73	no	0.774	-
123 PCB 159	HXCB 36 36	52 27.79 50 NotFnd	13136	yes *	*	-0.00119	-0.00119	72 *	no	1.179	-
124 000 162	HxCB 36	2 28.76	*	no	615	0.00407	0.00407	*		4 404	
124 FOD 102	HxCB 36	29.05 2 29.06	283	no	615	~0.00127	-0.00127	*	yes	1.101	-
125 PCB 167	36 HxCB 36	0 29.51 2 29.53	6749 6053	1.12 ves	12802	0.008454	-0.00148	19 21	no	0.946	-
126 PCB 156/157	36	0 30.68	14739	1.19	27156	0.018083	-0.00137	35	no	1.017	-
127 PCB 169	HXCB 36 36	2 30.71 0 NotFnd	12416	yes *	*	-0.00146	-0.00146	35 *	no	0.954	-
129 000 199	HxCB 36	2 34.11	*	no *		0.00414	0.00444	*		4.040	
120 FCD 100	HpCB 39	6 24.23	*	no		~0.00114	-0.00114	*	no	1.012	-
129 PCB 179	39 HpCB 39	4 24.52	13808 12591	1.1 ves	26399	0.025684	-0.0011	69 68	no	1.047	-
130 PCB 184	39	4 NotFnd	*	*	*	-0.0012	-0.0012	*	no	0.961	-
131 PCB 176	прСВ 39 39	o 25.00 4 25.33	4288	no 1.17	7937	0.007873	-0.00113	* 21	no	1.027	-
132 DOB 100	HpCB 39	6 25.32	3649	yes	*	0.00400	0.00100	19		0.000	
102 FUD 100	39 HpCB 39	4 Not-nd 6 25.75	*	no	-	~0.00129	~0.00129	*	no	0.899	-
133 PCB 178	39 HpCB 39	4 27.00 6 27.01	6399 6469	0.99	12866	0.018153	-0.0016	30 33	no	0.722	-
134 PCB 175	39	4 27.60	1116	1.07	2161	0.002926	-0.00154	5	no	0.753	-
135 PCB 187	HpCB 39 39	6 27.62 4 27.87	1045 44121	yes 1.04	86563	0.121953	-0.0016	5 211	no	0.723	-
136 DCP 193	HpCB 39	6 27.88	42442	yes		0.00475	0.004	213		0.74-	
100 FUD 102	HpCB 39	6 28.10	*	no	-	-0.00155	-0.00155	*	no	0.747	-

407 DCD 400	204	00.40	00407	4 00					400			
137 PGB 183	394 HpCB 396	28.48	30437 28102	1.08	58539	0,051356		-0.00114	138	yes	1.162	-
138 PCB 185	394	NotFnd	*	yes *	*	-0.00155		-0.00155	*	no	0.851	-
	HpCB 396	28.56	*	no					*			
139 PCB 174	394	NotFnd	*	*	*	~0.00136		~0.00136	*	no	0.97	-
440 DCD 477	HpCB 396	28.72	*	no	20745	0.044020		0.004.4	*		0.040	
140 FOD 177	HpCB 396	29.10	187923	ves	30/15	0.041030		-0.0014	82 82	no	0.945	-
141 PCB 181	394	NotFnd	*	*	*	-0.00148		-0.00148	*	no	0.892	-
	HpCB 396	29.56	*	no					*			
142 PCB 171/173	394	29.78	10851	1.11	20599	0.022136		-0.0014	47	no	0.948	-
143 PCB 172	пров 390 394	29.70	9740 1224	1.07	2371	0.002544		-0.00139	48	no	0.95	-
	HpCB 396	31.42	1147	yes	2071	01002011		0.00.00	6		0.00	
144 PCB 192	394	NotFnd	*	*	*	-0.00122		-0.00122	*	no	1.085	-
145 DCD 102/190	HpCB 396	31.74	*	no	405044	0 444074		0.00000	*		4 000	
145 PCB 193/180	394 HpCB 396	32.13	60210	1.08	125244	0.1113/4		-0.00096	259	no	1.383	-
146 PCB 191	394	32.50	1498	0.95	3076	0.002318		-0.00098	6	no	1.352	-
	HpCB 396	32.48	1578	yes					6			
147 PCB 170	394	33.45	11990	1.12	22734	0.024957		~0.00104	47	no	1.271	-
148 PCB 100	HpCB 396	33.45	10744	yes	12507	0.010204		0.00009	45		1 2/5	
140 - 00 130	HpCB 396	34.02	6743	ves	15597	0.010304		-0.00096	28	yes	1.545	-
149 PCB 189	394	36.87	2159	1.15	4038	0.002708		-0.00043	14	no	0.944	-
	HpCB 396	36.88	1880	yes					16			
150 PCB 202	428	29.26	3690	1	7365	0.010135		-0.00188	16	no	0.988	-
151 PCB 201	428	29.20	1720	0 81	3854	0 004192		-0.00186	10	no	0 997	-
	OcCB 430	30.18	2134	ves	0004	0.004102		0.00100	8	110	0.007	
152 PCB 204	428	NotFnd	*	*	*	-0.00193		-0.00193	*	no	0.962	-
450 000 407	OcCB 430	30.89	*	no					*			
153 PCB 197	428 OcCB 430	31.13	718 740	0.97	1458	-0.00212		-0.00212	*	yes	0.876	-
154 PCB 200	428	31.12	20	0.85	44	-0.00185		-0.00185	*	ves	1.006	-
	OcCB 430	31.24	24	no					*	,		
155 PCB 198/199	428	NotFnd	*	*	*	~0.00284		~0.00284	*	no	0.654	-
156 DCB 106	OcCB 430	34.19 NotEnd	*	no *		0.00070		0.00070	*		0.074	
100 PCB 190	420 OcCB 430	34.92	*	00		-0.00276		-0.00276	*	no	0.674	-
157 PCB 203	428	35.12	2653	0.9	5588	0.009196		-0.00282	11	no	0.659	-
	OcCB 430	35.12	2935	yes					10			
158 PCB 195	428	NotFnd	*	*	*	-0.00156		-0.00156	*	no	1.005	-
150 PCB 10/	UCUB 430 428	30.59	-3785 17	no 0.80	-9039 17	.0.00709	DCD 104 NDD	0.00142	15	vl	1 001	
100 1 00 104	OcCB 430	39.22	-4253	OK	-0000.17	-0.00780	FOD 194 NDIX	~0.00143	12	XL.	1.091	-
160 PCB 205	428	NotFnd	*	*	*	-0.00143		-0.00143	*	no	1.091	-
	OcCB 430	39.77	*	no					*			
161 PCB 208	462	NotFnd	*	*	*	-0.00159		-0.00159	*	no	1.023	-
162 PCB 207	462	NotEnd	*	*	*	-0.00123		-0.00123	*	no	1 32	-
	NoCB 464	37.32	*	no				01001140	*			
163 PCB 206	462	NotFnd	*	*	*	~0.00158		~0.00158	*	no	1.027	-
104 000 000	NoCB 464	41.70	*	no		0.00000		0.00000	*			
164 PCB 209	498 DCB 500	13 54	*	" no		-0.00263		-0.00263	*	no	1.04	-
165 PCB 1L	200	8.98	218884	3.48	281700	0.18552		0.001	3644	no	0.824	94
	202	8.97	62816	yes					340			
166 PCB 3L	200	10.17	193011	3.51	248075	0.157899		0.001	3178	no	0.852	80
167 PCB /I	202	10.16	55064 71778	yes	115/00	0 115468		0	298	20	0.542	50
10/ 100 42	236	10.28	43712	ves	115450	0.115400		0	3962	110	0.043	59
168 PCB 15L	234	12.93	215276	1.61	348881	0.17618		0	2432	no	1.074	90
	236	12.91	133605	yes					1721			
169 PCB 19L	268	11.68	69652	1.07	134780	0.126456		0.001	639	no	0.578	64
170 PCB 37L	268	16.68	190813	1.06	370823	0.218493		0.001	472	no	1 987	111
	270	16.67	180010	yes					820			
171 PCB 54L	302	13.06	61324	0.79	139086	0.125491		0	1102	no	1.297	64
172 000 941	304	13.06	77763	yes	240270	0.044404		0	1632		4 700	400
1/2 PUB OIL	302	21.41	141639	0.8 Ves	318376	0.214434		0	2435	no	1.738	109
173 PCB 77L	302	21.85	133594	0.82	296453	0.206909		0	732	no	1.677	105
	304	21.82	162859	yes					2199			
174 PCB 104L	338	15.93	87016	1.63	140304	0.163548		0	6357	no	1.156	83
175 PCB 123	340	15.93 23.49	53287 187960	yes 1.65	301886	0 210076		0	2470	20	1 026	107
175 FOD 125L	340	23.50	113927	ves	301000	0.210070		0	2008	110	1.930	107
176 PCB 118L	338	23.77	180587	1.58	294988	0.208513		0	1963	no	1.906	106
	340	23.76	114401	yes				-	2379			
177 PCB 114L	338	24.26	172893	1.63	278877	0.21191		0	1848	no	1.773	108
178 PCB 105L	340	24.20 24.83	178712	yes 16	290562	0.214783		0	∠∠19 1853	no	1.822	100
	340	24.81	111850	yes	200002	J.2 17/00		v	2235	10	1.022	108
179 PCB 126L	338	27.69	169689	1.56	278696	0.21633		0	1646	no	1.735	110
100 000 450	340	27.67	109007	yes	4	0 4 45000		~	1999		4 10 1	 .
160 PGB 155L	372	19.61 19.61	86996	1.27 Vec	155356	0.145963		0	5503 4541	no	1.404	74
181 PCB 167L	372	29.50	175506	1.26	314773	0.196734		0	3353	no	2.11	100
	374	29.50	139267	yes				-	1118			
182 PCB 156L/157L	372	30.68	330468	1.32	580569	0.398548		0	5060	no	1.921	101
183 PCB 160	374	30.69	250101	yes	102202	0 130044		0	1610	200	1 996	74
	074	24.00	00170	1.20	100000	0.100044		U	644	10	1.000	/ 1

184	PCB 188L	406	24.20	82726	1.07	160216	0.158924		0	4021	no	1.329	81
185	DCB 1801	400	24.21	77490	yes	450044	0 457000		0	4125		1.0.10	
100	FOD TOOL	400	32.09	76502	1.09	159914	0.15/328		0	1847	no	1.349	80
186	PCB 1701	400	33 42	72909	1 07	140006	0 159/12		0	2829		4.40	
100	FOD THE	400	33.42	69009	1.07	140906	0.156415		0	1586	no	1.18	81
187	PCB 189	406	36.94	161506	1 00	240655	0 404056		0	2029		0.457	07
107	FOD 109L	400	30.04	140140	1.00	310655	0.191056		0	2869	no	2.157	97
199	DCB 2021	400	20.25	69707	yes	444674	0 495994		0	2509			
100	FODZUZL	440	29.25	75044	0.9	1440/1	0.135224		0	5076	no	1.419	69
180	DCB 205	442	29.27	104760	yes	219057	0 499020		0	2271		4 504	~~
103	1002032	440	20 72	104/09	0.93	210057	0.100929		0	2074	no	1.531	96
100	DCB 2081	442	38.73	F0600	yes	424472	0 450004		•	1887			-
130	FOD 200L	4/4	36.29	74570	0.0	134172	0.156231		0	3439	no	1.139	79
101	DCD 2061	470	30.20	/43/0	yes	400000	0 47 4700			2036			
191	FGB 200L	474	41.70	44392	0.8	100030	0.174728		0	2491	no	0.76	89
102	DCD 200	4/0	41.73	00037	yes	00000	0.47040			1451			
192	FCD 209L	510	43.54	51297	1.2	93999	0.17218		0	2223	no	0.724	88
102	DCD 291	012	43.03	42702	yes	400.404	0.04054		0.004	1/46			
193	PCB ZoL	200	14.41	210029	1.04	429481	0.24651		0.001	617	no	2.039	113
104	PCB Cleanup Standard	270	14.41	210652	yes	040040	0.044500			1076			
194	PCB TTL DCB Cleanup Standard	330	21.83	133113	1.65	213940	0.214588		0	5031	no	1.343	98
105	PCB Cleanup Standard	340	21.84	80827	yes					2598			
195	PCB 176L	406	26.98	57098	1.08	110194	0.198259		0	2585	no	0.733	91
106	PCB Cleanup Standard	400	20.97	53096	yes					2658			
190	PCB 31L	200	NOLFIG			-			0.001		no	1.934	
107	PCB Audit Standard	270	14.24	-	no *								
197	PCB 95L	338	NotFind			•			0		no	0.946	
100	PCB Audit Standard	340	17.73	<u>.</u>	no				_				
190	PCB 153L	372	Not-na		~	•			0		no	1.225	
400	PCB Audit Standard	374	25.40	4040000	no								
199	PCB 9L	234	11.18	1240308	1.61	2013045	10.15711		-	15569	no	-	-
200	PCB Recovery Standard	230	11.19	//2/38	yes					11069			
200	PCB 52L	302	15.35	41/980	0.81	933049	7.276455		-	4908	no	-	-
	PCB Recovery Standard	304	15.36	515068	yes					10618			
201	PCB IVIL	338	19.77	502581	1.63	810721	7.265971		-	20096	no	-	-
	PCB Recovery Standard	340	19.76	308140	yes					10454			
202	PCB 138L	372	26.57	4/1215	1.32	828212	7.573036		-	11121	no	-	-
	PCB Recovery Standard	374	26.56	356997	yes					14586			
203	PCB 194L	440	39.18	395957	0.93	823163	7.494846		-	10166	no	-	-
	PCB Recovery Standard	442	39.17	427206	yes					7317			
	Chlavahishaasda							-					
	Diableashishaasda						-0.00063	0	-0.00063				
	Trichlershiphenyls						0.050195	5	-0.00329				
	Teterebland						0.757208	15	-0.00461				
	l etrachioropipnenyis						1.180809	23	-0.00358				
	Pentachiorobiphenyis						0.654269	17	-0.0012				
	mexacriloropiphenyls						1.374099	20	-0.00291				
	neptachioropiphenyls						0.446124	14	-0.0016				
	Octachioropiphenyls						0.023523	3	-0.00284				
	Nonachioropiphenyls						-0.00159	0	-0.00159				
	Decachioropiphenyl						-0.00263	0	-0.00263				
	PCB (total)						4.486227						



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Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

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Total DiCB F1



Total DiCB F1





9.60

Total DiCB labeled F1

8.80

9.00

9.20

9.40

8.60

0



9.80

10.00

10.20

10.40

10.60

🗝 min

10.80

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Total TriCB labeled F2



13.40



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
Printed:	February 20, 2016 02:11:48 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15

Total TeCB F2















Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
Printed:	February 20, 2016 02:11:48 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15











Total TeCB labeled F3



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Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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Total TeCB labeled F4



Total TeCB labeled F4



325.8805

701 -

- min

1.649e+004

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples 1668A.gld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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Total PeCB labeled F3



0 13.75 14.25 14.00 14.50 14.75 15.00 15.25 15.50 15.75 16.00 16.25 16.50 16.75

¬ min

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
Printed:	February 20, 2016 02:11:48 PM Eastern Standard Time



AutoSpec - Wiltima Analytics

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
Printed:	February 20, 2016 02:11:48 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15



23.00

23.50

24.00

24.50

25.00

25.50

26.00

26.50

27.00

27.50

28.00

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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Total HxCB F4







Total HxCB labeled F4



Total HxCB labeled F4



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Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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23.00

23.50

24.00

24.50

25.00

25.50

26.00

26.50

27.00

27.50

0

28.00

min -

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
Printed:	February 20, 2016 02:11:48 PM Eastern Standard Time



Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:09:39 PM Eastern Standard Time
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ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15

Total OcCB F7





Total OcCB labeled F7





Total OcCB labeled F7



Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:February 20, 2016 02:09:39 PM Eastern Standard TimePrinted:February 20, 2016 02:11:48 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15

Total NoCB F7







Total NoCB labeled F7



Total NoCB labeled F7



AutoSpec - Ultima 3 Maxxam Analytics

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C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

Last Altered: February 20, 2016 02:09:39 PM Eastern Standard Time Printed: February 20, 2016 02:11:48 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15

Total DeCB F7







Total DeCB labeled F7





Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20,	2016	02:09:39	ΡM	Eastern	Standard	Time
Printed:	February 20,	2016	02:11:48	ΡM	Eastern	Standard	Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15

lockmass F1





lockmass F3

M2160218D	S010 S	Smooth(SC	3,3x1)									F3:SIR	of 14 channels.E	+
100-		lockma	ss F3;14.26	6;16727		lockmass	s F <u>3;</u> 15.22;	10966					292.982	24
	~~~												1.587e+00	)6
-														
1														
%														
_														
-														
13	75	14.00	1/ 25	14 50	1/ 75	15.00	15.25	15 50	15.75	16.00	16.05	10.50		in
10		1-1.00	17.20	14.00	17.75	10.00	10.20	10.00	15.75	10.00	10.20	10.50	10.70	

## lockmass F4

M2160218DS010 Smooth(SG,3x1)				F4:SIR of 14 channels.EI+
100- lockmass F4;18	3.49;25514	lockmass F4	;20.77;12542	330.9792
				<del>2.3</del> 20e+006
-				
-				
%				
_				
-				
0-4				min min
17.00 17.50 18.00 18.50	) 19.00 19.50	20.00 20.50	21.00 21.50	22.00 22.50

# Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered: February 20, 2016 02:09:39 PM Eastern Standard Time Printed: February 20, 2016 02:11:48 PM Eastern Standard Time

ID: Anchor QEA, PG-WS-1-MUS-COC-160104, Ti Description: BRP510-01R:D1 Vial: 10 Date: 18-FEB-2016 Time: 01:59:15

#### lockmass F5





#### lockmass F7 M2160218DS010 Smooth(SG,3x1) F7:SIR of 18 channels,EI+ 454.9728 lockmass F7;37.28;10116 lockmass F7;41.98;8733 lockmass F7;44.43;3348 100 003e+005 % ⊤ min 0 36.0 37.0 38.0 39.0 40.0 41.0 42.0 43.0 44.0 45.0 46.0
























Filename M2160218DS011 Acquired 18/02/2016 2:49

Cali File M2160218D_209

Dil Fac 1.00

# Sample ID BRP511-01R Comments Instrument File Ultima 3 Sample Size 10.019

 $(C_{ij})$ 

								Isomers					
Name 1 PCB 1	mass 188 MoCB 190	RT NotFnd 8 98	Area *	ratio *	Tot Area *	ng -0.00073	Code		DL -0.00073	S/N	Mod no	rrf 1.082	Rec -
2 PCB 2	188 MoCR 100	NotFnd	*	*	*	-0.00066			-0.00066	*	no	1.2	-
3 PCB 3	188 MoCR 190	NotFnd	*	*	*	-0.00073			-0.00073	*	no	1.079	-
4 PCB 4	222 DICD 224	NotFnd	*	*	*	-0.00238			-0.00238	*	no	0.954	-
5 PCB 10	DICB 224 222	NotFnd	*	no *	*	-0.00185			-0.00185	*	no	1.229	-
6 PCB 9	DICB 224 222	10.37 NotFnd	*	no *	*	-0.00288			-0.00288	*	no	1.311	-
7 PCB 7	DICB 224 222	11.18 NotFnd	*	no *	*	-0.00324			-0.00324	*	no	1.165	-
8 PCB 6	DiCB 224 222	11.26 NotFnd	*	no *	*	-0.00286			-0.00286	*	no	1.319	-
9 PCB 5	DICB 224 222	11.34 NotFnd	*	no *	*	-0.00383			-0.00383	*	no	0.983	-
10 PCB 8	DiCB 224 222	11.50 11.55	* -5925	no 1.56	-9723.08	-0.00692	PCB 8 NDR		-0.00259	* 127	хL	1.456	_
11 PCB 14	DiCB 224 222	11.55 NotFnd	-3798.08 *	ок *	*	-0.00283			-0.00283	7 *	no	1.332	-
12 PCB 11	DiCB 224 222	12.26 <b>12.66</b>	* 5076	no 1.45	8589	0.006935			~0.00293	* 75	no	1 285	
13 PCB 13/12	DiCB 224 222	12.66 NotEnd	3513	yes *	*	-0.00312			-0.00312	4	10	1.200	-
14 PCB 15	DICB 224	12.81 12.95	* 17221	no 1.53	28483	0.022437			.0.00433	*	110	0.971	-
15 PCB 19	DICB 224	12.96	11262	yes	2149	0.022437			-0.00404	12	110	0.071	-
16 PCB 30/18	TriCB 258	11.70	1135	yes	2140	0.0004458			-0.00164	16	по	0.899	-
17 PCB 30/10	TriCB 258	12.49	12422	yes	25967	0.030271			-0.00181	180 173	no	0.813	-
17 PCB 17	TriCB 258	12.69	2683	yes	5599	0.007768			-0.00216	33 34	no	0.683	-
18 PCB 27	TriCB 258	12.78 12.78	2721 2568	1.06 yes	5289	0.005			-0.00147	33 32	no	1.002	-
19 PCB 24	256 TriCB 258	NotFnd 12.87	*	no	*	-0.00172			-0.00172	*	no	0.855	-
20 PCB 16	256 TriCB 258	<b>12.91</b> 12.90	<b>4759</b> 4641	1.02 · yes	9400	0.01779			-0.00294	56 47	no	0.501	-
21 PCB 32	256 TriCB 258	<b>13.14</b> 13.14	<b>4749</b> 4714	1.01 yes	9463	0.008204			-0.00135	58 56	no	1.093	-
22 PCB 34	256 TriCB 258	NotFnd 13.74	*	* no	*	-0.00078			-0.00078	*	no	1.235	-
23 PCB 23	256 TriCB 258	NotFnd 13.82	* *	* no	*	-0.00093			-0.00093	*	no	1.033	-
24 PCB 26/29	256 TriCB 258	<b>13.97</b> 13.99	<b>11674</b> 11649	1 ves	23323	0.018095			-0.00079	77 82	no	1.221	-
25 PCB 25	256 TriCB 258	<b>14.10</b> 14.10	<b>5764</b> 5488	1.05 ves	11251	0.00799			-0.00072	37	no	1.334	-
26 PCB 31	256 TriCB 258	14.26	59026	1.01 Ves	117236	0.083188			-0.00072	401	no	1.335	-
27 PCB 28/20	256 TriCB 258	14.42 14.43	167179 163387	1.02	330565	0.263083			-0.00081	1079	no	1.191	-
28 PCB 21/33	256 TriCB 258	14.55 14.53	29431 28769	1.02	58200	0.043931			~0.00077	179	no	1.255	-
29 PCB 22	256	14.75	23511	0.98	47504	0.039938			-0.00085	141	no	1.127	-
30 PCB 36	256	NotFnd	23993	yes *	*	-0.00061			-0.00061	154	no	1.57	-
31 PCB 39	256	15.83	1229	1.07	2380	0.001708			-0.00073	7	no	1.32	-
32 PCB 38	256	NotFnd	*	yes *	*	~0.00067			-0.00067	7 *	no	1.438	-
33 PCB 35	256	16.18 NotFnd	*	no *	*	-0.0006			-0.0006	* *	no	1.597	-
34 PCB 37	TriCB 258 256	16.45 <b>16.70</b>	23060	no 1	46076	0.032366			-0.00106	* 138	no	0.906	-
35 PCB 54	TriCB 258 290	16.70 NotFnd	23016	yes *	*	-0.00112			-0.00112	140 *	no	0.911	-
36 PCB 53/50	TCB 292 290	13.08 14.12	* 8939	no 0.76	20746	0.029344			-0.00173	* 66	no	0.654	_
37 PCB 45/51	TCB 292 290	14.11 <b>14.48</b>	11807 <b>5244</b>	yes 0.79	11870	0.017358			-0.00178	69 36	no	0.633	-
38 PCB 46	TCB 292 290	14.49 <b>14.64</b>	6626 <b>3185</b>	yes 0.85	6931	0.011584			-0.00204	37 25	no	0.554	-
39 PCB 52	TCB 292 290	14.64 <b>15.36</b>	3746 67639	yes 0.81	151522	0.168124			-0.00135	21 489	no	0.834	-
40 PCB 73	TCB 292 290	15.38 NotFnd	83883	yes *	*	-0.00139			-0.00139	476	no	0.813	-
41 PCB 43	TCB 292 290	15.46 15.53	* 3163	no 0,87	6798	0.012182			-0 00210	* 22	VAC	0.516	_
42 PCB 69/49	TCB 292	15.52	3636	yes	61340	0.066694			-0.00422	19	yes	0.010	-
	TCB 292	15.64	33895	yes	01340	0.000001			-0.00133	201 191	110	0.851	-

43 P	CB 48		290	15.83	17352	0.79	39376	0.054124		-0.00168	122	no	0.673	-
	00 4449405	TCE	292	15.84	22023	yes					119			
44 P	CB 44/47/65	TCE	290	15.96	64305 90521	0.8	144836	0.171157		-0.00144	382	no	0.783	-
45 P	CB 59/62/75	TOL	290	16.16	8669	0.82	19292	0.017565		-0.00111	372 55	no	1 0 1 7	-
		TCE	292	16.17	10623	yes				0.00111	52			
46 P	CB 42		290	16.28	12666	0.85	27619	0.037504		-0.00166	83	no	0.682	-
47 P	CB 40/41/71	TCE	292	16.30	14953	yes	64070	0 092116		0.00450	78		0.704	
47.1	00 -01 - 111	TCE	292	16.58	35537	ves	04575	0.003110		-0.00156	158	10	0.724	-
48 P	CB 64		290	16.72	16440	0.81	36862	0.037007		-0.00123	112	no	0.922	-
40 0	CD 70	TCE	292	16.71	20422	yes					107			
49 P	CB 72	TCP	290	17.20	996 1393	0.72	2389	0.001695		~0.00133	3	yes	1.304	-
50 P	CB 68	102	290	17.40	819	1.03	1612	-0.00143		-0.00143	*	ves	1.22	-
	~~ ~~	TCE	292	17.40	793	no					*			
51 P	CB 57	тсе	290	17.68	399	0.82	884	-0.00142		-0.00142	*	yes	1.221	-
52 P	CB 58	100	290	NotFnd	*	*	*	-0.00168		-0.00168	*	no	1.035	-
		TCB	292	17.83	*	no					*			
53 P	CB 67	тор	290	17.95	1980	0.78	4526	0.003111		-0.00129	7	yes	1.347	-
54 P	CB 63	108	292	18.13	2040	yes 0.76	4270	0.003155		-0.00139	6	Ves	1 253	
		TCB	292	18.13	2425	yes		0.000.00		0.00100	7	,00	1.200	-
55 P(	CB 61/70/74/76		290	18.34	46676	0.79	106100	0.088573		-0.00157	110	no	1.109	-
56 P(	CB 66	ICB	292 290	18.34	59424 19825	yes 0.77	45532	0 033944		-0.0014	108	20	1 9/1	
	00.00	TCB	292	18.58	25707	ves	40002	0.055544		-0.0014	65	110	1.241	-
57 P0	CB 55		290	NotFnd	*	*	*	~0.00174		-0.00174	*	no	0.998	-
58 D/	CB 56	TCB	292 200	18.71	*	no	E075	0.005460		0.00475	*		0.005	
JU FV	00 30	тсв	292	19.05	3206	ves	5075	0.005462		-0.00175	9	no	0.995	-
59 P(	CB 60		290	19.22	2202	0.78	5012	0.004697		-0.00176	8	no	0.988	-
60 50	CB 80	тсв	292	19.22 NotEnd	2811	yes *	*	0.004.40		0.00440	7		4 00 4	
		тсв	292	19.48	*	no	-	-0.00142		-0.00142	*	no	1.224	-
61 P(	CB 79		290	NotFnd	*	*	*	~0.00119		-0.00119	*	no	1.462	-
60 00	CD 70	тсв	292	20.61	*	no		0.00405		0.00407	*			
02 -1	0578	тсв	290	21.06	*	no		-0.00135		-0.00135	*	no	1.287	-
63 PC	CB 81		290	NotFnd	*	*	*	-0.00169		-0.00169	*	no	1.027	-
64 00	CP 77	тсв	292	21.43	*	no	22.42	0.004040		0.00400	*		4 077	
04 110	0077	тсв	292	21.87	1284	ves	2343	0.001040		-0.00162	3 3	no	1.077	-
65 PC	CB 104		326	NotFnd	*	*	*	-0.00043		-0.00043	*	no	1.094	-
66 D(	~R 06	PeCB	328	15.94	* 647.0	no 1 55	1065.0	0.00106		0.00054	*		0.074	
00 F (	00 90	PeCB	328	16.16	-418	OK	-1005.9	-0.00106	PCB 30 NUK	-0.00054	12	XL	0.874	-
67 PC	CB 103		326	17.31	836	1.63	1347	0.00159		-0.00076	8	yes	0.739	-
60 D/	28.04	PeCB	328	17.33 NotEnd	511	yes		0.00404		0.00404	7		0.54	
00 F C	55 54	PeCB	328	17.47	*	no		-0.00104		-0.00104	*	no	0.54	-
69 PC	CB 95		326	17.75	31365	1.63	50607	0.064668		-0.00082	256	yes	0.683	-
70 00	CP 400/02/402/0	PeCB	328	17.77	19242	yes	5500	0.007700		0.00004	243		0.040	
70 FC	56 100/95/102/9	PeCB	328	17.93	2056	ves	2203	0.007762		-0.00091	19	yes	0.619	-
71 PC	CB 88/91		326	18.34	2440	1.56	4007	0.005592		-0.0009	20	yes	0.625	-
72 00	<b>~</b> D 04	PeCB	328	18.31	1567	yes	5240	0.000070		0.00405	20		0.504	
12 FC	50 04	PeCB	328	18.50	2206	ves	5310	0.008673		-0.00105	27	no	0.534	-
73 PC	CB 89		326	NotFnd	*	*	*	-0.00096		-0.00096	*	no	0.582	-
74 00	PB 121	PeCB	328	18.84 NotEnd	*	no *	*	0.00074		0.00074	*		0.704	
74 FC	JD 121	PeCB	328	19.08	*	no		-0.00074		-0.00074	*	no	0.761	-
75 PC	CB 92	_	326	19.36	7775	1.74	12236	0.017857		-0.00094	62	no	0.598	-
76 00	B 113/00/404	PeCB	328 326	19.35	4461	yes	85144	0 104025		0.00070	55		0.74	
10 FC	55 115/30/101	PeCB	328	19.76	32006	yes	00441	0.104933		-0.00079	413 382	110	0.71	-
77 PC	CB 83/99		326	20.23	26270	1.61	42640	0.05969		~0.0009	191	no	0.623	-
78 00	CB 112	РеСВ	328 326	20.22 NotEnd	16370	yes *	*	-0.00060		0.00020	181		0.040	
70 FC	0112	PeCB	328	20.33	*	no		-0.00069		-0.00069	*	no	0.819	-
79 PC	CB 109/119/86/9	7/125/	326	20.62	15821	1.58	25813	0.031002		-0.00077	67	no	0.726	-
00 DC	D 117/116/05	PeCB	328	20.62	9992	yes	40405	0.044470		0.00074	63		0 700	
00 FG	56 11//110/05	DeCD	328	21.19	3936	ves	10465	0.011476		-0.00071	44 42	no	0.796	-
81 PC		Feud						0.004770		~0.00075	242	20	0.75	-
82 DC	CB 110/115	Peub	326	21.32	34605	1.64	55662	0.064772		0100010	£.++£.	110		
04 FU	CB 110/115	PeCB	326 328 326	21.32 21.32 21.57	34605 21056	1.64 yes 1.55	25562	0.064772		0.004	223	10	0 564	
	CB 110/115 CB 82	PeCB PeCB	326 328 326 328	21.32 21.32 21.57 21.59	34605 21056 1551 999	1.64 yes 1.55 yes	55662 2550	0.064772		-0.001	223 10 10	no	0.564	-
83 PC	CB 110/115 CB 82 CB 111	PeCB PeCB PeCB	326 328 326 328 328	21.32 21.32 21.57 21.59 NotFnd	34605 21056 1551 999 *	1.64 yes 1.55 yes *	55662 2550 *	0.064772 0.003941 -0.00069		-0.001 -0.00069	223 10 10 *	no no	0.564 0.809	-
83 PC	CB 110/115	PeCB PeCB PeCB PeCB	326 328 326 328 326 328 328	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFad	34605 21056 1551 999 * *	1.64 yes 1.55 yes * no	55662 2550 *	0.003941 -0.00069		-0.001 -0.00069	223 10 10 *	no no	0.564	-
83 PC 84 PC	CB 110/115 CB 82 CB 111 CB 120	PeCB PeCB PeCB PeCB	326 328 326 328 326 328 328 328 328	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25	34605 21056 1551 999 * * *	1.64 yes 1.55 yes * no *	55662 2550 * *	0.003941 -0.00069 -0.00059		-0.001 -0.00069 -0.00059	223 10 10 * *	no no no	0.564 0.809 0.951	-
83 PC 84 PC 85 PC	CB 110/115 CB 82 CB 111 CB 120 CB 108/124	PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20	34605 21056 1551 999 * * * * * * 1903	1.64 yes 1.55 yes * no * no 1.57	55662 2550 * * 3112	0.003941 -0.00069 -0.00059 0.002419		-0.001 -0.00069 -0.00059 -0.00096	223 10 10 * * * 7	no no no no	0.564 0.809 0.951 1.122	- - -
83 PC 84 PC 85 PC	CB 110/115 CB 82 CB 111 CB 120 CB 108/124	PeCB PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326 328 326 328	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20 23.21 23.42	34605 21056 1551 999 * * * * * * 1903 1209 5210	1.64 yes 1.55 yes * no 1.57 yes	55662 2550 * 3112	0.003941 -0.00069 -0.00059 0.002419		-0.001 -0.00069 -0.00059 -0.00096	223 10 10 * * * 7 8	no no no no	0.564 0.809 0.951 1.122	-
83 PC 84 PC 85 PC 86 PC	CB 110/115 CB 82 CB 111 CB 120 CB 108/124 CB 107	PeCB PeCB PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20 23.21 23.42 23.40	34605 21056 1551 999 * * * * * 1903 1209 5219 3592	1.64 yes 1.55 yes * no * no 1.57 yes 1.45 yes	55662 2550 * * 3112 8812	0.064772 0.003941 -0.00069 -0.00059 0.002419 0.0067		-0.001 -0.00069 -0.00059 -0.00096 -0.00093	223 10 10 * * * 7 8 18 18	no no no no yes	0.564 0.809 0.951 1.122 1.147	- - -
83 PC 84 PC 85 PC 86 PC 87 PC	28 110/115 28 82 28 111 28 120 28 108/124 28 107 28 107 28 123	PeCB PeCB PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326 328 326 328 326	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20 23.21 23.42 23.40 NotFnd	34605 21056 1551 999 * * * * * <b>1903</b> 1209 5219 3592 *	1.64 yes 1.55 yes * no * no 1.57 yes 1.45 yes *	55662 2550 * * 3112 8812 *	0.064772 0.003941 -0.00069 -0.00059 0.002419 0.0067 -0.0012		-0.001 -0.00069 -0.00059 -0.00096 -0.00093 -0.0012	223 10 10 * * * * 7 8 18 18	no no no no yes no	0.564 0.809 0.951 1.122 1.147 0.894	
83 PC 84 PC 85 PC 86 PC 87 PC	28 110/115 28 82 28 111 28 120 28 108/124 28 107 28 102 28 106	PeCB PeCB PeCB PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20 23.21 23.40 NotFnd 23.51 NotFnd 23.51	34605 21056 1551 999 * * * 1903 1209 5219 3592 * *	1.64 yes 1.55 yes * no * no 1.57 yes 1.45 yes * no *	55662 2550 * * 3112 8812 * *	0.064772 0.003941 -0.00069 -0.00059 0.002419 0.0067 -0.0012		-0.001 -0.00069 -0.00059 -0.00096 -0.00093 -0.0012	223 10 10 * * * 7 8 18 18 18 * *	no no no no yes no	0.564 0.809 0.951 1.122 1.147 0.894	-
83 PC 84 PC 85 PC 86 PC 87 PC 88 PC	CE 110/115 CE 82 CE 111 CE 120 CE 108/124 CE 108/124 CE 107 CE 123 CE 123 CE 123	PeCB PeCB PeCB PeCB PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20 23.21 23.40 NotFnd 23.51 NotFnd 23.63	34605 21056 1551 999 * * * 1903 1209 5219 3592 * * *	1.64 yes 1.55 yes * no 1.57 yes 1.45 yes * no *	55662 2550 * * 3112 8812 * *	0.064772 0.003941 -0.00069 -0.00059 0.002419 0.0067 -0.0012 -0.00088		-0.001 -0.00069 -0.00059 -0.00096 -0.00093 -0.0012 -0.00088	223 10 10 * * * 7 8 18 18 18 18 * *	no no no no yes no no	0.564 0.809 0.951 1.122 1.147 0.894 1.218	-
<ul> <li>83 PC</li> <li>84 PC</li> <li>85 PC</li> <li>86 PC</li> <li>87 PC</li> <li>88 PC</li> <li>89 PC</li> </ul>	28 110/115 28 82 28 111 28 120 28 108/124 28 108/124 28 107 28 106 28 106 28 106 28 118	PeCB PeCB PeCB PeCB PeCB PeCB PeCB PeCB	326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326 328 326	21.32 21.32 21.57 21.59 NotFnd 21.85 NotFnd 22.25 23.20 23.21 23.42 23.40 NotFnd 23.51 NotFnd 23.51 NotFnd 23.63 23.79	34605 21056 1551 999 * * * 1903 1209 5219 3592 * * * * * * * *	1.64 yes 1.55 yes * no 1.57 yes 1.45 yes * no 1.54	55662 2550 * * 3112 8812 * * * 90156	0.064772 0.003941 -0.00069 -0.00059 0.002419 0.0067 -0.0012 -0.00088 0.069981		-0.001 -0.00069 -0.00059 -0.00096 -0.00093 -0.0012 -0.00088 -0.00109	223 10 10 * * * 7 8 18 18 18 18 * * *	no no no no yes no no no	0.564 0.809 0.951 1.122 1.147 0.894 1.218 0.981	

90	PCB 122		326	NotFnd	*	*	• *	-0.00099	-0 00099	*	no	1 079	-
		PeC	B 328	24.08	*	no				*			
91	PCB 114	PaC	326	NotFnd	*	*	*	-0.00106	-0.00106	*	no	1.01	-
92	PCB 105	1 60	326	24.20	18035	1.55	29642	0.023534	-0.0011	58	no	0.977	-
		PeCI	3 328	24.85	11607	yes				59			
93	PCB 127	PeCI	326	NotEnd 26.20	*	no	*	-0.00087	-0.00087	*	no	1.23	-
94	PCB 126		326	NotFnd	*	*	*	-0.0011	-0.0011	*	no	0.977	-
05	DCD 155	PeCI	3 328	27.72 NotEnd	*	no *	*	0.00404	0.00404	*		0.007	
90	FCB 100	HxCl	3 362	19.63	*	no		-0.00151	-0.00131	*	no	0.997	-
96	PCB 152		360	NotFnd	*	*	*	-0.0016	-0.0016	*	no	0.813	-
97	PCB 150	HXCI	3 362 360	19.78 NotEnd	*	no *	*	-0.002	-0.002	*	no	0.65	-
		HxCl	362	19.88	*	no			0.002	*	110	0.00	
98	PCB 136	нуси	360	20.18	6740 5162	1.31	11901	0.014992	-0.00171	35	no	0.761	-
99	PCB 145	1 IXOI	360	NotFnd	*	yes *	*	-0.00197	-0.00197	*	no	0.662	-
100	DCD 149	HxCI	3 362	20.41	*	no		0.00007	0.00007	*			
100	FCB 140	HxCE	3 362	21.55	*	no		~0.00237	~0.00237	*	по	0.551	-
101	PCB 151/135		360	22.03	19168	1.38	33092	0.061122	-0.00251	80	no	0.519	-
102	PCB 154	HXCI	3 362	22.04 22.23	13924 1162	yes 1.28	2068	0.003209	-0.00211	75 6	no	0.618	-
		HxCE	3 362	22.22	906	yes			0100211	6		0.010	
103	PCB 144	HYCE	360	22.49 22.51	2140 1811	1.18	3950	0.006737	-0.00232	11	no	0.562	-
104	PCB 147/149	TIXO1	360	22.79	66311	1.33	116115	0.168106	-0.0029	210	yes	0.662	-
105	DCB 124/142	HxCE	3 362	22.80	49804	yes	2117	0.0051	0.00007	198		0.500	
105	FCB 134/143	HxCE	3 362	23.06	1452	yes	3117	0.0051	-0.00327	6	no	0.586	-
106	PCB 139/140	1	360	NotFnd	*	*	*	-0.00282	-0.00282	*	no	0.68	-
107	PCB 131	HXCE	3 362	23.31 NotFnd	*	no *	*	-0.00357	-0.00357	*	no	0.537	-
400	505 440	HxCE	3 362	23.49	*	no				*			
108	PCB 142	HxCF	360 3 362	NotFnd 23.65	*	*	*	-0.00306	~0.00306	*	no	0.626	-
109	PCB 132		360	23.88	7656	1.22	13930	0.023835	-0.00342	23	no	0.561	-
110	PCB 133	HxCE	3 362	23.88	6273	yes	3037	0 004422	0.00000	23		0.657	
110	1 00 100	HxCE	3 362	24.31	1280	yes	5057	0.004455	-0.00232	4	110	0.007	-
111	PCB 165	HVCE	360	NotFnd	*	*	*	-0.00251	-0.00251	*	no	0.765	-
112	PCB 146	TIXOL	360	24.88	17647	1.31	31075	0.042283	-0.00272	50	no	0.705	-
110	DOD 404	HxCE	3 362	24.86	13428	yes		0.00400	0.00100	48			
113	PCB 161	HxCE	360 3 362	NotFnd 25.01	*	no	•	-0.00198	-0.00198	*	no	0.97	-
114	PCB 153/168		360	25.43	143407	1.32	252500	0.284182	-0.00225	409	no	0.852	-
115	PCB 141	HxCE	3 362	25.45 25.61	109093 2852	yes 1 37	4931	0 00694	-0.00281	383	no	0.681	_
		HxCE	3 362	25.60	2079	yes	4001	0.00004	-0.00201	7	110	0.001	
116	PCB 130	HVCE	360	25.98	3414	1.25	6147	0.009555	-0.00311	10	no	0.617	-
117	PCB 137	TIXOL	360	26.21	1095	yes 1.54	1804	-0.00316	-0.00316	*	yes	0.607	-
440	DCD 464	HxCE	3 362	26.19	709	no	4055	0.005005	0.0004	*		0.040	
118	PCB 164	HxCE	360	26.29	2734	1.23 ves	4955	0.005205	-0.0021	7 8	yes	0.913	-
119	PCB 138/163/12	9	360	26.59	101766	1.3	179735	0.244661	-0.00272	270	no	0.705	-
120	PCB 160	HXCE	3 362 360	26.60 NotFnd	77968	yes *	*	-0.00233	-0.00233	259	no	0.822	-
		HxCE	362	26.78	*	no		0100200	0.00100	*	110	0.022	
121	PCB 158	HYCE	360	26.96 26.96	9049 7058	1.28	16106	0.015379	-0.00191	25	no	1.004	-
122	PCB 128/166	TIXOL	360	27.80	10432	1.32	18356	0.02275	-0.00248	23	no	0.774	-
123	PCB 150	HxCE	362	27.78 NotEnd	7924	yes *	*	.0.00098	0.00096	22		1 1 70	
120	. 55 105	HxCE	362	28.76	*	no		0.00000	-0.00000	*	10	1.179	-
124	PCB 162	HVOD	360	29.05	392	1.57	642	-0.00092	-0.00092	*	yes	1.101	-
125	PCB 167	ITXUE	, 362 360	29.00 29.53	250 4811	1.32	8444	0.006458	-0.00107	 22	no	0.946	-
400		HxCE	362	29.52	3634	yes				20			
126	PCB 156/157	HxCE	360	30.68	8671 6880	1.26 ves	15551	0.01205	-0.00099	35 33	no	1.017	-
127	PCB 169		360	NotFnd	*	*	*	-0.00106	-0.00106	*	no	0.954	-
128	PCB 188	HxCE	362 394	34.11 NotEnd	*	no *	*	-0.00116	-0.00116	*	no	1 0 1 2	_
.20	100 100	HpCB	396	24.23	*	no		0.00110	-0.00110	*	110	1.012	-
129	PCB 179	HnCP	394 306	24.52 24.52	8834 8055	1.1	16888	0.01889	-0.00112	51 48	no	1.047	-
130	PCB 184	npoe	394	NotFnd	*	yes *	*	-0.00122	-0.00122	*	no	0.961	-
194	DCD 476	HpCB	396	25.00	*	no	40.40	0.004052	0.00444	*		4 007	
137	FUD 1/0	НрСВ	394 396	<b>∠3.32</b> 25.31	2190 2156	yes	4346	0.004956	-0.00714	13 14	no	1.027	-
132	PCB 186		394	NotFnd	*	*	*	-0.0013	-0.0013	*	no	0.899	-
133	PCB 178	нрСВ	396 394	25.75 27.00	3972	no 1.07	7671	0.012443	-0.00162	22	no	0.722	-
	-	НрСВ	396	27.01	3699	yes				23			
134	PCB 175	HpCB	394 396	NotFnd 27.61	*	*	*	-0.00156	-0.00156	*	no	0.753	-
135	PCB 187		394	27.87	25722	1.09	49331	0.079901	-0.00162	142	no	0.723	-
136	PCB 182	НрСВ	396 394	27.88 NotEnd	23609	yes *	*	-0.00157	-0.00157	138	20	0 747	_
.00	192	НрСВ	396	28.10	*	no		0.00107	0.00107	*	110	0.747	-

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137 PCB 183	394	28.48	17337	1.1	33074	0.033359		-0.00181	55	yes	1.162	-
139 000 195	HpCB 396	28.50	15737	yes *		0.00040		0.000.10	54			
100 FCB 100	HpCB 396	28.56	*	no		-0.00248		-0.00248	*	no	0.851	-
139 PCB 174	394	NotFnd	*	*	*	~0.00217		-0.00217	*	no	0.97	-
140 PCB 177	394 apr	20.72	11654	1.08	22484	0.027935		-0.00224	36	no	0.943	-
141 DOD 191	HpCB 396	29.14	10830	yes		0.00000			35			
141 PCB 181	394 HpCB 396	Not-nd 29.56	*	no	•	-0.00236		-0.00236	*	no	0.892	-
142 PCB 171/173	394	29.78	6099	1.11	11573	0.014299		-0.00222	19	no	0.948	-
143 PCB 172	пров 396 394	29.78 NotFnd	5474	yes *	*	~0.00222		~0.00222	19 *	no	0.95	
111 000 100	HpCB 396	31.42	*	no				01000000	*		0100	
144 PCB 192	394 HpCB 396	Not-na 31.74	*	no	•	-0.00194		-0.00194	*	no	1.085	-
145 PCB 193/180	394	32.13	34785	1.09	66754	0.069347		-0.00152	100	no	1.383	-
146 PCB 191	HpCB 396 394	32.06 NotEnd	31969	yes *	*	-0.00156		-0.00156	98 *	20	1 352	_
	HpCB 396	32.48	*	no		0100.00		0.00100	*	110	1.002	
147 PCB 170	394 HpCB 396	33.45 33.45	5955 5682	1.05 ves	11637	0.014711		-0.00166	17	no	1.271	-
148 PCB 190	394	34.01	3756	1.07	7253	0.006319		-0.00157	10	no	1.345	-
149 PCB 189	HpCB 396 394	34.02 36 84	3497 1225	yes	2436	0 001837		-0.00056	10	20	0.044	
	HpCB 396	36.88	1211	yes	2400	0.001007		-0.00050	9	110	0.344	-
150 PCB 202	428 OcCB 430	29.26 29.27	2167 2358	0.92	4525	0.007313		-0.00115	19	no	0.988	-
151 PCB 201	428	30.19	1284	0.99	2581	0.003212		-0.00114	10	no	0.997	
152 PCB 204	OcCB 430	30.18 NotEnd	1297	yes *	*	0.00110		0.00110	9		0.000	
102 1 00 204	OcCB 430	30.88	*	no		-0.00118		-0.00119	*	10	0.962	-
153 PCB 197	428 OcCB 430	31.11	430	0.98	869	-0.0013		~0.0013	*	yes	0.876	-
154 PCB 200	428	31.27	7	0.76	16	-0.00113		-0.00113	*	yes	1.006	-
155 DCB 109/100	OcCB 430	31.23 NotEnd	9	yes *	*	0.00474		0.00474	*	•	0.054	
135 FOD 190/199	OcCB 430	34.19	*	no		~0.00174		~0.00174	*	no	0.654	-
156 PCB 196	428	NotFnd	*	*	*	-0.00169		-0.00169	*	no	0.674	-
157 PCB 203	428	35.12	1382	0.92	2880	0.005421		-0.00173	11	no	0.659	-
158 DCB 105	OcCB 430	35.10 NotEnd	1498	yes *	*	0.0000		0.0000	9		1 005	
100 FOD 190	OcCB 430	36.57	*	no		-0.0008		-0.0008	*	no	1.005	-
159 PCB 194	428	39.20	-1910.83	0.89	-4057.83	-0.0046	PCB 194 NDR	-0.00074	17	xL	1.091	-
160 PCB 205	428	NotFnd	*2147	*	*	-0.00074		-0.00074	16 *	no	1.091	-
101 808 000	OcCB 430	39.75	*	no					*			
161 PCB 208	462 NoCB 464	NotFnd 36.30	*	no	*	-0.00153		-0.00153	*	no	1.023	-
162 PCB 207	462	NotFnd	*	*	*	-0.00118		-0.00118	*	no	1.32	-
163 PCB 206	NoCB 464 462	37.32 NotFnd	*	no *	*	-0.00152		~0.00152	*	no	1.027	_
101 000 000	NoCB 464	41.70	*	no				01001011	*		1.027	
164 PCB 209	498 DCB 500	NotFnd 43.54	*	no	*	-0.0025		-0.0025	*	no	1.04	-
165 PCB 1L	200	8.98	166565	3.49	214235	0.144663		0	4294	no	0.824	72
166 PCB 3L	202 200	8.97 10.17	47669 154383	yes 3 58	197548	0 128924		0	404	VAS	0.852	65
	202	10.16	43165	yes	1010.0	0112002-1		0	383	yos	0.002	00
167 PCB 4L	234 236	10.28 10.28	58670 35077	1.67	93747	0.096104		0	2545	no	0.543	48
168 PCB 15L	234	12.93	180033	1.62	291098	0.150724		0	1451	no	1.074	76
169 PCB 19	236 268	12.91	111064 55706	yes	107517	0 103/33		0.001	1585		0 570	50
100 1 05 102	270	11.65	51811	yes	10/51/	0.103433		0.001	209 589	no	0.576	52
170 PCB 37L	268 270	16.68	158142	1.02	313836	0.19998		0.001	501 867	no	1.987	100
171 PCB 54L	302	13.06	49374	0.82	109671	0.107012		0	826	no	1.297	54
172 PCB 81	304	13.07	60296	yes	272500	0 10020		^	1568	-	1 700	100
ITZ FOD OIL	304	21.41	151889	yes	21 3 3 6 0	0.19920		U	2208	no	1.738	100
173 PCB 77L	302 304	21.85	118669	0.82	263791	0.199111		0	1046	no	1.677	100
174 PCB 104L	304 338	21.85 <b>15.92</b>	745122	yes 1.62	115036	0.141566		0	2048 3631	no	1.156	71
475 DCD 4001	340	15.93	43885	yes	005000				8527			
175 PUB 123L	338 340	23.49	104137	Ves	265863	0.195317		0	1411 871	no	1.936	98
176 PCB 118L	338	23.77	161716	1.61	262019	0.195529		0	1354	no	1.906	98
177 PCB 114L	338	23.76 24.25	100303 153325	yes 1.7	243713	0.195508		0.001	841 1291	no	1.773	98
179 DCD 405	340	24.25	90388	yes	057100	0.00000-			759			
178 PGB 105L	338 340	24.83 24.81	160126 97343	1.64 ves	257469	U.200925		0	1289 784	no	1.822	101
179 PCB 126L	338	27.69	146441	1.57	239497	0.196261		0.001	1125	no	1.735	98
180 PCB 155L	340 372	27.67 19.61	93055 72214	yes 1.3	127691	0.126601		٥	703 4781	no	1 404	63
	374	19.61	55477	yes				v	2477	110	1.404	00
181 PCB 167L	<b>372</b> 374	29.50 29.49	156172 119798	1.3 ves	275970	0.182015		0	2561 1035	no	2.11	91
182 PCB 156L/157L	372	30.68	284187	1.28	506592	0.366985		0	3835	yes	1.921	92
183 PCB 169	374 372	30.69 34.08	222405 98505	yes 1.28	175560	0.129516		Ω	1568 1499	20	1 886	65
	374	34.06	77055	yes		5.120010		U	599	10	1.000	00

184	PCB 188L	<b>406</b> 408	<b>24.20</b> 24.21	<b>71625</b> 66087	1.08 yes	137712	0.144151		0	5141 2416	no	1.329	72
185	PCB 180L	<b>406</b> 408	<b>32.09</b> 32.09	70718 68270	1.04 ves	138987	0.140193		0	2046 2349	no	1.349	70
186	PCB 170L	<b>406</b> 408	<b>33.42</b> 33.42	65955 58288	1.13 ves	124243	0.143207		0	1891 1974	no	1.18	72
187	PCB 189L	<b>406</b> 408	<b>36.84</b> 36.83	144161 136411	1.06 ves	280572	0.176913		0	2476 2493	no	2.157	89
188	PCB 202L	<b>440</b> 442	<b>29.25</b> 29.27	59750 65305	0.92 ves	125056	0.119841		0	4041 2111	no	1.419	60
189	PCB 205L	<b>440</b> 442	<b>39.71</b> 39.73	<b>95352</b> 101526	0.94 ves	196878	0.174886		0	1936 2290	no	1.531	88
190	PCB 208L	<b>474</b> 476	<b>36.27</b> 36.28	50337 66153	0.76 ves	116490	0.139066		0	4013 3829	no	1.139	70
191	PCB 206L	<b>474</b> 476	<b>41.70</b> 41.73	<b>40384</b> 49601	0.81 ves	89986	0.161153		0	3064 2705	no	0.76	81
192	PCB 209L	510 512	<b>43.54</b> 43.53	<b>43249</b> 37661	1.15 ves	80910	0.151947		0	4455 1558	no	0.724	76
193	PCB 28L PCB Cleanup Standard	<b>268</b> 270	<b>14.41</b> 14.43	211487 199679	1.06 ves	411166	0.255225		0.001	739 1259	no	2.039	115
194	PCB 111L PCB Cleanup Standard	<b>338</b> 340	<b>21.83</b> 21.84	<b>131003</b> 79011	1.66 ves	210014	0.222388		0	1187 2848	no	1.343	100
195	PCB 178L PCB Cleanup Standard	<b>406</b> 408	<b>26.98</b> 26.97	<b>54960</b> 52282	1.05 yes	107242	0.203612		0	3687 1805	no	0.733	92
196	PCB 31L PCB Audit Standard	268 270	NotFnd 14.26	*	* no	*			0.001		no	1.934	
197	PCB 95L PCB Audit Standard	338 340	NotFnd 17.73	*	* no	*			0.001		no	0.946	
198	PCB 153L PCB Audit Standard	372 374	NotFnd 25.40	*	* no	*			0		no	1.225	
199	PCB 9L PCB Recovery Standard	<b>234</b> 236	<b>11.17</b> 11.19	<b>1226711</b> 766722	1.6 yes	1993434	10.21245		-	10967 12093	no	-	-
200	PCB 52L PCB Recovery Standard	<b>302</b> 304	<b>15.36</b> 15.36	<b>388693</b> 487303	0.8 yes	875996	6.936327		-	4723 8627	no	-	-
201	PCB 101L PCB Recovery Standard	<b>338</b> 340	<b>19.77</b> 19.76	<b>483787</b> 295928	1.63 yes	779714	7.095278		-	4656 11273	no	-	-
202	PCB 138L PCB Recovery Standard	<b>372</b> 374	<b>26.57</b> 26.56	<b>452058</b> 344818	1.31 yes	796876	7.398286		-	13082 10593	no	-	-
203	PCB 194L PCB Recovery Standard	<b>440</b> 442	<b>39.18</b> 39.17	<b>391355</b> 423849	0.92 yes	815204	7.536248		-	8061 9691	no	-	-
	Chlorobiphenyls						-0.00073	0	-0.00073				
	Dichlorobiphenyls Trichlorobiphenyls						0.029372	2 14	-0.00433				
	Tetrachlorobiphenvls						0.848039	20	-0.00219				
	Pentachlorobiphenyls						0.484592	16	-0.0012				
	Hexachlorobiphenyls						0.936997	18	-0.00357				
	Heptachlorobiphenyls						0.283997	11	-0.00248				
	Octachlorobiphenyls						0.015946	3	-0.00174				
	Nonachlorobiphenyls						-0.00153	0	-0.00153				
	Decachlorobiphenyl PCB (total)						-0.0025 3.162713	0	-0.0025				

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#### Quantify Sample Report MassLynx 4.0 SP1

Acquired Date

Dataset: C:\MassLynx\Default.pro\M2160218D \M2160218D samples 1668A.gld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time

## ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016

Time: 02:49:27

### **Total DiCB F1**



9.71 9.79

9.80



8.83

8.98

9.28

9.20

9.46

9.40

9.56

9.60

8.63

%



10.61

10.60

10.76

10.80

min

10.45

10.40

10.16

10.20

10.00

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
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Time: 02:49:27







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### Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
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#### ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

#### Total TeCB F2





## Total TeCB labeled F2



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#### Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D samples 1668A.gld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
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Time: 02:49:27







## **Total TeCB labeled F3**



## **Total TeCB labeled F3**



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#### Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time	
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time	

### ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27





17.50

18.00

18.50

19.00

0

17.00



20.00

20.50

21.00

21.50

22.00

19.50

¬ min

22.50

C:\MassLynx\Default.pro\M2160218D \M2160218D samples 1668A.qld Dataset:

Last Altered: February 20, 2016 02:53:06 PM Eastern Standard Time Printed: February 20, 2016 02:55:57 PM Eastern Standard Time

ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti **Description: BRP511-01R** Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

#### **Total PeCB F3**







#### Total PeCB labeled F3



0



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#### Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time	
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## ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27



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0

Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time

ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

#### Total HxCB F4



### Total HxCB F4



#### Total HxCB labeled F4





Dataset: C:\MassLynx\Default.pro\M2160218D \M2160218D samples 1668A.qld

Last Altered:February 20, 2016 02:53:06 PM Eastern Standard TimePrinted:February 20, 2016 02:55:57 PM Eastern Standard Time



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## ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

## Total HxCB F6



## Quantify Sample Report MassLynx 4.0 SP1

## Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time	Э
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time	Э







Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time

## ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016





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#### C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time

### ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

#### **Total NoCB F7**





#### Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time

### ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

### **Total DeCB F7**





## **Total DeCB labeled F7**



## Quantify Sample Report MassLynx 4.0 SP1

Acquired Date

## Dataset: C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld

Last Altered:	February 20, 2016 02:53:06 PM Eastern Standard Time
Printed:	February 20, 2016 02:55:57 PM Eastern Standard Time

#### ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27





lockmass F3 F3:SIR of 14 channels,EI+ M2160218DS011 Smooth(SG,3x1) lockmass F3;15.81;8623 292.9824 lockmass F3;14.53;7269 100 1.578e+006 % – min 0 13.75 14.00 14.25 14.50 14.75 15.00 15.25 15.50 15.75 16.00 16.25 16.50 16.75 lockmass F4 F4:SIR of 14 channels,EI+ M2160218DS011 Smooth(SG,3x1) lockmass F4;18.65;15500 lockmass F4;20.12;17496 330.9792 100 2.313e+006 %

_											
0-4											min receiption
17.00	17.50	18.00	18.50	19.00	19.50	20.00	20.50	21.00	21.50	22.00	22.50

#### MassLynx 4.0 SP1 **Quantify Sample Report** Acquired Date

#### C:\MassLynx\Default.pro\M2160218D_\M2160218D_samples_1668A.qld Dataset:

February 20, 2016 02:53:06 PM Eastern Standard Time Last Altered: February 20, 2016 02:55:57 PM Eastern Standard Time Printed:

### ID: Anchor QEA, PG-GP-1-MUS-COC-160104, Ti Description: BRP511-01R Vial: 11 Date: 18-FEB-2016 Time: 02:49:27

#### lockmass F5 F5:SIR of 14 channels,EI+ M2160218DS011 Smooth(SG,3x1) 354.9792 lockmass F5;24.36;4826 lockmass F5;26.16;11506 lockmass F5;27.55;7768 lockmass F5;23.19;4391 100 Z.081e+005 % – ⊤– min 0 25.50 26.00 26.50 27.00 27.50 28.00 23.50 24.00 24.50 25.00 23.00 EG

Iockmass F6 M2160218DS011 Smooth(SG,3x1)	lockmass F6:31.75:8552	lockmass F6:33.25:726	6	F6:SIR of 14 channels,EI+ 404.9760
100-100x110001010010				<u>5313</u> e+005
0 29.00 30.00	31.00 32.00	33.00	34.00	mir 35.00
lockmass F7 M2160218DS011 Smooth(SG,3x1) lockmass F7;37.35;4772 lockmass F7 %	7;39.13;8174 lockmass F7;41.	11;7412 lockmass F7;42.	94;10279	F7:SIR of 18 channels,El- 454.972t

41.0

42.0

37.0

38.0

39.0

40.0

0---

36.0

45.0

44.0

43.0

46.0




















Filename M2160219BS003 Acquired 19/02/2016 13:47

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### Cali File M2160219_209

Sample ID BRP512-01R Comments Anchor QEA, PG-SMA2-5-MUS-COC-16010, Ti Instrument File Ultima 2 Sample Size 10.634 Dii Fac 1.00

								Isomers					
Name 1 PCB 1	mass 188 MoCB 190	RT 8.99 8.99	Area 894 266	ratio 3.36	Tot Area 1161	ng/g -0.0005	Code		DL -0.0005	S/N *	Mod Op-O	rrf 1.082	Rec -
2 PCB 2	188 MoCB 190	10.10	432	2.52	603	-0.00044			-0.00044	*	yes	1.248	-
3 PCB 3	188 MoCB 190	10.18 10.19	-1055 -337.061	3.13 OK	-1392.06	-0.00063	PCB 3 NDR		-0.00051	3 42	хL	1.079	-
4 PCB 4	222 DICB 224	<b>10.30</b> 10.29	<b>3568</b> 2480	1.44 yes	6047	0.006193			-0.001	15 17	yes	0.954	-
5 PCB 10	222 DiCB 224	10.38 10.38	543 472	1.15 no	1015	-0.00081			-0.00081	*	yes	1.177	-
6 PCB 9	222 DICB 224	<b>11.19</b> 11.19	<b>1984</b> 1449	1.37 yes	3433	0.001227			-0.00101	7 8	no	1.357	-
	DICB 222	11.26 11.25	1403 793	1.77 yes	2196	-0.00119			-0.00119	, * , *	no	1.155	•
9 PCB 5	DiCB 224	11.36 11.35 NotEnd	4383	1.54 yes	*	0.004			-0.00102	21 22	no	1.347	-
10 PCB 8	DiCB 224	11.50	*	no 1.54	40663	-0.00117			-0.00117	*	no	1.169	-
11 PCB 14	DICB 224	11.55 11.54 NotEnd	19541	yes	*	-0.0010424			-0.00105	91 *	10	1.307	-
12 PCB 11	DICB 224	12.26 12.66	* 13008	no 1.56	21363	0.007792			-0.00101	*		1.301	-
13 PCB 13/12	DiCB 224 222	12.65 12.78	8355 -3063.84	yes 1.56	-5027.84	-0.00196	PCB 13/12 NDR		-0.00103	26	vl	1 241	-
14 PCB 15	DiCB 224 222	12.79 <b>12.95</b>	-1964 73252	OK 1.63	118295	0.043826			-0.00157	8 176	no	0.871	_
15 PCB 19	DiCB 224 256	12.93 <b>11.68</b>	45043 <b>4997</b>	yes 1.15	9360	0.010176			-0.00141	166 39	ves	0.899	-
16 PCB 30/18	TriCB 258 256	11.68 <b>12.49</b>	4363 <b>54009</b>	yes 1.04	106109	0.052851			-0.00129	35 406	no .	0.976	-
17 PCB 17	TriCB 258 256	12.48 <b>12.70</b>	52100 13061	yes 1.04	25613	0.015745			-0.0016	416 81	no	0.79	-
18 PCB 27	TriCB 258 256	12.69 12.78	12552 10721	yes 1.11	20414	0.008426			-0.00107	76 85	yes	1.177	-
19 PCB 24	1riCB 258 256	12.79 12.87	9692 1236	yes 0.9	2610	0.001338			-0.00133	76 12	yes	0.948	-
20 PCB 16	256	12.07 12.91	17473	yes 1	34993	0.021436			-0.00159	12 129	yes	0.793	-
21 PCB 32	256 TriCB 258	13.14 13.14	23806 22199	1.07	46005	0.01674			-0.00095	127	no	1.335	-
22 PCB 34	256 TriCB 258	13.74 13.73	1479 1536	0.96 ves	3016	0.000987			-0.00067	5	yes	1.484	-
23 PCB 23	256 TriCB 258	13.83 13.82	505 532	0.95 ves	1037	-0.00069			-0.00069	*	yes	1.446	-
24 PCB 26/29	256 TriCB 258	<b>13.97</b> 13.99	<b>49571</b> 47295	1.05 yes	96865	0.029163			-0.00062	170 171	no	1.614	-
25 PCB 25	256 TriCB 258	<b>14.10</b> 14.11	<b>24266</b> 23422	1.04 yes	47688	0.013356			-0.00058	81 83	no	1.735	-
26 PCB 31	256 TriCB 258	<b>14.26</b> 14.28	<b>257396</b> 248705	1.03 yes	506101	0.134044			-0.00055	916 922	no	1.835	-
27 PCB 28/20	256 TriCB 258	<b>14.42</b> 14.45	<b>662644</b> 643415	1.03 yes	1306060	0.375852			-0.00059	2291 2275	no	1.688	-
28 PCB 21/33	256 TriCB 258	14.55 14.55	122298 117415	1.04 yes	239713	0.068143			~0.00059	397 395	no	1.709	-
29 PCB 22	256 TriCB 258	14.77 14.78	105560 104498	1.01 yes	210057	0.063852			-0.00063	343 348	no	1.599	-
30 PCB 30	TriCB 258	15.62	*	no		-0.00054			-0.00054	*	no	1.858	-
32 PCB 38	TriCB 258	15.82 NotEnd	4674	yes *	8870	0.002838			-0.00066	14 16	yes	1.519	-
33 PCB 35	TriCB 258	16.20 16.45	* 4941	no 1 04	9694	0.000004			-0.00064	*	10	1.574	-
34 PCB 37	TriCB 258 256	16.47 16.70	4752 94948	yes 1.05	185730	0.066326			~0.00000	14	no	0.906	
35 PCB 54	TriCB 258 290	16.72 13.08	90782 412	yes 1.01	819	-0.00124			-0.00124	269	ves	0.911	_
36 PCB 53/50	TCB 292 290	13.08 <b>14.12</b>	408 <b>29027</b>	no 0.79	65884	0.043824			-0.00141	* 129	no	0.77	-
37 PCB 45/51	TCB 292 290	14.11 <b>14.48</b>	36857 <b>18582</b>	yes 0.85	40504	0.028577			-0.0015	124 78	no	0.725	-
38 PCB 46	TCB 292 290	14.49 <b>14.64</b>	21921 <b>9352</b>	yes 0.8	21054	0.01784			-0.0018	71 41	no	0.604	-
39 PCB 52	TCB 292 290	14.64 <b>15.38</b>	11702 208643	yes 0.8	469595	0.319578			-0.00145	40 865	no	0.752	-
40 PCB 73	TCB 292 290	15.38 NotFnd	260952	yes *	*	-0.00109			-0.00109	825	no	1.002	-
41 PCB 43	ICB 292 290	15.43 15.53	* 8817	no 0.8	19881	0.020282			-0.00217	36	no	0.502	-
42 PCB 69/49	TCB 292 290	15.50 15.65	11065 93313	yes 0.8	210028	0.12473			-0.00126	34 370	no	0.862	-
	100 292	10.03	01/10	yes						366			

43 PCB 48		290	15.83	54049	0.8	121453	0.090979	-0	0.00159	230	no	0.683	-
	тсв	292	15.84	67404	yes					217			
44 PCB 44/47/65	тсв	<b>290</b> 292	<b>15.96</b> 15.97	<b>199393</b> 246790	0.81 yes	446183	0.293028	-	0.0014	656 626	no	0.779	-
45 PCB 59/62/75	тсв	290 202	16.16	26339	0.81	58682	0.03056	~(	0.00111	99 95	no	0.983	-
46 PCB 42	100	290	16.28	40961	0.78	93251	0.079001	-	0.0018	159	no	0.604	-
47 PCB 40/41/71	тсв	292 290	16.27 <b>16.5</b> 7	52290 <b>94314</b>	yes 0.79	213842	0.158821	-(	0.00158	156 315	no	0.689	-
48 PCB 64	тсв	292 290	16.56 16.72	119529 58869	yes 0.79	133712	0.076075	-0	0.00121	309 229	no	0.9	-
40 1 02 04	тсв	292	16.70	74843	yes	000112				224		4 004	
49 PCB 72	тсв	290 292	17.20	3810	yes	6001	0.002658	~(	1.00086	9	10	1.201	-
50 PCB 68	тсв	290 292	<b>17.40</b> 17.42	<b>1901</b> 2606	0.73 ves	4507	0.001777	-(	0.00084	5 5	no	1.298	-
51 PCB 57	тор	290	17.70	1138	0.71	2751	0.000953	-(	0.00074	6	no	1.477	-
52 PCB 58	ICB	292	NotFnd	*	yes *	*	-0.00085	-(	.00085	*	no	1.274	-
53 PCB 67	тсв	292 290	17.85 <b>17.95</b>	* 6625	no 0.79	15053	0.00468	~(	0.00066	19	no	1.647	-
54 PCB 63	тсв	292 290	17.95	8428 6432	yes 0.84	14106	0 004709	-(	00071	19 19	no	1 533	-
	тсв	292	18.15	7674	yes	14100	0.004100		00070	18		4.070	
55 PCB 61/70/74/76	тсв	<b>290</b> 292	18.36 18.36	<b>143320</b> 184086	0.78 yes	327406	0.122081	-(	0.00079	294 · 291	no	1.373	-
56 PCB 66	TCB	290 292	18.59 18.60	60872 76287	0.8	137159	0.044412	-(	0.00069	173 168	no	1.581	-
57 PCB 55	TOD	290	NotFnd	*	*	*	-0.00089	~(	0.00089	*	no	1.229	-
58 PCB 56	TCB	292 290	18.72 19.06	8397	no 0.83	18534	0.00741	-(	0.00085	24	no	1.28	-
59 PCB 60	тсв	292 290	19.07 <b>19.23</b>	10137 <b>7397</b>	yes 0.77	17016	0.00688	-(	0.00086	22 21	no	1.266	-
	тсв	292	19.24 NotEnd	9619	yes *	*	0.00069		00069	20	20	1 506	
60 PCB 80	тсв	290 292	19.50	*	no		-0.00068	-(	1.00066	*	110	1.596	-
61 PCB 79	тсв	<b>290</b> 292	20.66 20.63	<b>1267</b> 1443	0.88 ves	2709	0.000818	~(	0.00064	5 4	yes	1.695	-
62 PCB 78	TOP	290	NotFnd	*	*	*	-0.00076	-(	0.00076	*	no	1.435	-
63 PCB 81	106	292 290	21.08	321	0.64	822	-0.00106	-(	0.00106	*	yes	1.027	-
64 PCB 77	тсв	292 290	21.45 <b>21.89</b>	501 3070	no 0.8	6918	0.00282		).00101	8	no	1.077	-
65 PCB 104	тсв	292	21.89 NotEnd	3848 *	yes *	*	-0.00103	-	00103	8 *	00	1 094	
00 1 00 104	PeCB	328	15.94	*	no		-0.00103			*	110	0.004	
66 PCB 96	PeCB	326 328	16.18 16.15	2452 1504	1.63 yes	3957	0.002426	-1	0.00141	8 7	no	0.802	-
67 PCB 103	PeCB	326 328	17.33 17.31	2811 1741	1.62	4552	0.003134	~(	0.00108	10 9	no	0.714	-
68 PCB 94		326	17.47	1205	1.74	1899	0.001793	-(	0.00147	4	no	0.521	-
69 PCB 95	PeCB	328 326	17.47 17.77	694 93674	yes 1.66	150043	0.115055	**	0.0012	4 313	no	0.641	-
70 PCB 100/93/102/	PeCB	328 326	17.76 18.00	56369 8773	yes 1.61	14221	0.0125	-(	0.00137	288 18	no	0.559	-
74 DOD 40/04	PeCB	328	17.91	5448	yes	40700	0.044004	-	00495	18		0.57	
71 PCB 88/91	PeCB	326 328	18.35	4829	yes	12/02	0.011001	-(	1.00135	23 23	10	0.57	-
72 PCB 84	PeCB	326 328	18.52 18.49	8027 4850	1.65 ves	12877	0.012885	-(	0.00156	25 23	no	0.491	-
73 PCB 89	DeCD	326	18.84	312	1.65	501	-0.00142	~(	0.00142	*	yes	0.541	-
74 PCB 121	Pece	328 326	NotFnd	189	yes *	*	-0.00105	· -(	0.00105	*	no	0.733	-
75 PCB 92	PeCB	328 326	19.08 <b>19.36</b>	* 18108	no 1.66	29038	0.024486	-(	0.00132	* 56	no	0.583	-
76 PCP 113/00/104	PeCB	328	19.35	10930	yes	227704	0 164992	, r	1 00112	52 431	no	0.679	_
	PeCB	328	19.76	86202	yes	221104	0.104002	•••		413		0.070	-
// PCB 83/99	PeCB	<b>326</b> 328	20.23 20.22	<b>54781</b> 33397	1.64 yes	88177	0.083683	~(	0.00148	159 152	no	บ.อาช	-
78 PCB 112	PeCB	326 328	NotFnd 20.30	*	*	*	-0.00093	-(	0.00093	* *	no	0.83	-
79 PCB 109/119/86/9	97/125	326	20.69	38022	1.64	61243	0.045136	(	0.00115	63	no	0.667	-
80 PCB 117/116/85	PeCB	328 326	20.62 21.19	23221 11665	yes 1.59	18989	0.013019		0.00107	59 33	no	0.717	-
81 PCB 110/115	PeCB	328 326	21.19 21 32	7323	yes 1.65	145756	0 106779	-	00114	31 259	no	0.671	-
	PeCB	328	21.32	55097	yes	= +01 00			0.00440	242		0.544	
82 PCB 82	PeCB	326 328	21.58 21.59	<b>3495</b> 1996	1.75 yes	5491	0.005253	-(	1.00149	10 9	yes	0.514	-
83 PCB 111	PeCR	326 328	NotFnd 21.85	*	*	*	-0.00103	-(	0.00103	*	no .	0.749	-
84 PCB 120		326	22.24	847	2.11	1249	-0.0009	-	0.0009	*	yes	0.853	-
85 PCB 108/124	PeCB	328 <b>326</b>	22.25 23.20	401 <b>4977</b>	no 1.59	8111	0.003187	~(	0,00077	11	no	1.251	-
86 PCB 107	PeCB	328 326	23.21 23.42	3134 12515	yes 16	20342	0.00761		0.00073	11 24	no	1.314	-
	PeCB	328	23.40	7827	yes		0.00107		0.0407	24		0.904	
87 PCB 123	PeCB	326 328	23.53 23.51	974	1.13 no	2074	-0.00107	~(	.00107	*	10	0.894	-
88 PCB 106	PeCB	326 328	NotFnd 23.63	*	* no	*	-0.0007	-	0.0007	*	no	1.375	-
89 PCB 118	D.07	326	23.79	147935	1.59	241096	0.107639	~(	0.00098	307	no	0.981	-
	recB	১∠୪	23.80	93101	yes					300			

															1 000	
	90	PCB 122			326	24.10	1523	1.94	2310	-0.00079		-0.00079	*	Op-O	1.222	-
			f	PeCB	328	24.08	787	no	4414	0 001005		-0.00095	5	no	1.01	-
	91	PCB 114			326	24.27	1625	1.71	44411	0.001335		0100000	5			
	92	PCB 105		-ecb	326	24.84	45961	1.59	74873	0.034095		-0.00098	95	no	0.977	-
	02		1	PeCB	328	24.85	28912	yes				0.00074	93		1 2/0	
	93	PCB 127			326	NotFnd	*	*	*	-0.00071		-0.00071	*	по	1.340	-
			1	PeCB	328	26.20	*	no	1/12	0.00008		-0.00098	*	ves	0.977	-
	94	PCB 126		DACB	326	27.75	663 548	Ves	1412	-0.00030		0.000000	skr	,		
	95	PCB 155		000	360	NotFnd	*	*	*	-0.00066		-0.00066	*	no	0.997	-
	••		1	НхСВ	362	19.63	*	no				0.00000	*		0.675	_
	96	PCB 152			360	NotFnd	*	*	*	~0.00098		-0.00098	*	no	0.075	-
	07	DOD 450		HxCB	362	19.78	505	no 1.36	1033	-0.00103		-0.00103	*	yes	0.639	-
	97	PCB 150		HYCB	362	19.88	438	ves	1000	0.00100			*			
	98	PCB 136		i ixob	360	20.18	24129	1.37	41680	0.034899		-0.00098	134	no	0.672	-
				HxCB	362	20.18	17551	yes				0.00444	120		0.570	_
	99	PCB 145			360	NotFnd	*	*	*	-0.00114		-0.00114	*	110	0.070	
	100	DCD 149		HXCR	362	20.41	604	14	1035	-0.00136		-0.00136	*	yes	0.487	-
	100	PCD 140		HxCB	362	21.55	431	yes					*			
	101	PCB 151/	135		360	22.05	61852	1.28	110149	0.137525		-0.00147	273	yes	0.451	-
				HxCB	362	22.04	48297	yes	5040	0.000040		-0.00121	∠04 10	VAS	0.544	-
	102	PCB 154			360	22.24	3307	1.32	5818	0.006019		-0.00121	17	y00	0.011	
	102	DCD 144		HXCB	362	22.21	9111	1.22	16565	0.019307		-0.00137	49	yes	0.483	-
	105	100 144		НхСВ	362	22.51	7453	yes					48		0.047	
	104	PCB 147/	149		360	22.80	209408	1.32	368564	0.32055		-0.0013	840	yes	0.647	-
				HxCB	362	22.80	159156	yes	40050	0.04265		-0.00149	28	ves	0.563	-
	105	PCB 134/	143		360	22.99	7643	1.27	13052	0.01365	•	-0.00140	29	,		
	106	PCB 139/	140	пхсь	360	23.31	1899	1.41	3242	0.002856		-0.00131	7	no	0.639	-
	100	100 133/	140	HxCB	362	23.31	1343	yes					7		0 540	
	107	PCB 131			360	23.49	1029	1.21	1881	0.002063		-0.00164	4	no	0.515	-
	100	DOD 440		HxCB	362	23.49	851	yes *	*	"0 00144		-0.00144	*	no	0.583	-
	108	PCB 142		HYCB	362	23.65	*	no		0.00111			*			
	109	PCB 132		TIXOD	360	23.88	27836	1.33	48785	0.052514		-0.0016	106	no	0.523	-
				HxCB	362	23.88	20949	yes		0.005400		0.00135	103	no	0.623	-
	110	PCB 133			360	24.31	3234	1.29	5740	0.005186		-0.00100	13	no	0.020	
	111	DCB 165		HXCB	362	24.31 NotEnd	2006	yes *	*	-0.00118		-0.00118	*	no	0.714	-
		FOD 100		HxCB	362	24.68	*	no					*		0.000	
	112	PCB 146			360	24.88	40411	1.29	71738	0.060837		-0.00127	157	no	0.663	-
				HxCB	3 62	24.88	31328	yes	*	0.00004		-0.00094	*	no	0.888	-
	113	PCB 161			360	NotFnd	*	n0		-0.00094		0.00001	*			
	114	PCB 153	/168	HXUE	360	25.43	371236	1.29	658432	0.467713		-0.00106	1394	no	0.792	-
	114	FCD 133	,100	HxCE	3 362	25.47	287196	yes					1352		0.004	
	115	PCB 141			360	25.63	9514	1.39	16336	0.014796		-0.00135	36	no	0.621	-
				HxCE	3 362	25.62	6822	yes	40405	0.042524		-0.0015	27	no	0.558	-
	116	PCB 130			360	26.00	7 <b>590</b> 5835	1.3	13425	0.015551		0.0010	27			
	117	PCB 137		HXGE	360	26.23	1659	1.26	2980	0.002976		-0.00149	9	no	0.563	-
		1 00 10		HxCE	3 362	26.21	1321	yes					9		0.000	
	118	PCB 164			360	26.31	8226	1.28	14651	0.009974		-0.00102	29	no	0.020	-
				HxCE	3 362	26.30	6424	yes	183701	0 422712		-0.0013	1004	no	0.644	-
-	, 119	PCB 138	163/129	HYCE	3 362	26.67	210121	ves	400704	0.1227.12			952			
	120	PCB 160		1	360	NotFnd	*	*	*	-0.00116		-0.00116	*	no	0.723	-
				HxCE	3 362	26.80	*	no		0.000.007		.0.00022	о <i>л</i>	no	0.911	-
	121	PCB 158			360	26.98	26909	1.29	47726	0.029465		-0.00032	90	110	0.011	
	400	000 429	1166	HXCE	3 362	20.98	20017	1.25	41690	0.033487		-0.0012	69	no	0.7	-
	122	00 120		HxCE	3 362	27.80	18522	yes					67		4 070	
	123	PCB 159	)		360	NotFnd	*	*	*	-0.00101		-0.00101	*	no	1.379	-
				HxCE	3 362	28.78	*	no	0945	0.004417		-0.00111	7	no	1.254	-
	124	PCB 162	2		360	29.16	5410 4436	1.ZZ	9045	0.004417		0.00.11	8			
	125	E PCB 167	,	TIXOL	360	29.53	15045	1.37	26001	0.011708		-0.00148	28	no	0.946	-
	120			HxCE	3 362	29.55	10956	yes					25		1 017	
	126	6 PCB 156	6/157		360	30.68	29810	1.25	53569	0.024165		-0.00137	50	no	1.017	-
				HxCE	3 362	30.71 NotEnd	23759	yes *	*	-0 00147		-0.00147	*	no	0.954	-
	127	PCB 169	)	нуси	360	34.13	*	no		-0.00147			*			
	128	3 PCB 188	3	11/01	394	24.24	224	1.09	430	-0.00064		~0.00064	*	yes	1.012	-
				HpCl	B 396	24.23	206	yes				0.00004	402	-	1 016	_
	129	PCB 179	•		394	24.54	27947	1.1	53320	0.039309		-0.00064	195	no	1.010	
	400			HpCI	B 396	24.52	25373	yes *	*	-0 00060		-0.00069	*	no	0.937	-
	130	) PCB 184	ł	HnCl	394 B 396	25.00	*	no		0.000000			*			
	131	PCB 176	6	poi	394	25.33	8149	1.1	15561	0.011742		-0.00065	53	no	0.993	-
	•			HpC	B 396	25.32	7412	yes		0.00077		-0.0007E	52 *	20	0.865	-
	132	2 PCB 186	3		394	NotFnd	*	*	*	-0.00075		~0.00070	*	10	0.000	
	400	2 000 470	,	нрС	0 396 304	20.70 27.02	9693	1.07	18744	0.02046		-0.00094	62	no	0.686	-
	153	, FUD 1/0	•	HpC	B 396	27.01	9051	yes					61		0.000	
	134	4 PCB 175	5		394	27.62	2133	1.15	3983	0.004287		-0.00093	14	no	0.696	-
			_	HpC	B 396	27.62	1851	yes	407044	0 152017		-0.00096	453	no	0.673	-
	135	5 PCB 187	(	Hac	394 B 306	27.89	66206	1.U/ Ves	13/311	0.10201/		2100000	443			
	136	3 PCB 182	2	npo	394	NotFnd	*	*	*	-0.00096		-0.00096	*	no	0.674	-
				HpC	B 396	28.10	*	no					*			

												4 450	
137 P	CB 183	394	28.50	47588	1.13	89841	0.058342		-0.00109	166 156	no	1.153	-
138 P	CB 185	HPCB 396 394	28.51 NotFnd	42200	*	*	-0.00156		-0.00156	*	no	0.805	-
139 F	CB 174	HpCB 396 394	28.58 NotFnd	*	no *	*	-0.00133		-0.00133	*	no	0.947	-
440 5	00 477	HpCB 396	28.74 29 16	* 32670	no 1.06	63448	0.051608		-0.00136	111	no	0.921	-
140 P	CB 177	HpCB 396	29.16	30778	yes	*	0.00142		-0.00142	111 *	no	0.885	-
141 F	PCB 181	394 HpCB 396	NotFnd 29.57	*	no		-0.00142		0.0044	*		0 808	_
142 F	PCB 171/173	394	29.80	17586 15864	1.11 ves	33450	0.027904		-0.0014	56	110	0.000	
143 F	PCB 172	394	NotFnd	*	*	*	-0.0014		-0.0014	*	no	0.898	-
144 F	PCB 192	HpCB 396 394	31.44 NotFnd	*	*	*	-0.00121		-0.00121	*	no	1.043	-
4 A E T	000 102/180	HpCB 396	31.76 32 13	* 112971	no 1.1	215700	0.151848		-0.00089	360	no	1.408	-
145 6	-CB 195/100	HpCB 396	32.08	102729	yes	5424	0 003277		-0.00101	343 7	no	1.24	-
146 F	PCB 191	394 HpCB 396	32.51 32.50	2823	yes	5424	0.000271	,	.0.00099	9 64	no	1.271	-
147 F	PCB 170	394 HpCB 396	<b>33.45</b> 33.47	<b>19477</b> 18080	1.08 yes	37557	0.03286		-0.000000	62		1 077	_
148 I	PCB 190	394	34.03	12007	1 ves	23988	0.014068		-0.00098	40 39	no	1.211	-
149 I	PCB 189	HPCB 396 394	34.04 36.87	4194	0.95	8598	0.003904		-0.00056	17 18	no	0.944	-
150	PCB 202	HpCB 396 428	36.88 29.26	4404 <b>4674</b>	yes 0.94	9643	0.010021		-0.00087	31	no	0.988	-
		OcCB 430	29.28	4968 2752	yes 0.84	6045	0.00498		-0.0008	30 19	no	1.068	-
151	PCB 201	OcCB 430	30.18	3293	yes	*	0.00091		-0.00081	18 *	no	1.052	-
152	PCB 204	428 OcCB 430	NotFnd 30.88	*	no		-0.00001		0.0000	* -7	20	0.951	_
153	PCB 197	428	31.13	1203 1278	0.94 Ves	2482	0.002295	2	-0.0009	7	no	0.551	
154	PCB 200	428	NotFnd	*	*	*	-0.00081		-0.00081	*	no	1.056	-
155	PCB 198/199	OcCB 430 428	31.24 34.20	-473.48	no 0.89	-1005.48	-0.00126	PCB 198/199 NDR	-0.00122	4	хL	0.702	-
450	DCD 406	OcCB 430	34.19 34 92	-532 606	OK 0.94	1254	0.001503		-0.00117	4	yes	0.734	-
100	PCB 190	OcCB 430	34.93	647	yes	0522	0.011802		-0.00121	4 27	yes	0.711	-
157	PCB 203	428 OcCB 430	35.14 35.12	4456 5077	yes	9000	0.011002		0.0009	28	no	1.046	-
158	PCB 195	428	36.59 36.59	1094 1232	0.89 ves	2326	0.001956		-0.0000	5	110		
159	PCB 194	428	39.21	6778	0.96	13847	0.01089		-0.00074	36 32	no	1.119	-
160	PCB 205	OcCB 430 428	39.22 39.76	1130	1.02	2238	0.001579		-0.00076	6	yes	1.091	-
161	DCB 208	OcCB 430	39.77 NotEnd	1108	yes *	*	-0.0008		-0.0008	*	no	1.023	-
101	PCB 200	NoCB 464	36.33	*	no *	*	-0.00063		-0.00063	*	no	1.304	-
162	PCB 207	462 NoCB 464	NotFnd 37.35	*	no		-0.00000		0.0008	*	On-O	1.027	-
163	PCB 206	462 NoCB 464	41.73 41.71	223 378	0.59 no	601	-0.0008		-0.0000	*	Op O	4.04	
164	PCB 209	498	43.56	155	1.01	309	-0.00097		-0.00097	*	yes	1.04	-
165	PCB 1L	DCB 500 200	43.54 8.99	301215	3.46	388347	0.131272		0	8748 476	no	0.824	70
166	DCB 3	202	8.99 10.18	87132 299138	yes 3.47	385401	0.125909		0	8765	no	0.852	67
100		202	10.20	86263	yes	192509	0 098791		0	479 1915	no	0.543	53
167	PCB 4L	234 236	10.28	73069	yes	192303			0	3595 1591	no	1.074	80
168	PCB 15L	234 236	<b>12.93</b> 12.93	366398 216741	1.69 yes	583139	0.151147			2096		0 579	40
169	PCB 19L	268	11.68	999999 02405	1.08	192495	0.0927		0.001	378 312	no	0.576	49
170	PCB 37L	270 268	16.70	300924	1.07	581598	0.203724		0.001	798 532	no	1.987	108
171	PCB 54L	270 302	16.69 <b>13.06</b>	280674 99973	yes 0.79	226236	0.121349		0	917	no	1.297	65
470	00001	304	13.07	126263	yes 08	447649	0.179242		0	1245	no	1.738	95
172	PCB 81L	302 304	21.42	248841	yes	400054	0 477725		0	1753 1174	no	1.677	95
173	PCB 77L	<b>302</b> 304	<b>21.87</b> 21.85	<b>190389</b> 237965	0.8 yes	428354	0.177735		0	1636		1 156	78
174	PCB 104L	338	15.92	128615 78247	1.64	206862	0.14636		0	6355 3544	10	1.100	70
175	5 PCB 123L	338	23.49	276227	1.66	442262	0.186801		0	3232 2109	no	1.936	99
176	5 PCB 118L	340 338	23.50 23.77	166035 269622	yes 1.69	429196	0.184141		0	3153	no	1.906	98
4		340	23.76	159574 258233	yes 1.68	411565	0.18982		0	3006	no	1.773	101
177	rud 114L	340	24.25	153332	yes	400000	0 190759	1	0	1927 3062	no	1.822	101
178	3 PCB 105L	<b>338</b> 340	<b>24.83</b> 24.81	262717 160218	1.64 yes	422935	0.109/00		-	1989	no	1 735	100
179	9 PCB 126L	338	27.69	250071 149576	1.67 ves	399647	0.18829		U	1660	10		
180	) PCB 155L	372	19.61	123698	1.28	220183	8 0.133747	,	0	7182 6147	no	1.404	71
181	1 PCB 167L	374 372	19.61 29.52	96485 <b>249742</b>	yes 1.3	441567	0.178429	)	0	4105	no	2.11	95
404	DCB 1561 /157	374	29.49	191825 464580	yes 1.31	81981 ⁻	0.36385	5	0	6316	no	1.921	97
182	2 FUB 100L/10/	374	30.69	355231	yes	26562	7 0 12005	3	0	3603 2228	no	1.886	64
18:	3 PCB 169L	372 374	2 34.10 1 34.07	149825	yes	20002	0.12000		-	1269			

184	PCB 188L	406	24.20	107062	1.08	206481	0.132419		0	3972 4342	no	1.329	70
		408	24.21	99419	yes				0	3846	no	1.349	71
185	PCB 180L	406	32.11	98962	1.09	189797	0.134142		0	3677			
		408	32.09	90835	yes		0 40050		0	3385	no	1.18	73
186	PCB 170L	406	33.44	87592	1.07	169124	0.13659		0	3249			
		408	33.42	81531	yes		0.400040		0	2245	no	2.157	103
187	PCB 189L	406	36.84	226251	1.06	438903	0.193913		0	4287			
		408	36.83	212651	yes		a 1000.00		0	1778	no	1.419	65
188	PCB 202L	440	29.25	88688	0.94	183253	0.123049		0	4556			
		442	29.27	94565	yes				0	2941	no	1.531	81
189	PCB 205L	440	39.73	116858	0.92	244339	0.152081		0	3819			
		442	39.73	127481	yes				0	2359	no	1.139	74
190	PCB 208L	474	36.29	73458	0.8	165304	0.138275		0	2656			
		476	36.28	91846	yes				0	1672	no	0.76	82
191	PCB 206L	474	41.71	53924	0.79	122155	0.153286		U	1865			
		476	41.73	68232	yes				0	2742	no	0.724	80
192	PCB 209L	510	43.54	61724	1.16	114933	0.151237		0	3794		•••=	
		512	43.53	53210	yes				0.001	1237	no	2.039	125
193	PCB 28L	268	14.41	398376	1.08	766331	0.261491		0.001	824	110	LICCO	
	PCB Cleanup Standard	270	14.43	367955	yes				0	4759	20	1 343	103
194	PCB 111L	338	21.83	219618	1.65	352732	0.214746		0	4700	110	1.040	100
	PCB Cleanup Standard	340	21.84	133115	yes				0	2002	20	0 733	90
195	PCB 178L	406	26.98	82147	1.04	161299	0.187627		U	2011	110	0.700	00
	PCB Cleanup Standard	408	26.97	79152	yes				0.004	3209	20	1 03/	
196	PCB 31L	268	NotFnd	*	*	*			0.001		110	1.004	
100	PCB Audit Standard	270	14.26	*	no				•			0.046	
197	PCB 95	338	NotFnd	*	*	*			0		110	0.540	
107	PCB Audit Standard	1 340	17.73	*	no							1 225	
198	PCB 153L	372	NotFnd	*	*	*			0		110	1.220	
100	PCB Audit Standard	374	25.40	*	no					44070	-	-	_
199	PCB 9	234	11.19	2330435	1.64	3751749	8.393337		-	11372	110		
100	PCB Recovery Standard	1 236	11.19	1421314	yes					15124			_
200	PCB 521	302	15.36	666620	0.8	1501355	6.402231		-	8513	10	-	
200	PCB Recovery Standard	304	15.36	834735	yes					7887			
201	PCB 1011	338	19.77	789963	1.62	1277714	6.762128		-	18466	no	-	-
201	PCB Recovery Standard	1 340	19.76	487751	yes					10306			
202	PCB 138	372	26.57	689016	1.28	1225413	7.193607		-	29768	no	-	-
202	PCB Recovery Standar	d 374	26.56	536397	yes					26376			
202		440	39.18	529865	0.94	1096120	7.723644		-	13817	no	-	-
203	DCB Recovery Standar	d 442	39.17	566256	ves					17470			
	FCB Recovery Standard		00111										
	Chlorobinhonyls						-0.00051	0	-0.00051				
	Dieblorobinhonyle						0.081462	6	-0.00157				
	Trichlorobinhenvis						0.884385	17	-0.0016				
	Totrachlorohiphenyls						1.482493	23	-0.00217				
	Pontachlorohinhenvle						0.756558	19	-0.00156				
	Hexaeblarabinbonyls						1.69035	22	-0.00164				
	Hexachioropiphenyls						0.572426	13	-0.00156				
	Detechlorobiphenyls						0.045026	8	-0.00122				
	Octachioropiphenyls						-0.0008	0	-0.0008				
	Nonachioropipnenyis						-0.00097	0	-0.00097				
	Decachioropipnenyl						5.5127						
	PCB (total)												

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AutoSpec Ultima - M2





AutoSpec Ultima - M2

































#### **Quantify Sample Report** MassLynx 4.0 SP1 Page 20 of 207 Acquired Date Dataset: C:\MassLynx\Default.pro\QLD\M2160219 samples 1668A.qld February 23, 2016 12:16:16 PM Eastern Standard Time Last Altered: Printed: February 23, 2016 12:17:46 PM Eastern Standard Time **Description: BRP512-01R** Vial: 3 Date: 19-FEB-2016 Time: 13:47:37 Instrument: Autospec-UltimaE **Total NoCB F7** M2160219BS003 Smooth(SG,3x1) F7:SIR of 18 channels,EI+ BRP512-01R Anchor QEA, PG-SMA2-5-MUS-COC-16010, Ti 461.7246 PCB 206 1.655e+003 100 41.73 223 % 36.34 37 37 43.81 42,97 43.61 40.83 45.95 45.35 45.63 ^{37.97}38.17 38.8839.09 40.54 44.55 39.87 36.87 Λ min 36.0 37.0 38.0 39.0 40.0 41.0 42.0 43.0 44.0 45.0 46.0 **Total NoCB F7** M2160219BS003 Smooth(SG,3x1) F7:SIR of 18 channels,EI+ BRP512-01R Anchor QEA, PG-SMA2-5-MUS-COC-16010, Ti 463.7216 PCB 206 2.698e+003 100 41.73 378 % 36.34 40.81^{41.20} 37.35 39.89 40.17 45.58 43.47 43.91 44.36 38.59 44.94 39.21 42.28 42.71 37.21 ⊤ min 0 36.0 38.0 42.0 43.0 37.0 39.0 40.0 41.0 44.0 45.0 46.0 Total NoCB labeled F7 M2160219BS003 Smooth(SG,3x1) F7:SIR of 18 channels,EI+ BRP512-01R Anchor QEA, PG-SMA2-5-MUS-COC-16010, Ti 473.7648 PCB 208L 5.844e+005 PCB 206L 100 36 29 41.71 73458 53924 % 0min 36.0 37.0 40.0 42.0 43.0 38.0 39.0 41.0 44.0 45.0 46.0 **Total NoCB labeled F7** M2160219BS003 Smooth(SG,3x1) F7:SIR of 18 channels,EI+ BRP512-01R Anchor QEA, PG-SMA2-5-MUS-COC-16010, Ti 475.7619 PCB 208L 7.376e+005 PCB 206L 100 36.29 41.71 91846 68232 % 0 r min

36.0

Maxxam Analytics

37.0

38.0

39.0

40.0

41.0

42.0

43.0

45.0

46.0

#### **Quantify Sample Report** MassLynx 4.0 SP1 Acquired Date

C:\MassLynx\Default.pro\QLD\M2160219_samples_1668A.qld Dataset:

February 23, 2016 12:16:16 PM Eastern Standard Time Last Altered: Printed: February 23, 2016 12:17:46 PM Eastern Standard Time

# Description: BRP512-01R Vial: 3 Date: 19-FEB-2016 Time: 13:47:37 Instrument: Autospec-UltimaE

## **Total DeCB F7**





## Total DeCB labeled F7





AutoSpec Ultima - M2

Maxxam Analytics

⊤ min

Quantify Sample Acquired Date	e Report MassLynx 4.0 SP1	Page 22 of 207
Dataset:	C:\MassLynx\Default.pro\QLD\M2160219_samples_1668A.qld	
Last Altered: Printed:	February 23, 2016 12:16:16 PM Eastern Standard Time February 23, 2016 12:17:46 PM Eastern Standard Time	
Description: BR Vial: 3 Date: 19-FEB-20 Time: 13:47:37 Instrument: Aut	P512-01R 16 ospec-UltimaE	
Iockmass F1 M2160219BS003 Sr BRP512-01R Anchor lockmas	nooth(SG,3x1) · QEA, PG-SMA2-5-MUS-COC-16010, Ti s F1;8.83;132359	F1:SIR of 10 channels,EI+ 218.9856 1.036e+007
/0 		min
0	8.80 9.00 9.20 9.40 9.60 9.80 10.00 10.20 10.40	10.60 10.80
lockmass F2 M2160219BS003 Si BRP512-01R Ancho	nooth(SG,3x1) · QEA, PG-SMA2-5-MUS-COC-16010, Ti ockmass F2;11.36;55275 lockmass F2;12.12;25466	F2:SIR of 16 channels,EI+ 242.9856 3.544e+006
11.00	11.20 11.40 11.60 11.80 12.00 12.20 12.40 12.60 12.80 13.00	13.20 13.40
Iockmass F3 M2160219BS003 S BRP512-01R Ancho	mooth(SG,3x1) r QEA, PG-SMA2-5-MUS-COC-16010, Ti lockmass F3:15.65:11821	F3:SIR of 14 channels,EI+ 292.9824 2.690e+006
%		-
0 ⁻¹	14.00 14.25 14.50 14.75 15.00 15.25 15.50 15.75 16.00 16.25	16.50 16.75 min
Iockmass F4 M2160219BS003 S BRP512-01R Ancho Iockma	mooth(SG,3x1) r QEA, PG-SMA2-5-MUS-COC-16010, Ti iss F4;17.77;38836 lockmass F4;19.29;11975	F4:SIR of 14 channels,EI+ 330.9792 3.771e+006
- - - -		min
0- <u> </u> 17.00 17.	50 18.00 18.50 19.00 19.50 20.00 20.50 21.00 21.50	22.00 22.50

	Depart Masslvpx 40	SP1			Page 23 of 207
Quantify Sample Acquired Date	Report MassLynx 4.0				
Dataset:	C:\MassLynx\Default.pro\C	LD\M2160219_sam	nples_1668A.qld		
Last Altered: Printed:	February 23, 2016 12:16:1 February 23, 2016 12:17:4	6 PM Eastern Stand 6 PM Eastern Stand	dard Time dard Time		
Description: BR Vial: 3 Date: 19-FEB-20 Time: 13:47:37 Instrument: Aut	P512-01R 16 ospec-UltimaE				
Iockmass F5 M2160219BS003 S BRP512-01R Ancho	nooth(SG,3x1) · QEA, PG-SMA2-5-MUS-COC-16	010, Ti	lockmass F5;26.13;8351		F5:SIR of 14 channels,EI+ 354.9792 1.150e+006
100-10ckmass F5			25.50 26.00 26.50	27.00	
23.00 Iockmass F6 M2160219BS003 \$ BRP512-01R Anch	23.50 24.00 24 mooth(SG,3x1) r QEA, PG-SMA2-5-MUS-COC-1 lockmass F6;29.96;4597	.50 25.00 6010, Ti	lockmass F6;33.02;7867	lockmass F6 34.22 9954	F6:SIR of 14 channels,EI+ 404.9760 7.791e+005
% 029	00 30.00	31.00 32	2.00 33.00	34.00	min 35.00
Iockmass F7 M2160219BS003 BRP512-01R Anch 100	Smooth(SG,3x1) or QEA, PG-SMA2-5-MUS-COC- ass F7;37.23;8342	16010, Ti lockmass F7;40.08;114	409	lockmass F7 43.72 12848	F7:SIR of 18 channels,EI+ 454.9728 6.614e+005
%- - - - - - - - - - - - - - - - - - -		0 40.0	41.0 42.0 4	3.0 44.0	45.0 46.0







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2016-02-22

Maxxam Analytics

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CAM FCD-00884/2 Page 1 of 1

**HRMS** Calculation Review



Using post concal DAILY RFs

0.007

75

=C*D*100/(B*E*G)

00

=A*E/(C*H*F)*I

0.0078

Analyte Conc. (pg/g, pg/L, Total pg) = op/(ng/g, ng/L, Total ng) =

Internal Standard Recovery (%) =

1.128

1.05

hitials (

24/02/2016

Filename M2160219BS004 Acquired 19/02/2016 14:37

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Cali File M2160219_209

Sample ID BRP513-01R

Comments	Anchor QEA,	PG-SMA2-4-MUS-C	OC-16010, Ti
Instrument File	Ultima 2		
Sample Size	10.134	Dil Fac	1.00

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								Isomers					
Name 1 PCB 1	mass 188	RT 9.00	Area 873	ratio 2.86	Tot Area 1179	ng/g -0.00066	Code		DL -0.00066	S/N	Mod no	rrf 1.082	Rec -
2 PCB 2	MOCB 190 188 MoCB 190	8.99 10.10	306 374 218	yes 1.18	692	-0.00057			-0.00057	*	yes	1.248	-
3 PCB 3	188 MoCB 190	10.18	829 2361	0.35	3190	-0.00066			-0.00066	*	Op-O	1.079	-
4 PCB 4	DICB 224	10.30 10.31	2363 1552	1.52	3915	0.003741			-0.00103	9	yes	0.954	-
5 PCB 10	222 DiCB 224	10.38 10.39	333 434	0.77 no	768	-0.00083			-0.00083	*	yes	1.177	-
6 PCB 9	222 DiCB 224	11.20 11.20	1358 492	2.76	1850	-0.00092			-0.00092	*	no	1.357	-
7 PCB 7	222 DiCB 224	NotFnd 11.26	*	* no	*	-0.00108			-0.00108	· *	no	1.155	-
8 PCB 6	222 DiCB 224	<b>11.36</b> 11.37	<b>4051</b> 2974	1.36 ves	7024	0.002368			-0.00093	12 16	no	1.347	-
9 PCB 5	222 DiCB 224	NotFnd 11.51	*	* no	*	-0.00107			-0.00107	*	no	1.169	-
10 PCB 8	222 DICB 224	<b>11.55</b> 11.55	<b>16832</b> 10785	1.56 yes	27617	0.009596			-0.00096	48 50	no	1.307	-
11 PCB 14	222 DiCB 224	NotFnd 12.26	*	* no	*	-0.00093			-0.00093	*	no	1.351	-
12 PCB 11	222 DiCB 224	<b>12.66</b> 12.65	<b>13437</b> 9553	1.41 yes	22989	0.007854			-0.00094	31 32	no	1.33	-
13 PCB 13/12	222 DICB 224	12.78 12.79	-2559 -1640.38	1.56 OK	-4199.38	-0.00154	PCB 13/12 NDR		-0.00101	6 10	xL.	1.241	-
14 PCB 15	222 DICB 224	<b>12.95</b> 12.93	<b>51646</b> 33668	1.53 yes	85314	0.02964			-0.00144	124 123	no	0.871	-
15 PCB 19	256 TriCB 258	<b>11.68</b> 11.68	<b>2553</b> 2662	0.96 yes	5215	0.00535			-0.00075	35 38	no	0.899	-
16 PCB 30/18	256 TriCB 258	<b>12.49</b> 12.48	35888 33739	1.06 yes	69627	0.032825			-0.00069	488 491	no	0.976	-
17 PCB 17	256 TriCB 258	12.70	6778 6260	1.08 yes	13038	0.007586			-0.00085	72 70	no	0.79	-
18 PCB 27	256 TriCB 258	12.78	7 <b>451</b> 6798	1.1 yes	14249	0.005567			-0.00057	96 89	no	1.177	-
19 PCB 24	TriCB 258	Not-na 12.87	*	no	*	-0.00071			-0.00071	*	no	0.948	-
20 PCB 10	Z56 TriCB 258	12.91	12347 12012	1.03 yes	24360	0.014124	•		-0.00084	156 154	no	0.793	-
21 PGD 32	TriCB 258	13.14	12140	yes	24949	0.000593			-0.0005	149 157	no	1.335	-
23 PCB 23	TriCB 258	13.73	1124	yes	2047	-0.00078			-0.00076	· *	yes	1.484	-
24 PCB 26/29	TriCB 258	13.83	185 35406	no 1.01	70385	-0.00078			-0.00078	*	yes	1.446	-
25 PCB 25	TriCB 258	13.99	34979	yes	35621	0.020030			-0.0007	106	no	1.014	-
26 PCB 31	TriCB 258 256	14.11 14.26	17669 184410	yes	366015	0.091757			-0.000000	50	10	1.755	-
27 PCB 28/20	TriCB 258 256	14.28 14.43	181605 509958	yes 1.01	1015018	0 276477			-0.00067	564	no	1.000	-
28 PCB 21/33	TriCB 258 256	14.45 14.55	505060 88619	yes 1.01	176764	0.047562			-0.00007	1488	0	1.000	-
29 PCB 22	TriCB 258 256	14.55 <b>14.77</b>	88146 <b>79170</b>	yes 1.01	157688	0.04537			-0.00071	235 220	no	1 599	_
30 PCB 36	TriCB 258 256	14.78 NotFnd	78518	yes *	*	-0.00061			-0.00061	218	no	1.858	_
31 PCB 39	TriCB 258 256	15.62 <b>15.83</b>	* 3678	no 0.91	7737	0.002343			-0.00074	* 10	no	1.519	-
32 PCB 38	TriCB 258 256	15.82 NotFnd	4059	yes *	*	-0.00072			-0.00072	11 *	no	1.574	-
33 PCB 35	TriCB 258 256	16.20 <b>16.45</b>	* 3636	no 1.01	7231	0.002197			-0.00075	* 9	no	1.514	-
34 PCB 37	TriCB 258 256	16.47 <b>16.70</b>	3595 76038	yes 1.04	149178	0.050477			-0.00125	9 181	no	0.906	-
35 PCB 54	TriCB 258 290	16.72 13.08	73140 279	yes 0.84	610	-0.0006			-0.0006	176	yes	0.911	-
36 PCB 53/50	TCB 292 290	13.08 14.12	331 22622	yes 0.87	48608	0.030104			-0.001	136	no	0.77	-
37 PCB 45/51	1CB 292 290	14.11 14.48	25986 13544	yes 0.83	29839	0.019601			-0.00106	117 76	no	0.725	-
38 PCB 46	10B 292 290	14.49 14.64	16295 6947	yes 0.81	15523	0.012246			-0.00128	70 40	no	0.604	-
39 PCB 52	ТСВ 292 290	14.04 15.38	8076 164672	yes 0.8	370979	0.235062			-0.00102	37 918	no	0.752	-
40 PCB 73	290 290	NotFnd	∠00307 * *	yes *	*	-0.00077			-0.00077	867	no	1.002	-
41 PCB 43	290 TCB 292	15.53 15.50	6897 8903	0.77	15800	0.015008			-0.00153	37	no	0.502	-
42 PCB 69/49	290 TCB 292	15.65 15.63	74967 92783	0.81	167749	0.092754			-0.00089	307 401 385	no	0.862	-
				,						000			

43 PCB 48		290	15.83	41612	0.82	92430	0.064465	-0.00113	232	no	0.683	-
44 PCB 44/47/65	тсв	292 290	15.84 15.96	50818 157903	yes 0.81	354036	0.216482	-0.00099	217 694	no	0.779	-
	тсв	292	15.97	196133	yes	40000	0.0000.40	0.00070	664		0.093	
45 PCB 59/62/75	тсв	290 292	16.16	20546 25540	0.8 yes	46086	0.022346	-0.00078	95	110	0.965	-
46 PCB 42	TCB	290 292	16.29 16.27	31880 40295	0.79 Ves	72176	0.056931	-0.00128	164 160	no	0.604	-
47 PCB 40/41/71		290	16.58	70309	0.79	159337	0.110182	-0.00112	315	no	0.689	-
48 PCB 64	ICB	292 290	16.56 16.72	89028 47108	yes 0.79	106859	0.056606	-0.00086	246	no	0.9	-
49 PCB 72	тсв	292 290	16.70	59751 2571	yes 0.87	5526	0 002088	-0.00081	237 8	no	1.261	-
43 1 00 72	тсв	292	17.20	2955	yes	5520	0.002000		7	110		
50 PCB 68	тсв	<b>290</b> 292	<b>17.40</b> 17.42	<b>1837</b> 2478	0.74 yes	4315	0.001584	-0.00079	5 5	no	1.298	-
51 PCB 57	TCB	290	17.70	953 1390	0.69	2343	0.000756	-0.00069	4	yes	1.477	-
52 PCB 58		290	NotFnd	*	*	*	-0.00081	-0.00081	*	no	1.274	-
53 PCB 67	ICB	292 290	17.85 17.95	5651	no 0.78	12873	0.003726	-0.00062	16	yes	1.647	-
54 PCB 63	тсв	292 290	17.95 18 13	7222 4739	yes 0.76	11002	0 00342	-0.00067	16 14	ves	1.533	-
	тсв	292	18.15	6263	yes			0.000	14	,	4.070	
55 PCB 61/70/74/76	тсв	<b>290</b> 292	<b>18.36</b> 18.36	114025 148558	0.77 yes	262583	0.091161	-0.00075	233 235	yes	1.373	-
56 PCB 66	TCB	290 292	18.59 18.60	48374 62470	0.77	110844	0.033417	-0.00065	134 135	yes	1.581	-
57 PCB 55		290	NotFnd	*	*	*	~0.00083	-0.00083	*	no	1.229	-
58 PCB 56	ICB	292 290	18.73 19.07	5897	no 0.72	14143	0.005264	-0.0008	17	yes	1.28	-
59 PCB 60	тсв	292 290	19.07 19.23	8246 5575	yes 0.72	13363	0.00503	-0.00081	18 16	ves	1.266	-
	тсв	292	19.24	7788	yes		0.00004	0.00004	17		1 500	
60 PCB 80	тсв	290 292	19.50	*	no		-0.00064	-0.00004	*	110	1.590	-
61 PCB 79	тсв	290 292	NotFnd 20.63	*	* no	*	~0.00061	-0.00061	*	no	1.695	-
62 PCB 78	TCB	290	NotFnd	*	*	*	-0.00072	-0.00072	*	no	1.435	-
63 PCB 81	700	290	21.44	306	0.86	661	-0.001	-0.001	*	yes	1.027	-
64 PCB 77	ICB	292 290	21.45 21.89	355 2266	yes 0.71	5440	0.002046	-0.00095	6	no	1.077	-
65 PCB 104	тсв	292 326	21.89 NotEnd	3174 *	yes *	*	-0.00061	-0.00061	6 *	no	1.094	-
	PeCB	328	15.94	*	no		0.00400	0.00004	*		0.902	·
00 PCB 90	PeCB	328	16.15	1057	yes	2003	0.00100	-0.00084	8	110	0.002	-
67 PCB 103	PeCB	<b>326</b> 328	17.33 17.31	<b>1826</b> 1206	1.51 ves	3032	0.001961	-0.00101	6 6	yes	0.714	-
68 PCB 94	PoCB	326 328	17.47	915 521	1.75	1436	-0.00138	-0.00138	*	yes	0.521	-
69 PCB 95		326	17.77	70348	1.66	112664	0.081135	-0.00112	233	yes	0.641	-
70 PCB 100/93/102/	PeCB 98	328 326	17.76 18.00	42316 6681	yes 1.69	10631	0.008775	-0.00129	213 15	yes	0.559	-
71 PCB 88/91	PeCB	328 326	17.91 18.34	3950 5249	yes 1.53	8670	0.007019	-0.00126	14 16	ves	0.57	-
70 DOD 04	PeCB	328	18.33	3421	yes	40.440	0.000840	0.00147	17	,	0.404	
72 PCB 84	PeCB	326 328	18.49	4011	yes	10449	0.009819	-0.00147	20 19	yes	0.491	-
73 PCB 89	PeCB	326 328	NotFnd 18.84	*	* no	*	-0.00133	-0.00133	*	no	0.541	-
74 PCB 121	DeCD	326	NotFnd	*	*	*	-0.00098	-0.00098	*	no	0.733	-
75 PCB 92	Ресь	328 326	19.08	14139	1.6	22992	0.018208	-0.00124	44	no	0.583	-
76 PCB 113/90/101	PeCB	328 <b>326</b>	19.35 <b>19.79</b>	8852 108259	yes 1.63	174681	0.11879	-0.00106	42 328	yes	0.679	-
77 PCB 83/99	PeCB	328 326	19.76 20.23	66422 44710	yes 1.64	71890	0.064074	-0.00139	314 127	ves	0.518	-
70 DOD 440	PeCB	328	20.22	27180	yes		0.00007	0.00007	122	,	0.00	
78 PCB 112	PeCB	326 328	20.30	*	no		-0.00087	-0.00087	*	10	0.65	-
79 PCB 109/119/86/	97/125/ PeCB	<b>326</b> 328	20.69 20.62	<b>29128</b> 18316	1.59 yes	47444	0.032838	-0.00108	48 46	no	0.667	-
80 PCB 117/116/85	BACB	326	21.19 21.10	9551 5860	1.63	15420	0.009928	-0.00101	28 26	no	0.717	-
81 PCB 110/115	Peod	326 326	21.19	70784	1.66	113419	0.078033	-0.00107	201	no	0.671	-
82 PCB 82	PeCB	328 <b>326</b>	21.32 21.58	42636 <b>2681</b>	yes 1.55	4411	0.003963	-0.0014	186 8	no	0.514	-
83 PCB 111	PeCB	328 326	21.59 NotEnd	1730 *	yes *	*	-0 00098	-0.000.0-	7 *	no	0.749	-
	PeCB	328	21.85	*	no	4000	0.00000	0.00000	*		0.050	
84 PCB 120	PeCB	326 328	22.24 22.25	825 473	1.74 yes	1298	-0.00085	-0.00085	*	yes	0.853	-
85 PCB 108/124	PeCB	326 328	23.20 23.21	4000 2654	1.51 ves	6655	0.002456	-0.00115	5	no	1.251	-
86 PCB 107		326	23.42	9617	1.45	16250	0.005709	-0.0011	12	no	1.314	-
87 PCB 123	PeCB	328 326	23.40 23.51	0034 1325	yes 1.51	2202	-0.00161	-0.00161	*	no	0.894	-
88 PCB 106	PeCB	328 326	23.51 NotFnd	878 *	yes *	*	-0.00105	-0.00105	*	no	1.375	-
90 DCD 149	PeCB	328	23.63	*	no 1 57	199750	0.078733	-0.00147	* 150	no	0.081	_
00 FOD 110	PeCB	328	23.80	73424	yes	100/00	0.010132	0.00147	147	110	0.001	-

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									0.00440	-0.00118	*	no	1.222	-
90 F	CB .	122	32	6	24.10	1311	1.54	2161 ·	-0.00118	-0.00110	*			
			PeCB 32	8	24.08	1821	1.36	3156	-0.00143	-0.00143	*	no	1.01	-
91 6	СБ	114	PeCB 32	28	24.28	1335	yes			0.00149	*	no.	0.977	-
92 F	св	105	32	26	24.84	33901	1.51	56405 (	0.024387	-0.00148	43 45	no	0.577	
			PeCB 32	28	24.85	22505	yes *	*	-0.00107	-0.00107	*	no	1.348	-
93 F	РСВ	127	32	26	NotFnd	*	no		-0.00107		*			
01 0		126	Pece 32 32	20	27.75	625	1.41	1068	-0.00148	-0.00148	*	yes	0.977	-
54 1	00	120	PeCB 32	28	27.72	443	yes			-0.00063	*	no	0.997	-
95 I	≥СВ	155	36	60	NotFnd	*	*	*	-0.00063	-0.00000	*			
		450	HxCB 36	52	19.63 NotEnd	*	*	*	-0.00093	-0.00093	*	no	0.675	-
96 1	PCB	152	HYCB 36	50 52	19.78	*	no				*		0 620	
97	РСВ	150	36	50	19.89	410	1.41	700	-0.00098	-0.00098	*	yes	0.000	-
			HxCB 36	62	19.88	290	yes	20210	0 02342	-0.00093	91	no	0.672	-
98	РСВ	136	30	60 80	20.19	16//8	1.25 Ves	30210	0.02342		93			
00		145	HXCB 3	62 60	NotEnd	*	*	*	-0.00108	-0.00108	*	no	0.579	-
99	100	140	HxCB 3	62	20.41	*	no			-0.00128	*	ves	0.487	-
100	PCB	148	3	60	21.53	641	1.47	1078	-0.00128	-0,00120	*	,		
		454/405	HxCB 3	62 60	21.55	437	1.32	82873	0.095801	-0.00139	207	yes	0.451	-
101	PCB	151/135	HxCB 3	62	22.03	35744	yes			0.00445	199	100	0.544	
102	РСВ	154	3	60	22.24	2272	1.15	4253	0.004074	-0.00115	13	yes	0.044	
			HxCB 3	62	22.21	1981	yes	11763	0 012694	-0.00129	35	yes	0.483	-
103	PCB	5 144	3	60 62	22.51	5473	ves	11/05	0.012004		36		0.047	
104	PCB	147/149	3	60	22.80	156686	1.32	275767	0.222067	-0.00119	639 ene	yes	0.647	-
			HxCB 3	62	22.80	119081	yes		0 000700	-0.00137	22	ves	0.563	-
105	PCB	3 134/143	3	60	22.99	5894	1.28	10507	0.009726	0.00107	21			
		400/440	HxCB 3	62	23.06	4013	1.23	2792	0.002277	-0.00121	5	yes	0.639	-
106	PCB	3 1 3 9/1 40	HxCB 3	62	23.31	1250	yes			0.00454	6	VOC	0.513	_
107	PCE	3 131	3	860	23.49	1084	1.24	1954	0.001985	-0.00151	4	yes	0.010	
			HxCB 3	862	23.49	871	yes *	*	-0.00132	-0.00132	*	no	0.583	-
108	PCE	3 142		360	NotEnd 23.65	*	no		0.00102		*		0.500	
109	PCF	3 132	FIXOD C	360	23.88	21336	1.28	38040	0.037913	-0.00148	81	yes	0.523	-
100	1 0 -		HxCB 3	362	23.88	16704	yes			-0.00124	10	ves	0.623	-
110	PCE	3 133	3	360	24.31	2710	1.4	4653	0.003892	-0.0012-1	8	,		
		105	HXCB 3	362	24.31	298	1.18	550	-0.00108	-0.00108	*	yes	0.714	-
111	PUE	5 100	HxCB 3	362	24.68	252	yes			0.00118	100	Vec	0.663	_
112	PCE	3 146		360	24.88	31997	1.31	56511	0.044372	~0.00116	115	yes	0.000	
			HxCB 3	362	24.88	24513	yes *	*	-0.00087	-0.00087	*	no	0.888	-
113	PCE	3 161		360	NotFind 25.03	*	no		-0.00000		*			
11/	PCF	B 153/168		360 360	25.43	282524	1.29	502211	0.330304	-0.00098	1066	no	0.792	-
114	FUL	5 155/100	HxCB	362	25.47	219686	yes			-0.00124	1027	ves	0.621	-
115	PC	B 141		360	25.63	7103	1.38	12239	0.010264	-0.00124	23	,		
			HxCB :	362	25.62	5136	yes 1 32	11754	0.010969	-0.00138	23	yes	0.558	-
116	PCI	B 130	HYCB	362	26.00	5069	yes		••••		22		0 562	
117	PC	B 137	TIXOD	360	26.30	7940	1.32	13977	0.012921	-0.00137	24	yes	0.565	-
			HxCB	362	26.21	6036	yes	*	0.00004	-0.00094	*	no	0.826	-
118	PC	B 164	11.00	360	NotFnd	*	no		-0.00034		*			
440		R 138/163/13	HXCB	362 360	26.61	214081	1.31	377850	0.305677	-0.0012	784	yes	0.644	-
110	,	D 100/100/1.	HxCB	362	26.62	163768	yes			0.00107	/35	no	0.723	-
120	PC	B 160		360	NotFnd	*	*	*	-0.00107	-0.00107	*			
		D 450	HxCB	362	26.80	20502	no 1.33	35957	0.020554	-0.00085	70	yes	0.911	-
121	PC	B 158	HxCB	362	26.98	15455	yes				66 5 5		0.7	
122	2 PC	B 128/166		360	27.82	19145	1.32	33648	0.025024	~0.0011	00 54	110	0.7	
	-		HxCB	362	27.80	14503	yes *	*	-0 00056	-0.00056	*	no	1.379	-
123	B PC	в 159	цуср	362	1N0tH10	*	no		0.00000		*		4.054	
12,	1 PC	B 162	TACE	360	29.09	756	1.76	1186	~0.00062	-0.00062	*	yes	1.254	-
, 2.		=	HxCB	362	29.07	430	no	00070	0.009667	-0,00082	36	yes	0.946	-
12	5 PC	B 167		360	29.53	11792	1.28	20972	0.00866/	J, G G G G M	35			
40		B 166/157	HxCB	362 360	∠9.00 30.68	23282	yes 1.26	41741	0.017662	-0.00076	65	no	1.017	-
12	o PC	100/10/	HxCB	362	30.71	18459	yes			_n nnno+	63 *	no	0.954	-
12	7 PC	CB 169		360	NotFnd	*	*	*	-0.00081	-0.00061	*	110	0.001	
			HxCB	362	34.13	*	no 1 1 2	455	-0.00081	~0.00081	*	yes	1.012	-
12	8 PC	CB 188	HnCB	394	24.24	214	ves	100			*		4.046	
12	9 PC	CB 179		394	24.54	20283	1.06	39432	0.026587	-0.0008	102 102	no	1.010	-
.2			HpCB	396	24.52	19149	yes		0 00007	-0,00087	*	no	0.937	-
13	0 PC	CB 184		394	NotFnd	*	*	*	~0.00087	0.00007	*	-		
40	4	176	HpCB	396	∠5.00 25.33	5860	1.03	11543	0.007967	-0.00082	29	no	0.993	-
13	1 PC	0/ו כו.	HDCB	396	25.32	5683	yes			0 00005	29	20	0.865	-
13	2 PC	CB 186		394	NotFnd	*	*	*	-0.00095	~0.00095	*	10	0.000	
			HpCB	396	25.75	*	no 1 00	1/220	0.014305	-0.00119	36	no	0.686	-
13	3 P(	CB 178	LL-CD	394	27.02	6905	ves	14523	0.01-000		35		0.000	
13	4 P(	CB 175	TIPOD	394	27.62	1510	1.17	2804	0.00276	-0.00117	7	no	0.696	-
10			HpCB	396	27.62	1294	yes	40044	0 400000	-0 00121	268	no	0.673	-
13	5 P(	CB 187	11.00	394	27.89	55815	1.11	106141	1 0.100038	0.00100	255			
40		CB 182	HPCE	396	∠1.88 NotFnd	*	yes *	*	-0.00121	~0.00121	*	no	0.674	-
10	0 24	00 102	HpCE	396	28.10	*	no							

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137 PCB 183	394	28.50	38516	1.07	74482	0.044237	-0.00099	131	yes	1.153	-
138 PCB 185	нрСВ 396 394	28.51 NotFnd	35966	yes *	*	-0.00142	-0.00142	*	no	0.805	-
139 PCB 174	HpCB 396 394	28.58 NotFnd	*	no *	*	-0.00121	-0.00121	*	no	0.947	-
140 BCB 177	HpCB 396	28.74	*	no 1.03	48605	0.036159	-0 00124	*	no	0.921	-
140 FOB 111	HpCB 396	29.16	23889	yes	40000	0.000100	0.00121	85		0.005	
141 PCB 181	394 HpCB 396	NotFnd 29.57	*	no	*	-0.00129	-0.00129	*	по	0.885	-
142 PCB 171/173	394 HpCB 396	29.78	13100 12237	1.07 ves	25337	0.019331	-0.00127	42 44	no	0.898	-
143 PCB 172	394	31.45	1333	1.08	2565	0.001957	-0.00127	5	no	0.898	-
144 PCB 192	HpCB 396 394	31.44 NotFnd	1231	yes *	*	-0.0011	-0.0011	4 *	no	1.043	-
145 PCB 193/180	HpCB 396 394	31.76 <b>32.13</b>	* 86156	no 1.1	164629	0.10582	-0.00081	* 278	no	1.408	-
	HpCB 396	32.08	78473	yes	4022	0.002228	-0.0002	264	20	1.24	_
146 PCB 191	394 HpCB 396	32.51	2082	yes	4033	0.002228	-0.00092	7	110	1.24	-
147 PCB 170	<b>394</b> HpCB 396	<b>33.45</b> 33.47	<b>14977</b> 13516	1.11 yes	28493	0.023299	-0.0009	48 44	yes	1.271	-
148 PCB 190	394	34.03	9387	1.02	18622	0.009988	-0.00089	31 31	yes	1.277	-
149 PCB 189	пров 396 394	36.87	9235 3403	yes 1.1	6493	0.002631	-0.00075	9	no	0.944	-
150 PCB 202	HpCB 396 428	36.88 <b>29.28</b>	3090 <b>3580</b>	yes 0.81	8004	0.007853	-0.00083	8 26	no	0.988	-
151 DCD 201	OcCB 430	29.28	4424 2455	yes	5108	0.003666	-0.00076	27 16	no	1.068	-
151 FGB 201	OcCB 430	30.18	2652	yes	5100		0.00070	16		4.050	
152 PCB 204	428 OcCB 430	30.95 30.88	3 10	0.27 no	13	-0.00078	-0.00078	*	yes	1.052	-
153 PCB 197	428	31.13 31.12	<b>794</b>	0.81	1774	0.001429	-0.00086	5 5	yes	0.951	-
154 PCB 200	428	NotFnd	*	*	*	-0.00077	-0.00077	*	no	1.056	-
155 PCB 198/199	OcCB 430 428	31.24 34.21	* 420	no 0.86	906	-0.00116	-0.00116	*	yes	0.702	-
156 PCB 196	OcCB 430 428	34.19 34.92	486 342	yes 0.86	739	-0.00111	-0.00111	*	ves	0.734	-
	OcCB 430	34.93	397	yes	7240	0.007007	0.00116	*		0 711	_
157 PCB 203	428 OcCB 430	35.14 35.12	3522 3790	yes	7312	0.007887	-0.00115	20	110	0.711	-
158 PCB 195	428 OcCB 430	36.57 36.59	645 850	0.76 no	1494	-0.00093	-0.00093	*	Op-O	1.046	-
159 PCB 194	428	39.21	5449	0.92	11379	0.007796	-0.00086	21	no	1.119	-
160 PCB 205	430 428	39.22 39.76	860	0.9	1810	0.001052	-0.00089	3	yes	1.091	-
161 PCB 208	OcCB 430 462	39.77 NotFnd	950 *	yes *	*	-0.00084	-0.00084	3	no	1.023	-
160 DCB 207	NoCB 464	36.33 NotEnd	*	no *	*	-0.00066	-0 00066	*	no	1 304	-
102 FCB 207	NoCB 464	37.35	*	no		-0.00000	0.00000	*		4.007	
163 PCB 206	462 NoCB 464	41.73 41.71	307 339	0.91 no	647	-0.00084	-0.00084	*	yes	1.027	-
164 PCB 209	498 DCB 500	43.59	252 163	1.55	415	-0.00081	-0.00081	*	yes	1.04	-
165 PCB 1L	200	8.99	339845	3.35	441203	0.143851	0	6443	no	0.824	73
166 PCB 3L	202 200	8.97 10.18	331450	yes 3.43	428172	0.134923	0	6128	no	0.852	68
167 PCB 4L	202 234	10.18 10.30	96723 134933	yes 1.65	216501	0.107163	0	845 3345	no	0.543	54
	236	10.28	81568	yes	GEDEAA	0 162120	0	4204		1 074	83
168 PCB 15L	234 236	12.93	407421 245123	yes	602044	0.163139	0	2748	110	1.074	00
169 PCB 19L	<b>268</b> 270	<b>11.68</b> 11.68	110421 103666	1.07 yes	214087	0.099443	0.001	431 265	no	0.578	50
170 PCB 37L	268	16.70	334205	1.08	644132	0.215584	0.001	850 842	no	1.987	109
171 PCB 54L	302	13.06	111921	0.83	247231	0.126707	0	1028	no	1.297	64
172 PCB 81L	304 <b>302</b>	13.07 <b>21.42</b>	135310 <b>226885</b>	yes 0.81	508026	0.194361	0	2783 1471	no	1.738	98
173 DCB 771	304 302	21.42	281141 219930	yes 0.82	487062	0 193097	0	2142 1378	no	1.677	98
113 FOB 112	304	21.85	267132	yes		0.150000	0	1985		1 150	00
174 PCB 104L	338 340	<b>15.92</b> 15.93	141807 88920	1.59 yes	230727	0.158803	U	5095 5873	no	1.156	00
175 PCB 123L	338 340	23.49 23.50	313665 189529	1.65 ves	503194	0.206754	0	4051 2735	no	1.936	105
176 PCB 118L	338	23.77	299252	1.64	482082	0.201204	0	3789 2590	no	1.906	102
177 PCB 114L	338	23.76 24.26	283836	1.67	453914	0.203656	0	3576	no	1.773	103
178 PCB 105L	340 338	24.26 <b>24.83</b>	170078 <b>288879</b>	yes 1.62	467448	0.204023	0	2376 3619	no	1.822	103
170 DCD 4281	340	24.81	178569	yes	457607	0 209732	n	2509 3151	no	1.735	106
119 PUD 120L	340	27.68	174400	yes		0.2001.52	0	2188			
180 PCB 155L	<b>372</b> 374	<b>19.61</b> 19.61	<b>135176</b> 106655	1.27 yes	241831	U.141/1	0	8269 4125	no	1.404	72
181 PCB 167L	372 374	29.52 29.49	285166 219723	1.3 ves	504889	0.196813	0	3201 2687	no	2.11	100
182 PCB 156L/157L	372	30.68	517619	1.3	917198	0.392704	0	4830	no	1.921	99
183 PCB 169L	374 372	30.69 34.10	399578 177378	yes 1.33	310334	0.135312	0	1789	no	1.886	69
	374	34.07	132955	yes				1486			

Ţ

									0	5039	no	1.329	72
		406	24.20	117538	1.06	228128	0.141135		Ŭ,	3428			
184 F	CB 188L	400	24.20	110590	yes				0	2428	no	1.349	67
		400	32 11	113947	1.09	218134	0.132564		0	1893			
185 F	PCB 180L	400	32.09	104187	yes				0	1979	no	1.18	67
		400	33 44	98110	1.07	189898	0.131875		U U	1653			
186	PCB 170L	400	33.42	91788	yes				0	3973	no	2.157	99
		406	36.84	267623	1.08	516165	0.19609		-	4734			
187	PCB 189L	408	36.83	248542	yes				0	5257	no	1.419	60
	202 000	440	29.25	96791	0.91	203686	0.117603			2466			~ 1
188	PCB 202L	442	29.27	106895	yes				0	2841	no	1.531	84
	200 205	440	39.73	149342	0.92	311351	0.166633			1495			
189	PCB 205L	442	39.73	162009	yes				0	1181	no	1.139	71
400	DCD 2081	474	36.29	86948	0.8	195108	0.140334			4215			05
190		476	36.28	108160	yes		0.40704		0	871	no	0.76	80
404	DCB 206	474	41.71	69004	0.8	155339	0.16/61			3224		0 704	04
191	PCB 200L	476	41.73	86335	yes		0 405497		0	5334	no	0.724	04
400	DCB 2091	510	43.56	80451	1.23	145994	0.165167			3797		0.000	106
192	PCB 203L	512	43.53	65543	yes		0.076709		0.001	1297	no	2.039	120
400	DCD 291	268	14.41	435972	1.06	848988	0.276796			1319		4 0 40	104
195	PCB Cleanup Standar	d 270	14.43	413016	yes		0.006977		0	5844	no	1.345	104
404	PCB (111)	338	21.83	240499	1.69	383081	0.220077			4606		0 700	90
1 54	DCB Cleanup Standar	rd 340	21.84	142582	yes	1700.40	0 404068		0	3530	no	0.755	03
405	PCB Cleanup Clands	406	27.00	88750	1.05	172943	0.194000			2443		4 00 4	
195	PCB Cleanup Standal	rd 408	26.97	84193	yes	+			0.001		no	1.934	
106	PCB Oldanup Otanies	268	NotFnd	*	*	·						0.046	
190	PCB Audit Standa	rd 270	14.26	*	no				0		no	0.946	
107	PCB 951	338	NotFnd	*	*							4 005	
191	PCB Audit Standa	rd 340	17.73	*	no	*			0		no	1.220	
102	PCB 1531	372	NotFnd	*	*								_
100	PCB Audit Standa	rd 374	25.40	*	no	400476/	0.58264		-	24769	no	-	-
100	PCB 9L	234	11.18	2553315	1.67	4081764	9.00204			18906			
15.	PCB Recovery Standa	ard 236	11.19	1528449	yes	404904	7 7 378756		-	8224	no	-	
201	PCB 521	302	15.36	734627	0.8	1646917	1.5/0/00			14447			-
20	PCB Recovery Standa	ard 304	15.36	914290	yes	407024	7 654827		-	22128	no	-	
20	1 PCB 101L	338	19.77	851684	1.62	15/0510	1.004021			18290			-
20	PCB Recovery Standa	ard 340	19.76	526634	yes	422200	2 8 21167		-	15049	no	-	
20	2 PCB 138L	372	26.57	753976	1.3	155500	2 0.2110.			24772			-
20	PCB Recovery Standa	ard 374	26.56	579026	yes	422779	1 9 891587		-	12035	10	-	
20	3 PCB 194L	440	39.18	647463	0.94	133/12	1 0.001001			6192			
20	PCB Recovery Stand	ard 442	39.17	690258	yes								
							-0 00066	0	-0.00066				
	Chlorobiphenyls						0.053199	5	-0.00144				
	Dichlorobiphenvis						0.619729	15	-0.00125				
	Trichlorobiphenvls						1.080279	22	-0.00153				
	Tetrachlorobinhenvis						0.547487	17	-0.00161				
	Dentachlorobinhenvis	2					0.047407	20	-0.00151				
	Pentachiolophonyls						1.200203	14	-0.00142				
	Hexachioropiphenyis	,					0.405307	6	-0.00116				
	Heptachioropiphenyi	3					0.029683	õ	-0.00084				
	Octachlorobiphenyls						-0.00084	0	0.00004				
	Nonachlorobiphenyls	5					-0.00081	0	-0.00081				
	Decachlorobiphenyl						3,935947						
	PCB (total)												

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#### Quantify Sample Report MassLynx 4.0 SP1

Acquired Date

Last Altered:	February 23,	2016	12:16:16	PM I	Eastern	Standard	Time
Printed:	February 23,	2016	12:17:46	PM I	Eastern	Standard	Time

Description: BRP513-01R Vial: 4 Date: 19-FEB-2016 Time: 14:37:56 Instrument: Autospec-UltimaE

## **Total TeCB F2**



## **Total TeCB F2**



12.20

12.40

12.80

13.00

13.20

12.60

# **Total TeCB labeled F2**

11.20

11.40

11.60

11.80

12.00

11.00



12.20

12.40

12.60

12.80

13.00

11.00

11.20

11.40

11.60

11.80

12.00

13.20

13.40

13.40


























AutoSpec Ultima - M2 Maxxam Analytics





Dataset: C:\MassLynx\Default.pro\QLD\M2160219_samples_1668A.qld Last Altered: February 23, 2016 12:16:16 PM Eastern Standard Time Printed: February 23, 2016 12:17:46 PM Eastern Standard Time Description: BRP513-01R Vial: 4 Date: 19-FEB-2016 Time: 14:37:56 Instrument: Autospec-UltimaE lockmass F1 M2160219BS004 Smooth(SG,3x1) BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	nnels,El+ 218.9856 307e+006
Last Altered: February 23, 2016 12:16:16 PM Eastern Standard Time Printed: February 23, 2016 12:17:46 PM Eastern Standard Time Description: BRP513-01R Vial: 4 Date: 19-FEB-2016 Time: 14:37:56 Instrument: Autospec-UltimaE Iockmass F1 M2160219BS004 Smooth(SG,3x1) BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti Iockmass F1;8.93;39708 100 %	nnels,El+ 218.9856 307e+006
Description: BRP513-01R Vial: 4 Date: 19-FEB-2016 Time: 14:37:56 Instrument: Autospec-UltimaE lockmass F1 M2160219BS004 Smooth(SG,3x1) BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti lockmass F1;8.93;39708 100 %	nnels,El+ 218.9856 307e+006
Iockmass F1 F1:SIR of 10 char   M2160219BS004 Smooth(SG,3x1) F1:SIR of 10 char   BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti 9.8   100 Iockmass F1;8.93;39708	nnels,El+ 218.9856 807e+006
%	
	min
0	0.80
Iockmass F2 F2:SIR of 16 chan   M2160219BS004 Smooth(SG,3x1) F2:SIR of 16 chan   BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti 3.5   100 lockmass F2;11.22;45885	annels,El+ 242.9856 517e+006
% 0	min
Iockmass F3 F3:SIR of 14 cha   M2160219BS004 Smooth(SG,3x1)   BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti Iockmass F3:15.53;12967	annels,El+ 292.9824 634e+006
100 %-	
0 13.75 14.00 14.25 14.50 14.75 15.00 15.25 15.50 15.75 16.00 16.25 16.50 16.75	min
Iockmass F4 Iockmass F4 Iockmass F4 Iockmass F4 F4:SIR of 14 cha   M2160219BS004 Smooth(SG,3x1) Iockmass F4 20.96 21.48   BRP513-01R Iockmass F4;17.95;39663 Iockmass F4;19.91;35206 37000 31187 3.	iannels,El+ 330.9792 3.648e+006
9 	n re min

Quantify Samp Acquired Date	le Report MassLynx 4.0 SP1	Page 46 of 207
Dataset:	C:\MassLynx\Default.pro\QLD\M2160219_samples_1668A.qld	
Last Altered: Printed:	February 23, 2016 12:16:16 PM Eastern Standard Time February 23, 2016 12:17:46 PM Eastern Standard Time	
Description: B Vial: 4	RP513-01R	

Vial: 4 Date: 19-FEB-2016 Time: 14:37:56 Instrument: Autospec-UltimaE

#### lockmass F5 lockmass F5 26.95 11743 F5:SIR of 14 channels,EI+ M2160219BS004 Smooth(SG,3x1) BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti 354.9792 1.139e+006 lockmass F5;25.95;13898 lockmass F5;23.44;11322 100 % min רך 0 27.00 27.50 28.00 26.50 26.00 25.50 24.50 25.00 23.50 24.00 23.00 lockmass F6 F6:SIR of 14 channels,EI+ M2160219BS004 Smooth(SG,3x1) 404.9760 BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti lockmass F6;33.10;8980 lockmass F6;34.51;12091 7.785e+005 lockmass F6;31.06;8698 100 % ----- min 0-35.00 33.00 34.00 32.00 30.00 31.00 29.00 lockmass F7 F7:SIR of 18 channels,EI+ M2160219BS004 Smooth(SG,3x1) 454.9728 BRP513-01R Anchor QEA, PG-SMA2-4-MUS-COC-16010, Ti 6.848e+005 lockmass F7;40.15;12264 lockmass F7;42.81;4941 lockmass F7;37.56;6617 100-% 🕂 min 0-45.0 46.0 44.0 43.0 40.0 41.0 42.0 37.0 38.0 39.0 36.0

































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Maxxam Analytics International 6740 Campobello Rd. Mississauga, Ontario, Canada L5N 2L8 1-800-668-0639 <u>www.maxxamanalytics.com</u>

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# APPENDIX E DATA VALIDATION REPORTS



Anchor Environmental, LLC 720 Olive Way, Suite 1900 Seattle, WA 98101 ATTN: Ms. Cindy Fields January 19, 2016

SUBJECT: Port Gamble, Data Validation

Dear Ms. Fields,

Enclosed is the final validation report for the fraction listed below. This SDG was received on December 23, 2015. Attachment 1 is a summary of the samples that were reviewed for each analysis.

#### LDC Project #35625:

#### SDG # Fraction

AQJ9 Polynuclear Aromatic Hydrocarbons

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for Port Gamble Bay, Washington, May 2014
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely.

Christina Rink Project Manager/Chemist



Anchor Environmental, LLC 720 Olive Way, Suite 1900 Seattle, WA 98101 ATTN: Ms. Cindy Fields February 22, 2016

SUBJECT: Revised Port Gamble, Data Validation

Dear Ms. Fields,

Enclosed is the revised validation report for the fraction listed below. Please replace the previously submitted report with the enclosed revised report.

#### LDC Project #35625:

#### SDG # Fraction

- AQJ9 Polynuclear Aromatic Hydrocarbons
  - Revised to add method blank qualifications.

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink Project Manager/Chemist

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:	Port Gamble
LDC Report Date:	February 22, 2016
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	Analytical Resources, Inc.

Sample Delivery Group (SDG): AQJ9

Sample Identification	Laboratory Sample	Matrix	Collection Date
PG-GP-1-PEMD-151109-A	AQJ9A	PEMD	11/09/15
PG-PJ-1-PEMD-151109-A	AQJ9C	PEMD	11/09/15
PG-WS-1-PEMD-151109-A	AQJ9E	PEMD	11/09/15
PG-SMA2-5-PEMD-151109-A	AQJ9G	PEMD	11/09/15
PG-SMA2-4-PEMD-151109-A	AQJ9I	PEMD	11/09/15
PG-SMA2-4-PEMD-151109-ADL	AQJ9IDL	PEMD	11/09/15
PG-SMA2-3-PEMD-151110-A	AQJ9K	PEMD	11/10/15
PG-SMA2-3-PEMD-151110-ADL	AQJ9KDL	PEMD	11/10/15
PG-SMA2-3-PEMD-151110-B	AQJ9L	PEMD	11/10/15
PG-SMA2-3-PEMD-151110-BDL	AQJ9LDL	PEMD	11/10/15
PG-SMA2-2-PEMD-151110-A	AQJ9M	PEMD	11/10/15
PG-SMA2-2-PEMD-151110-ADL	AQJ9MDL	PEMD	11/10/15
PG-SMA2-1-PEMD-151110-A	AQJ9O	PEMD	11/10/15
PG-SMA2-1-PEMD-151110-ADL	AQJ9ODL	PEMD	11/10/15
PG-FB-PEMD-151110	AQJ9Q	PEMD	11/10/15
PG-TB-PEMD-151110	AQJ9R	PEMD	11/10/15

#### PEMD= Polyethylene Membrane Device

1

#### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Quality Assurance Project Plan for Port Gamble Bay, Washington (May 2014) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

### I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

#### II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

#### III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

#### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/14/15	Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	26.0 24.7 37.1	PG-SMA2-4-PEMD-151109-ADL PG-SMA2-3-PEMD-151110-ADL PG-SMA2-3-PEMD-151110-BDL PG-SMA2-2-PEMD-151110-ADL PG-SMA2-1-PEMD-151110-ADL	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

#### V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB-111815	11/18/15	Naphthalene	1.33 ug/Kg	All samples in SDG AQJ9

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PG-SMA2-4-PEMD-151109-ADL (10X)	Naphthalene	22.6 ug/Kg	22.6U ug/Kg
PG-SMA2-3-PEMD-151110-ADL (10X)	Naphthalene	14.3 ug/Kg	14.3U ug/Kg
PG-SMA2-3-PEMD-151110-BDL (10X)	Naphthalene	13.3 ug/Kg	13.3U ug/Kg
PG-SMA2-1-PEMD-151110-ADL (10X)	Naphthalene	18.5 ug/Kg	18.5U ug/Kg
PG-SMA2-2-PEMD-151110-A	Naphthalene	5.47 ug/Kg	5.47U ug/Kg

#### VI. Field Blanks

Sample PG-TB-PEMD-151110 was identified as a trip blank. No contaminants were found with the following exceptions:

Blank ID	Compound	Concentration (ug/Kg)
PG-TB-PEMD-151110	Naphthalene 2-Methylnaphthalene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene	19.9 7.28 1.24 1.48 3.44 2.40 4.17 5.21

Sample PG-FB-PEMD-151110 was identified as a field blank. No contaminants were found with the following exceptions:

Blank ID	Compound	Concentration (ug/Kg)
PG-FB-PEMD-151110	Naphthalene 2-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene	41.9 58.7 1.61 48.4 23.6 32.1 1.71 12.6 7.47

#### VII. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for sample PG-SMA2-5-PEMD-151109-A. Using professional judgment, no data were qualified when one surrogate %R was outside the QC limits and the %R was greater than or equal to 10%.

#### VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

#### IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
LCS/D 111815 (All samples in SDG AQJ9)	Naphthalene 2-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene Perylene Benzo(e)pyrene Total Benzofluoranthenes	47.8 (50-150) 44.5 (50-150) 45.1 (50-150) 44.5 (50-150) - - - - - 47.5 (50-150) - - 24.1 (50-150) 48.1 (50-150) -	36.2 (50-150) 37.1 (50-150) 35.0 (50-150) 33.8 (50-150) 49.6 (50-150) 49.6 (50-150) 49.6 (50-150) 49.6 (50-150) 47.2 (50-150) 47.2 (50-150) 43.9 (50-150) 47.2 (50-150) 46.0 (50-150) 47.2 (50-150) 44.8 (50-150) 23.5 (50-150) 40.9 (50-150) 43.9 (50-150)	J (all detects) UJ (all non-detects)	Ρ

Relative percent differences (RPD) were within QC limits.

#### X. Field Duplicates

Samples PG-SMA2-3-PEMD-151110-A and PG-SMA2-3-PEMD-151110-B and samples PG-SMA2-3-PEMD-151110-ADL and PG-SMA2-3-PEMD-151110-BDL were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

	Concentra		
Compound	PG-SMA2-3-PEMD-151110-A PG-SMA2-3-PEMD-151110-B		RPD
Naphthalene	10.8	9.72	11
2-Methylnaphthalene	5.79	7.41	25
Acenaphthylene	1.29	1.75	30
Acenaphthene	13.2	67.5	135
Fluorene	19.1	63.2	107
Anthracene	24.3	34.2	34
Benzo(a)anthracene	32.4	15.8	69
Chrysene	28.6	14.1	68
Benzo(b)fluoranthene	9.23	3.87	82
Benzo(k)fluoranthene	4.10	1.52	92
Benzo(a)pyrene	7.07	1.86	117
Indeno(1,2,3-cd)pyrene	1.35	1.12U	200
Benzo(g,h,i)perylene	1.48	1.12U	200
Perylene	1.75	1.12U	200
Benzo(e)pyrene	5.71	2.43	81
Total Benzofluoranthense	17.8	7.15	85

	Concentra		
Compound	PG-SMA2-3-PEMD-151110-ADL PG-SMA2-3-PEMD-151110-BDL		RPD
Phenanthrene	204	364	56
Fluoranthene	353	332	6

	Concentra		
Compound	PG-SMA2-3-PEMD-151110-ADL	PG-SMA2-3-PEMD-151110-B	RPD
Pyrene	198	110	57

#### XI. Internal Standards

All internal standard areas and retention times were within QC limits.

#### XII. Compound Quantitation

All compound quantitations were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
PG-SMA2-4-PEMD-151109-A PG-SMA2-3-PEMD-151110-B PG-SMA2-2-PEMD-151110-A	Phenanthrene Fluoranthene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A
PG-SMA2-3-PEMD-151110-A	Phenanthrene Fluoranthene Pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects) J (all detects)	А
PG-SMA2-1-PEMD-151110-A	Fluoranthene Pyrene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A

Raw data were not reviewed for Level III validation.

#### XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

#### XIV. System Performance

Raw data were not reviewed for Level III validation.

#### XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed unusable as follows:

Sample	Compound	Flag	A or P
PG-SMA2-4-PEMD-151109-A PG-SMA2-3-PEMD-151110-B PG-SMA2-2-PEMD-151110-A	Phenanthrene Fluoranthene	R	A
PG-SMA2-4-PEMD-151109-ADL PG-SMA2-3-PEMD-151110-BDL PG-SMA2-2-PEMD-151110-ADL	All TCL compounds except Phenanthrene Fluoranthene	R	A
PG-SMA2-3-PEMD-151110-A	Phenanthrene Fluoranthene Pyrene	R	A
PG-SMA2-3-PEMD-151110-ADL	All TCL compounds except Phenanthrene Fluoranthene Pyrene	R	A
PG-SMA2-1-PEMD-151110-A	Fluoranthene Pyrene	R	A
PG-SMA2-1-PEMD-151110-ADL	All TCL compounds except Fluoranthene Pyrene	R	A

Due to LCS/LCSD %R, data were qualified as estimated in sixteen samples.

Due to laboratory blank contamination, data were qualified as not detected in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

### Port Gamble Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG AQJ9

Sample	Compound	Flag	A or P	Reason
PG-GP-1-PEMD-151109-A PG-PJ-1-PEMD-151109-A PG-WS-1-PEMD-151109-A PG-SMA2-5-PEMD-151109-A PG-SMA2-4-PEMD-151109-A PG-SMA2-3-PEMD-151110-A PG-SMA2-3-PEMD-151110-A PG-SMA2-3-PEMD-151110-A PG-SMA2-3-PEMD-151110-A PG-SMA2-2-PEMD-151110-A PG-SMA2-2-PEMD-151110-A PG-SMA2-1-PEMD-151110-A PG-SMA2-1-PEMD-151110-A PG-FB-PEMD-151110 PG-TB-PEMD-151110	Naphthalene 2-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene Perylene Benzo(e)pyrene Total Benzofluoranthenes	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)
PG-SMA2-4-PEMD-151109-A PG-SMA2-3-PEMD-151110-B PG-SMA2-2-PEMD-151110-A	Phenanthrene Fluoranthene	R	A	Overall assessment of data
PG-SMA2-4-PEMD-151109-ADL PG-SMA2-3-PEMD-151110-BDL PG-SMA2-2-PEMD-151110-ADL	All TCL compounds except Phenanthrene Fluoranthene	R	Α	Overall assessment of data
PG-SMA2-3-PEMD-151110-A	Phenanthrene Fluoranthene Pyrene	R	A	Overall assessment of data
PG-SMA2-3-PEMD-151110-ADL	All TCL compounds except Phenanthrene Fluoranthene Pyrene	R	A	Overall assessment of data
PG-SMA2-1-PEMD-151110-A	Fluoranthene Pyrene	R	Α	Overall assessment of data
PG-SMA2-1-PEMD-151110-ADL	All TCL compounds except Fluoranthene Pyrene	R	A	Overall assessment of data

### Port Gamble Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG AQJ9

Sample	Compound	Modified Final Concentration	A or P
PG-SMA2-4-PEMD-151109-ADL (10X)	Naphthalene	22.6U ug/Kg	A
PG-SMA2-3-PEMD-151110-ADL (10X)	Naphthalene	14.3U ug/Kg	A
PG-SMA2-3-PEMD-151110-BDL (10X)	Naphthalene	13.3U ug/Kg	А
PG-SMA2-1-PEMD-151110-ADL (10X)	Naphthalene	18.5U ug/Kg	A
PG-SMA2-2-PEMD-151110-A	Naphthalene	5.47U ug/Kg	A
# VALIDATION COMPLETENESS WORKSHEET

Stage 2B

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Laboratory: Analytical Resources, Inc.

LDC #: 35625A2b

SDG #: AQJ9

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
١.	Sample receipt/Technical holding times	ΔιΆ	
11.	GC/MS Instrument performance check	Α	
111.	Initial calibration/ICV	A,A	% RSD = 20 jcr = 30
IV.	Continuing calibration	Su	Cor = 20
V.	Laboratory Blanks	sw	
VI.	Field blanks	يىنى	FB = 15 $TB = 16$
VII.	Surrogate spikes	لىسى	
VIII.	Matrix spike/Matrix spike duplicates	N	05
IX.	Laboratory control samples	SW	ics 10
Х.	Field duplicates	SIN	$D = 7,9$ $\times,10$
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	sW	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Su	

Note:	A = Acceptable       ND = No compounds detected         N = Not provided/applicable       R = Rinsate         SW = See worksheet       FB = Field blank         PE MD = Polyethylene       M	D = Duplicate TB = Trip blank EB = Equipment blank Cmbrane Devic	SB=Source bl OTHER:	ank
	Client ID	Lab ID	Matrix	Date
1	PG-GP-1-PEMD-151109-A	AQJ9A	Tissue PEMD	11/09/15
2	PG-PJ-1-PEMD-151109-A	AQJ9C	Tissue	11/09/15
3	PG-WS-1-PEMD-151109-A	AQJ9E	Tissue	11/09/15
4	PG-SMA2-5-PEMD-151109-A	AQJ9G	Tissue	11/09/15
5	PG-SMA2-4-PEMD-151109-A	AQJ9I	Tissue	11/09/15
6	PG-SMA2-4-PEMD-151109-ADL	AQJ9IDL	Tissue	11/09/15
7	PG-SMA2-3-PEMD-151110-A D	AQJ9K	Tissue	11/10/15
8	PG-SMA2-3-PEMD-151110-ADL	AQJ9KDL	Tissue	11/10/15
9	РG-SMA2-3-РЕМD-151110-В D	AQJ9L	Tissue	11/10/15
10	PG-SMA2-3-PEMD-151110-BDL D,	AQJ9LDL	Tissue	11/10/15
11	PG-SMA2-2-PEMD-151110-A	AQJ9M	Tissue	11/10/15
12	PG-SMA2-2-PEMD-151110-ADL	AQJ9MDL	Tissue	11/10/15
13	PG-SMA2-1-PEMD-151110-A	AQJ9O	Tieste	11/10/15

VALIDATION COMPLETENESS WORKSHEET

Stage 2B

LDC #: <u>35625A2b</u> VALIE SDG #: <u>AQJ9</u> Laboratory: <u>Analytical Resources, Inc.</u>

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METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

	Client ID	Lab ID	Matrix	Date
14	PG-SMA2-1-PEMD-151110-ADL	AQJ9ODL	TISSUE PEMD	11/10/15
15	PG-FB-PEMD-151110	AQJ9Q	Tissue	11/10/15
16	PG-TB-PEMD-151110	AQJ9R	Tissue	11/10/15
17				
18				
19				
20				
21				
Note	S:			

MB - 11815			
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## VALIDATION FINDINGS WORKSHEET

## METHOD: GC/MS SVOA

WIE THOD. GC/WIS SVOA				
A. Phenol	AA. 2-Chioronaphthalene	AAA. Butylbenzylphthalate	AAAA. Dibenzothiophene	A1.
B. Bis (2-chloroethyl) ether	BB. 2-Nitroaniline	BBB. 3,3'-Dichlorobenzidine	BBBB. Benzo(a)fluoranthene	B1.
C. 2-Chlorophenol	CC. Dimethylphthalate	CCC. Benzo(a)anthracene	CCCC. Benzo(b)fluorene	C1.
D. 1,3-Dichlorobenzene	DD. Acenaphthylene	DDD. Chrysene	DDDD. cis/trans-Decalin	D1.
E. 1,4-Dichlorobenzene	EE. 2,6-Dinitrotoluene	EEE. Bis(2-ethylhexyl)phthalate	EEEE. Biphenyl	E1.
F. 1,2-Dichlorobenzene	FF. 3-Nitroaniline	FFF. Di-n-octylphthalate	FFFF. Retene	F1.
G. 2-Methylphenol	GG. Acenaphthene	GGG. Benzo(b)fluoranthene	GGGG. C30-Hopane	G1.
H. 2,2'-Oxybis(1-chloropropane)	HH. 2,4-Dinitrophenol	HHH. Benzo(k)fluoranthene	HHHH. 1-Methylphenanthrene	Н1.
I. 4-Methylphenol	II. 4-Nitrophenol	III. Benzo(a)pyrene	IIII. 1,4-Dioxane	11.
J. N-Nitroso-di-n-propylamine	JJ. Dibenzofuran	JJJ. Indeno(1,2,3-cd)pyrene	JJJJ. Acetophenone	J1.
K. Hexachloroethane	KK. 2,4-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	KKKK. Atrazine	к1.
L. Nitrobenzene	LL. Diethylphthalate	LLL. Benzo(g,h,i)perylene	LLLL. Benzaldehyde	L1.
M. Isophorone	MM. 4-Chlorophenyl-phenyl ether	MMM. Bis(2-Chloroisopropyl)ether	MMMM. Caprolactam	M1.
N. 2-Nitrophenol	NN. Fluorene	NNN. Aniline	NNNN. 2,6-Dichlorophenol	N1.
O. 2,4-Dimethylphenol	OO. 4-Nitroaniline	OOO. N-Nitrosodimethylamine	OOOO. 2,6-Dinitrotoluene	01.
P. Bis(2-chloroethoxy)methane	PP. 4,6-Dinitro-2-methylphenol	PPP. Benzoic Acid	PPPP. 3-Methylphenol	P1.
Q. 2,4-Dichlorophenol	QQ. N-Nitrosodiphenytamine	QQQ. Benzyl alcohol	QQQQ. 3&4 Methylphenol	Q1.
R. 1,2,4-Trichlorobenzene	RR. 4-Bromophenyl-phenylether	RRR. Pyridine	RRRR. 4-Dimethyldibenzothiphene (4MDT)	R1.
S. Naphthalene	SS. Hexachlorobenzene	SSS. Benzidine	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	S1.
T. 4-Chloroaniline	TT. Pentachlorophenol	TTT. 1-Methylnaphthalene	TTTT. 1-Methyldibenzothiophene (1MDT)	т1.
U. Hexachlorobutadiene	UU. Phenanthrene	UUU.Benzo(b)thiophene	UUUU. Total Benzochubranthen	U1.
V. 4-Chloro-3-methylphenol	VV. Anthracene	VVV.Benzonaphthothiophene	vvv.	V1.
W. 2-Methylnaphthalene	WW. Carbazole	WWW.Benzo(e)pyrene	www.	W1.
X. Hexachlorocyclopentadiene	XX. Di-n-butylphthalate	XXX. 2,6-Dimethylnaphthalene	XXXX.	X1.
Y. 2,4,6-Trichlorophenol	YY. Fluoranthene	YYY. 2,3,5-Trimethylnaphthalene	YYYY.	Y1.
Z. 2,4,5-Trichlorophenol	ZZ. Pyrene	ZZZ. Perylene	ZZZZ.	Z1.

LDC #: 35625 A2b

#### VALIDATION FINDINGS WORKSHEET **Continuing Calibration**

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Reviewer: FT	
2nd Reviewer: 9	

#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".  $\frac{N}{N}$  N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?  $\frac{N}{N}$  Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?  $\frac{Y(N)N/A}{N}$  Were all %D and RRFs within the validation criteria of  $\leq 20$  %D and  $\geq 0.05$  RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: <u>&lt;</u> 20.0%)	Finding RRF (Limit: <u>&gt;</u> 0.05)	Associated Samples	Qualifications
-	12/14/15	ccv	٢٢٢	26.0		6,8,10,12,14	1/41/A (ND)
Ŧ	0909		KKK	24.7			apare (12)
-			LLL	37.1			<u> </u>
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#### VALIDATION FINDINGS WORKSHEET Blanks

Page:_	<u>/of</u>	]
Reviewer:	FT	_
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METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

<u>MNN/A</u> Was a method blank analyzed for each matrix?

YWN/A Was a method blank analyzed for each concentration preparation level?

Y N N/A Was a method blank associated with every sample?

V/N N/A Was the blank contaminated? If yes, please see gualification below.

Blank extraction date: 11/18/PBlank analysis date: 12/5/15

Conc. units: ng kg

Associated Samples:

A II

Compound	Blank ID				. <u></u>			
	MB-111815	5×	6 (10x)	8 (IOX)	10 (10X)	1+(10x)		
S	1.33	6.65	22.6/4	14.3/U	13.3 N	18.5/4	5.47 U	
						/	-	
· · ·								

Blank extraction date:_____ Blank analysis date:____

Conc. units:

Associated Samples:

Compound	Blank ID		 	 	
		l	 <u> </u>		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as the phthalates and TICs noted above that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

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# VALIDATION FINDINGS WORKSHEET **Field Blanks**

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METHOD: GC/MS PAH (EPA SW 846 Method 8270D SIM)



Were field blanks identified in this SDG? Were target compounds detected in the field blanks?

15 (FB) Field Blank / Rinsate Blank/ Rinsate (circle one) Sample: ____

Compound	Concentration / Kg
5	4).9
W	<i>5</i> 8.7
DD	1.61
66	48.4
PN	23.6
ич	32.1
VV.	1.71
77	12.6
77	7.47

Sample: 16 (TB) Field Blank / Trip Blank / Rinsate (circle one)

Compound	Concentration, Units ( 4 g ) K 9
S	19.9
N N	7.28
60	1.2.4
NN	1.48
ИИ	3.44
NV	2.40
77	4.17
	5.21

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Y N NA

#### VALIDATION FINDINGS WORKSHEET Surrogate Recovery

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METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

 $\frac{Y(N/N/A}{Y(N/N/A)}$  Were percent recoveries (%R) for surrogates within QC limits? If 2 or more base neutral or acid surrogates were outside QC limit

If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?

If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Sample ID	Surrogate	%R (Limits)		Qualifications
	<u>ц</u>	*	8.0	(30-160)	no mual
				( )	(10utl og 355)
				( )	
				( )	
				( )	
				()	
		* 2- methyln	aphthalene	- d10 )	
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(NBZ) = Nitrobenzene - d5 (FBP) = 2-Fluorobiphenyl (2FP) = 2-Fluorophenol (TBP) = 2,4,6 -Tribromophenol (2CP) = 2-Chlorophenol - d4

(TPH) = Terphenyl - d14

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#### VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

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#### METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

, Hease see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". Was a LCS required?

YN N/A ÍN N/A

Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	ves/p-	S	47.8 ( 50-150	36.2 (50-154)	( )	AU	JINS P IND+Pet)
	111815	W	44.5 ( )	37.1 ( )	( )		
		<b>DD</b>	45.1 ( )	35.0 ( )	()		
		66	44.5 (V)	33.8 ()	( )		
	- · · · · · · · · · · · · · · · · · · ·	NN	()	40.4 ( )	()		
	······································	UU	()	49.6 ( )	()		
		<u> </u>	()	41.2 ( )	()_		
		<u> </u>	( )	49.6 ( )	()		
		Lec_	()	48.7 ( )			
		DOD	()	44.5 ( )	()		
		666	()	47.2 ( )	()		
		HHH	()	43.9 ()	()		
		III	47.5 ( 1)	391.8 ( )	()		
		177	( )	46.U ( )	( )		
		KKK	( )	47.2 ( )	()		
		LLL	( )	44.8 ( )	()		
		222	24.1 ()	23,5 ()	( )	•	
		NWW	48. ( )	40.9 ( )/)	()		
	Total Benzoth	branthene	()	439()	()	V	
			()	· ( )	()		
			()	()	( )		
			()	()	()		
			()	()	( **** )		
			()	()	()		
		<u> </u>	()	( )	<u> </u>		

LDC#: 35625AZb

#### VALIDATION FINDINGS WORKSHEET Field Duplicates

Page: Reviewer: FT 2nd Reviewer: C

# METHOD: GCMS PAH (EPA SW 846 Method 8270D-SIM)

	Concentration (ug/Kg)		
Compound	7	9	RPD
S	10,8	9.72	11
w	5.79	7.41	25
DD	1.29	1.75	30
GG	13.2	67.5	135
NN	19.1	63,2	107
W	24.3	34.2	34
ccc	32.4	15.8	69
DDD	28.6	14.1	68
GGG	9.23	3.87	82
ннн	4.10	1.52	92
III ·	7.07	1.86	117
111	1.35	1.12U	200
LLL	1.48	1.12U	200
ZZZ	1.75	1.12U	200
www	5.71	2.43	81
0000	17.8	7.15	85

	Concentration (ug/Kg)		
Compound	8	10	RPD
υU	204	364	56
YY	353	332	6

	Concentration (ug/Kg)		
Compound	8	9	RPD
ZZ	198	110	57

V:\FIELD DUPLICATES\35625A2b.wpd

LDC #_ 35625 A2b

## VALIDATION FINDINGS WORKSHEET Compound Quantitation and CRQLs

Page:	_/_of/
Reviewer:	FT
2nd Reviewer:	9

#### METHOD: GC/MS SVOA (EPA SW 846 Method 8270D)

Please, see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

<u>Y N N/A</u> Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Sample ID	Compound	Finding	Qualifications
	5,9,11	UU, YY	Xilcal Range	dut /A
			J	
	7	UU, YY, ZZ		$\checkmark$
			•	
	13	YY, 72		
		-		
			·	
			· · · · · · · · · · · · · · · · · · ·	
		· · · · · · · · · · · · · · · · · · ·		

Comments: See sample calculation verification worksheet for recalculations

•

COMQUA.wpd

LDC #_ 35625 A2b

#### VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

Page: _	
Reviewer:	FT
2nd Reviewer:	_01
2nd Reviewer:	_01

#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

(Y) N N/A

<u>A</u> Was the overall quality and usability of the data acceptable?

#	Sample ID	Compound	Finding	Qualifications
	5,9,11	ии, УУ	x'd cal Range	R/A
	6,10,12	all except UU, YY	diluted	P/A
[	7	UU, YY, ZZ	X'd cal Range	P/A
		· •	0	
	8	all except UU, YY, ZZ	diluted	P/A
L				
	13	YY, 22	x'd cal Range	PA
	<u> </u>	all except YY, ZZ	diluted	R/A
	) <del> </del>			
		· · · · · · · · · · · · · · · · · · ·		
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Comments: ______

OVR.wpd

LDC #: 75625

# EDD POPULATION COMPLETENESS WORKSHEET

Anchor

Date: <u>/AN /9</u> //6 Page: <u>1 of 1</u> 2nd Reviewer: <u>4</u>

The LDC job number listed above was entered by _____.

	EDD Process	Y/N	Init	Comments/Action
I.	EDD Completeness	-		
la.	- All methods present?		Ŵ	
lb.	- All samples present/match report?	1	Ŵ	
lc.	- All reported analytes present?	1	W	
ld	-10% verification of EDD?		W	
<u> </u>	EDD Preparation/Entry	-		
lla.	- QC Level applied? (EPAStage2B or EPAStage4)	/	()	
IIb.	- Laboratory EMPC qualified results qualified (J with reason code 23)?	NA	$\mathcal{C}$	
111.	Reasonableness Checks	-		
Illa.	- Do all qualified ND results have ND qualifier (i.e. UJ)?	/	Ŵ	
lilb.	- Do all qualified detect results have detect qualifier (i.e. J)?	1	Ü	
liic.	<ul> <li>If reason codes used, do all qualified results have reason code field populated, and vice versa?</li> </ul>	1	( ³ ( ³ )	
IIId.	- Do blank concentrations in report match EDD, where data was qualified due to blank?	NA	Ø	
IIIe.	<ul> <li>Were any results reported above calibration range? If so, were results qualified appropriately?</li> </ul>	NIA	Q	
lilf.	- Are all results marked reportable "Yes" unless rejected for overall assessment in the data validation report?	/	Q	
IIIg.	-Are there any lab "R" qualified data? / Are the entry columns blank for these results?	NIF	UV	· · · · · · · · · · · · · · · · · · ·
IIIh.	- Is the detect flag set to "N" for all "U" qualified blank results?	N#	0	

## Notes: *see readme

<u>File</u>	Format	Description	
1) Readme_PortGamble_011916.doc	MS Word 2003	A "Readme" file (this document).	
2) LDC35625_AQJ9_VEDD_20160107.xls	MS Excel 2007	A spreadsheet for the following SDG(s AQJ9 3562:	;): 5A

No discrepancies were observed between the hardcopy data packages and the electronic data deliverables during EDD population of validation qualifiers. A 100% verification of the EDD was not performed.

Please contact Christina Rink at (760) 827-1100 if you have any questions regarding this electronic data submittal.



Anchor Environmental, LLC 720 Olive Way, Suite 1900 Seattle, WA 98101 ATTN: Ms. Cindy Fields February 19, 2016

SUBJECT: Port Gamble, Shellfish Monitoring, Data Validation

Dear Ms. Fields,

Enclosed is the final validation report for the fractions listed below. This SDG was received on February 1, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

## LDC Project #35818:

## SDG # Fraction

AUA2 Polynuclear Aromatic Hydrocarbons, Lipids

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project, May 2015
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink Project Manager/Chemist

	HC		<u> </u>											Att	achr	nent	t 1																				_
	EDD Stag	je 2B	LDC #	358	318	(Ai	nch	or	En	virc	nn	ien	tal	Se	attl	e V	VA I	/ Po	ort	Ga	mb	le,	Sh	ellf	ish	Мо	nit	ori	ng)								
LDC	SDG#	DATE REC'D	(3) DATE DUE	PA (827 SI	(Hs 70D- M)	۶ Lip (Bt	% ids ≩D)																														
Matri	x: Water/Tissue			W	Т	w	Т	w	s	w	s	w	S	w	s	w	s_	w	s	w	s	w	s	w	s	w	s	w	s	w	s	w	s	w	s	<u>w </u> :	s
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Total	A/CR			0	4	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7

# Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:	Port Gamble, Shellfish Monitoring
LDC Report Date:	February 10, 2016
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	Analytical Resources, Inc.

Sample Delivery Group (SDG): AUA2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
13EB_ME-MTW01Z	AUA2A	Tissue	01/07/13
13EB_ME-MTW01ZDL	AUA2A	Tissue	01/07/13
13CPS_DB-MTW01Z	AUA2B	Tissue	01/10/13
13NPS_CIAR2-MTW01Z	AUA2C	Tissue	01/14/13

#### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

# I. Sample Receipt and Technical Holding Times

The chain-of-custodies were not provided and therefore were not reviewed. Per client, samples were stored frozen prior to receipt at the laboratory and shipped for overnight delivery.

All technical holding time requirements were met.

# II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

# III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
01/22/16	Benzo(k)fluoranthene	20.8	13EB_ME-MTW01Z 13CPS_DB-MTW01Z 13NPS_CIAR2-MTW01Z	Benzo(k)fluoranthene Total Benzofluoroanthenes	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

# V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

# VI. Field Blanks

No field blanks were identified in this SDG.

# VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

# VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

# IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
LCS-011416	Acenaphthylene	49.2 (50-150)	All samples in SDG AUA2	J (all detects) UJ (all non-detects)	Р

# X. Field Duplicates

No field duplicates were identified in this SDG.

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

# XII. Compound Quantitation

All compound quantitations met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
13EB_ME-MTW01Z	Fluoranthene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed for Stage 2B validation.

# XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

# XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

# XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed unusable as follows:

Sample	Compound	Flag	A or P
13EB_ME-MTW01Z	Fluoranthene	R	A
13EB_ME-MTW01ZDL	All TCL compounds except Fluoranthene	R	A

Due to continuing calibration %D and LCS %R, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

# Port Gamble, Shellfish Monitoring Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG AUA2

Sample	Compound	Flag	A or P	Reason
13EB_ME-MTW01Z 13CPS_DB-MTW01Z 13NPS_CIAR2-MTW01Z	Benzo(k)fluoranthene Total Benzofluoroanthenes	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
13EB_ME-MTW01Z 13CPS_DB-MTW01Z 13NPS_CIAR2-MTW01Z	Acenaphthylene	J (all detects) UJ (all non-detects)	Ρ	Laboratory control samples (%R)
13EB_ME-MTW01Z	Fluoranthene	R	A	Overall assessment of data
13EB_ME-MTW01ZDL	All TCL compounds except Fluoranthene	R	A	Overall assessment of data

# Port Gamble, Shellfish Monitoring

Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG AUA2

No Sample Data Qualified in this SDG

## VALIDATION COMPLETENESS WORKSHEET

Stage 2B

	Date:	2/10/16
	Page:	<u>/of_/</u>
	Reviewer:	<u>P</u>
2nd	Reviewer:	$\Delta$

Laboratory: Analytical Resources, Inc.

LDC #: <u>35818A2b</u> SDG #: AUA2

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area			Comme	nts	
Ι.	Sample receipt/Technical holding times	SWIA				
11.	GC/MS Instrument performance check	A				
111.	Initial calibration/ICV	A/A	% psp	± 20	101 23	IJ
IV.	Continuing calibration	Ju			CCV <u>2</u> 2	υ
<u>v.</u>	Laboratory Blanks	Δ				
VI.	Field blanks	N				
VII.	Surrogate spikes	A				
VIII	Matrix spike/Matrix spike duplicates	2	65			
IX.	Laboratory control samples	SW	K>			
Х.	Field duplicates	N				
XI.	Internal standards	A				
XII.	Compound quantitation RL/LOQ/LODs	SW				
XIII.	Target compound identification	N				
XIV.	System performance	N				
XV.	Overall assessment of data	A				
Note:	A = AcceptableND =N = Not provided/applicableR = FSW = See worksheetFB =	No compounds Rinsate Field blank	detected	D = Duplicate TB = Trip blank EB = Equipment blank	SB=Source b OTHER:	lank
	Client ID			Lab ID	Matrix	Date
1	13EB_ME-MTW01Z			AUA2A	Tissue	01/07/13
2	13EB_ME-MTW01ZDL			AUA2A	Tissue	01/07/13
3	13CPS_DB-MTW01Z			AUA2B	Tissue	01/10/13
4	13NPS CIAR2-MTW01Z			AUA2C	Tissue	01/14/13

Notes

NOU	10165.						
[	MB-011416						

# VALIDATION FINDINGS WORKSHEET

#### METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachiorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
I. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyi alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3 ¹ -Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	0000.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	QQQQ.

# VALIDATION FINDINGS WORKSHEET Technical Holding Times



All circled dates have exceeded the technical holding times. Y N N/A Were all cooler temperatures within validation criteria?

METHOD : GC/MA BNA SW846 METHOD 8270C							
Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
		-					
COC	was	not	provided,	there jone	not revieu	ed.	Text
Per	client	san	ples wer	e stored	Frozen		1-9-1
pho	r to	rece	ipt at AR	I anal	shipped		
for	overi	right	delivery	•			
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#### **TECHNICAL HOLDING TIME CRITERIA**

Water: Soil: Extracted within 7 days, analyzed within 40 days. Extracted within 14 days, analyzed within 40 days.

LDC #: 35818AZh

#### VALIDATION FINDINGS WORKSHEET Continuing Calibration



#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

<u>Y N N/A</u> Were all %D and RRFs within the validation criteria of  $\leq 20$  %D and  $\geq 0.05$  RRF?

#	Date	Standard ID	Compound	Finding %D (Limit: <u>&lt;</u> 20.0%)	Finding RRF (Limit: <u>&gt;</u> 0.05)	Associated Samples	Qualifications	
	1/22/16	cov	ннн	20.8		1. 3. 4, MB-011416	J/W/A (ND+Det	۲)
	6905						qual HHH++	
L	<u> </u>			ļ			Total BENZOLLIORANTHEN	neg
	<u> </u>					<u></u>		
┣	<u> </u>		· ·····					
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# VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)



#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Prease see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

<u>Y (N N/A</u>

N/A Was a LCS required?

Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	LCS-011416	DD	49.2 (50-150	()	( )	A ]]	JINJP (ND+DUT
			( )	( )	( )		
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LDC#: 35818A 26

# VALIDATION FINDINGS WORKSHEET **Compound Quantitation and CRQLs**

Page: _	
Reviewer:	FT
2nd Reviewer:	$O_1$

#### METHOD: GC/MS SVOA (EPA SW 846 Method 8270D)

Y N/N/A Y N N/A

Please/see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Sample ID	Compound	Finding	Qualifications
	1	17	x'ol cal Ronge	John /A
			J	
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Comments: See sample calculation verification worksheet for recalculations

-

# VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

Page:	_/_of
Reviewer:	<u> </u>
2nd Reviewer:	-O

#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

1	}	
/Υ	Ń	N/A

Was the overall quality and usability of the data acceptable?

#	Sample ID	Compound	Finding	Qualifications
	FX I	YY	x'd cal Range	R/A
			J	
	2	all except YY	diluted	RA
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Comments:

# Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Port Gamble, Shellfish Monitoring

LDC Report Date: February 4, 2016

Parameters: Lipids

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): AUA2

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
13EB_ME-MTW01Z	AUA2A	Tissue	01/07/13
13CPS_DB-MTW01Z	AUA2B	Tissue	01/10/13
13NPS_CIAR2-MTW01Z	AUA2C	Tissue	01/14/13

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Lipids by Bligh and Dyer Method

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

# I. Sample Receipt and Technical Holding Times

The chain-of-custodies were not provided and therefore were not reviewed. Per client, samples were stored frozen prior to receipt at the laboratory and shipped for overnight delivery.

All technical holding time requirements were met.

## **II. Initial Calibration**

All criteria for the initial calibration of each method were met.

## III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

## IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

## V. Field Blanks

No field blanks were identified in this SDG.

## VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

## VII. Duplicates

Duplicate (DUP) sample analysis was not required by the method.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) were not required by the method.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

## X. Sample Result Verification

Raw data were not reviewed for Stage 2B validation.

## XI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all other results are considered valid and usable for all purposes.

## Port Gamble, Shellfish Monitoring Lipids - Data Qualification Summary - SDG AUA2

No Sample Data Qualified in this SDG

Port Gamble, Shellfish Monitoring Lipids - Laboratory Blank Data Qualification Summary - SDG AUA2

No Sample Data Qualified in this SDG

LDC #: 35818A6	VALIDATION COMPLETENESS WORKSHEET
SDG #:AUA2	Stage 2B
Laboratory: Analytical Resource	ces, Inc.



#### METHOD: (Analyte) Lipids (Method Bligh & Dyer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
<u>I.</u>	Sample receipt/Technical holding times	AA	
11	Initial calibration	A	
111.	Calibration verification	A	
IV	Laboratory Blanks	A	
v	Field blanks	$\mathcal{N}$	
VI.	Matrix Spike/Matrix Spike Duplicates	N	notrequired
VII.	Duplicate sample analysis	N	CS
VIII.	Laboratory control samples	N	norrequired
IX.	Field duplicates	Ň	
Х.	Sample result verification	N	
XL	Overall assessment of data	A	

Note: A = Acceptable N = Not provided/applicable SW = See worksheet

**IF** 

ND = No compou le R = Rinsate FB = Field blank

o compounds detected	
isate	
eld blank	

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank OTHER:

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	Client ID	Lab ID	Matrix	Date
1	13EB_ME-MTW01Z	AUA2A	Tissue	01/07/13
2	13CPS_DB-MTW01Z	AUA2B	Tissue	01/10/13
3	13NPS_CIAR2-MTW01Z	AUA2C	Tissue	01/14/13
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9			· · · · · · · · · · · · · · · · · · ·	
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Notes: From - no CoC provided				

LDC #: 758/8

## EDD POPULATION COMPLETENESS WORKSHEET Anchor

ET	Date: 0.18.16
	Page: 1 of 1
	2 nd Reviewer:
	-81

The LDC job number listed above was entered by

	EDD Process	Y/N	Init	Comments/Action
I.	EDD Completeness	-		
la.	- All methods present?	1	Ŵ	
lb.	- All samples present/match report?		(il	
Ic.	- All reported analytes present?		Ŵ	
ld	-10% verification of EDD?		N	
.	EDD Preparation/Entry			
IIa.	- QC Level applied? (EPAStage2B or EPAStage4)		Ŵ	
IIb.	- Laboratory EMPC qualified results qualified (J with reason code 23)?	H A	Ø	
ш.	Reasonableness Checks	-		
IIIa.	- Do all qualified ND results have ND qualifier (i.e. UJ)?	1	Û	
IIIb.	- Do all qualified detect results have detect qualifier (i.e. J)?	1	M	
IIIc.	<ul> <li>If reason codes used, do all qualified results have reason code field populated, and vice versa?</li> </ul>	/		
IIId.	- Do blank concentrations in report match EDD, where data was qualified due to blank?	71 #	$\mathcal{V}$	
Ille.	<ul> <li>Were any results reported above calibration range? If so, were results qualified appropriately?</li> </ul>	na(	6	
liif.	<ul> <li>Are all results marked reportable "Yes" unless rejected for overall assessment in the data validation report?</li> </ul>	/		
illg.	-Are there any lab "R" qualified data? / Are the entry columns blank for these results?	n A	$\mathcal{D}$	
lilh.	- Is the detect flag set to "N" for all "U" qualified blank results?		R	

#### Notes: *see readme

<u>File</u>	Format	Description
1) Readme_Port Gamble_021816.doc	MS Word 2003	A "Readme" file (this document).
	MS Excel 2007	A spreadsheet for the following SDG(s):

2) LDC35818_AUA2_VEDD_20160214.xlsx

AUA2 35818A No discrepancies were observed between the hardcopy data packages and the electronic data deliverables during EDD population

of validation qualifiers. A 100% verification of the EDD was not performed.

Please contact Christina Rink at (760) 827-1100 if you have any questions regarding this electronic data submittal.


Anchor Environmental, LLC 720 Olive Way, Suite 1900 Seattle, WA 98101 ATTN: Ms. Cindy Fields February 26, 2016

## SUBJECT: Port Gamble, Shellfish Monitoring, Data Validation

Dear Ms. Fields,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on February 8, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

## LDC Project #35845:

#### SDG # Fraction

APR4, ATS0 Polynuclear Aromatic Hydrocarbons, Cadmium, AVB4/AVB5 Polychlorinated Dioxins/Dibenzofurans, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project, May 2015
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- USEPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins and Chlorinated Dibenzofurans Data Review, September 2011
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely.

Christina Rink Project Manager/Chemist

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LDC	SDG#	DATE REC'D	(3) DATE DUE	PA (827 Si	Hs 70D- M)	C (601	d 0C)	Dio) (161	cins 3B)	% Lip (B٤	íds kD)	To Sol (254	tal ids 0G)																								
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# Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:	Port Gamble, Shellfish Monitoring
LDC Report Date:	February 19, 2016
Parameters:	Polynuclear Aromatic Hydrocarbons
Validation Level:	Stage 2B
Laboratory:	Analytical Resources, Inc.

Sample Delivery Group (SDG): APR4

	Laboratory Sample		Collection
Sample Identification	Identification	Matrix	Date
PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15

#### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270D in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. GC/MS Instrument Performance Check**

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
01/22/16	Benzo(k)fluoranthene	20.8	All samples in SDG APR4	Benzo(k)fluoranthene Total Benzofluoranthenes	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

No field blanks were identified in this SDG.

#### VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

#### VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were not within QC limits. No data were qualified since there were no associated samples in this SDG. Relative percent differences (RPD) were within QC limits.

#### IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID	Compound	%R (Limits)	Associated Samples	Flag	A or P
LCS-011416	Acenaphthylene	49.2 (50-150)	All samples in SDG APR4	UJ (all non-detects)	Р

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits with the following exceptions:

SRM ID	Compound	Concentration (Limits)	Associated Samples	Flag	A or P
SRM1974C 011416	2-Methylnaphthalene Fluorene Fluoranthene Benzo(a)anthracene Chrysene Perylene	0.59 ug/Kg (0.750-2.25) 0.98 ug/Kg (1.16-1.73) 22.4 ug/Kg (22.7-68.0) 2.27 ug/Kg (2.84-8.54) 8.90 ug/Kg (9.60-28.8) 0.50U ug/Kg (0.280-0.840)	All samples in SDG APR4	J (all detects) UJ (all non-detects)	A
SRM1974C 011416	Dibenz(a,h)anthracene	0.18 ug/Kg (0.050-0.150)	All samples in SDG APR4	NA	-

## X. Field Duplicates

No field duplicates were identified in this SDG.

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

#### XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

#### XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

#### **XIV. System Performance**

Raw data were not reviewed for Stage 2B validation.

#### XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to continuing calibration %D, LCS %R, and SRM concentration, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

## Port Gamble, Shellfish Monitoring Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG APR4

Sample	Compound	Flag	A or P	Reason
PG-T0-MUS-COC-151030	Benzo(k)fluoranthene Total Benzofluoranthenes	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
PG-T0-MUS-COC-151030	Acenaphthylene	UJ (all non-detects)	Р	Laboratory control samples (%R)
PG-T0-MUS-COC-151030	2-Methylnaphthalene Fluorene Fluoranthene Benzo(a)anthracene Chrysene Perylene	J (all detects) UJ (all non-detects)	A	Standard reference material (concentration)

## Port Gamble, Shellfish Monitoring

Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG APR4

No Sample Data Qualified in this SDG

#### VALIDATION COMPLETENESS WORKSHEET

Stage 2B

Date:	<u>2/10</u> /16
Page:_	_/of/
Reviewer:	- A
2nd Reviewer:	d

Laboratory: Analytical Resources, Inc.

LDC #: 35845A2b

SDG #: APR4

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270D-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
Ι.	Sample receipt/Technical holding times	AIA	
11.	GC/MS Instrument performance check		
111.	Initial calibration/ICV	A / A	°/0 P=D ≤ 20 ICV ≤ 30
IV.	Continuing calibration	<u>sw</u>	cal = 20
<u>V</u> .	Laboratory Blanks	$\land$	
VI.	Field blanks	Ň	
VII.	Surrogate spikes	A	0/012
VIII.	Matrix spike/Matrix spike duplicates	SW	45 ATSOBMS/D (NO ASSOC Sample)
IX.	Laboratory control samples /SPM	sw/4	VLCS, SRM
<b>X</b> .	Field duplicates	N	,
XI.	Internal standards	$\Delta$	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
xv.	Overall assessment of data	4	

Note:

A = Acceptable N = Not provided/applicable SW = See worksheet ND = No compounds detected R = Rinsate FB = Field blank D = Duplicate TB = Trip blank EB = Equipment blank SB=Source blank OTHER:

	Client ID	Lab ID	Matrix	Date
1	PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15
2				
3				
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Notes	5.			

MB - 011416			

## VALIDATION FINDINGS WORKSHEET

#### METHOD: GC/MS SVOA

A. Phenol	T. 4-Chloroaniline	MM. 4-Chlorophenyl-phenyl ether	FFF. Di-n-octylphthalate	YYY. 2,3,5-Trimethylnaphthalene
B. Bis (2-chloroethyl) ether	U. Hexachlorobutadiene	NN. Fluorene	GGG. Benzo(b)fluoranthene	ZZZ. Perylene
C. 2-Chlorophenol	V. 4-Chloro-3-methylphenol	OO. 4-Nitroaniline	HHH. Benzo(k)fluoranthene	AAAA. Dibenzothiophene
D. 1,3-Dichlorobenzene	W. 2-Methylnaphthalene	PP. 4,6-Dinitro-2-methylphenol	III. Benzo(a)pyrene	BBBB. Benzo(a)fluoranthene
E. 1,4-Dichlorobenzene	X. Hexachlorocyclopentadiene	QQ. N-Nitrosodiphenylamine	JJJ. Indeno(1,2,3-cd)pyrene	CCCC. Benzo(b)fluorene
F. 1,2-Dichlorobenzene	Y. 2,4,6-Trichlorophenol	RR. 4-Bromophenyl-phenylether	KKK. Dibenz(a,h)anthracene	DDDD. cis/trans-Decalin
G. 2-Methylphenol	Z. 2,4,5-Trichlorophenol	SS. Hexachlorobenzene	LLL. Benzo(g,h,i)perylene	EEEE. Biphenyl
H. 2,2'-Oxybis(1-chloropropane)	AA. 2-Chloronaphthalene	TT. Pentachlorophenol	MMM. Bis(2-Chloroisopropyl)ether	FFFF. Retene
1. 4-Methylphenol	BB. 2-Nitroaniline	UU. Phenanthrene	NNN. Aniline	GGGG. C30-Hopane
J. N-Nitroso-di-n-propylamine	CC. Dimethylphthalate	VV. Anthracene	OOO. N-Nitrosodimethylamine	HHHH. 1-Methylphenanthrene
K. Hexachloroethane	DD. Acenaphthylene	WW. Carbazole	PPP. Benzoic Acid	IIII. 1,4-Dioxane
L. Nitrobenzene	EE. 2,6-Dinitrotoluene	XX. Di-n-butylphthalate	QQQ. Benzyl alcohol	JJJJ. Acetophenone
M. Isophorone	FF. 3-Nitroaniline	YY. Fluoranthene	RRR. Pyridine	KKKK. Atrazine
N. 2-Nitrophenol	GG. Acenaphthene	ZZ. Pyrene	SSS. Benzidine	LLLL. Benzaldehyde
O. 2,4-Dimethylphenol	HH. 2,4-Dinitrophenol	AAA. Butylbenzylphthalate	TTT. 1-Methylnaphthalene	MMMM. Caprolactam
P. Bis(2-chloroethoxy)methane	II. 4-Nitrophenol	BBB. 3,3'-Dichlorobenzidine	UUU.Benzo(b)thiophene	NNNN.
Q. 2,4-Dichlorophenol	JJ. Dibenzofuran	CCC. Benzo(a)anthracene	VVV.Benzonaphthothiophene	0000.
R. 1,2,4-Trichlorobenzene	KK. 2,4-Dinitrotoluene	DDD. Chrysene	WWW.Benzo(e)pyrene	PPPP.
S. Naphthalene	LL. Diethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	XXX. 2,6-Dimethylnaphthalene	ବ୍ୟବ୍ୟର୍ୟ

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LDC #: 35845 A2b

#### VALIDATION FINDINGS WORKSHEET **Continuing Calibration**



#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". YN N/A

Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

YN N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ? YN NA

#	Date	Standard ID	Compound	Finding %D (Limit: <u>&lt;</u> 20.0%)	Finding RRF (Limit: <u>≥</u> 0.05)	Associated Samples	Qualifications	
-	1/22/16	car	ННН	20.8			JIUJ/A (ND+Det	)
	0905						qual HHH+	/
							Total Benzollubranthan	ىمە
<u> </u>							j	
<b> </b>	<u> </u>	· · · · · · · · · · · · · · · · · · ·						
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## VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

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#### METHOD: GC/MS BNA (EPA SW 846 Method 8270D)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a LCS required?

Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)		LCSD %R (Limits)	RPD (Limits)		Associated Samples	Qualifications
			(	)	( )	( )	)		
<b>—</b>	Les - 011416	DD	49.2 (50-15	Ø	( )	(	)	All	JUJIE (ND)
			(	)	( )	(	)		
			(	)	()	(	)		· · ·
			(	)	( )	(	)		
			(	)	( )	(	)	· · · · · · · · · · · · · · · · · · ·	
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			(	)	( )	(	5		

## VALIDATION FINDINGS WORKSHEET SRM

Page: _/_of/	
Reviewer: FT	
2nd Reviewer:	

#### METHOD: GC/MS PAH (EPA SW 846 Method 8270D-SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

<u>N N/A</u> Were the SRM values within the certified values?

#	SRM ID	Compound	Reported values (ug/Kg)	Certified true Value (ug/Kg)	Criteria: ± 50% of the certified true value	Associated Samples	Qualifica	itions
	SRM 1974C	W	0.59	1.50	0.750-2.25	41	ALENIL	(Put)
	011416	NN	0.98	2-31	1.16-1.73			1
		YY	22.4	45.3	22.7 - 68.0			
		CLL	2.27	5.69	2-84 - 8.54			
		DDD	8.90	192	9.60-28.8			
	F1 -		2.9%	<u> </u>	298-892-		I PT	
		KKK K	0.18	0.100	0.050-0.150		Jut/A	(ND)
		772	0.504	0.560	0.280-0.840		J/RU/A*	(ND)
		LLL	0.89	not a tara	et analyte		text	
				in the	SRM 1974°C ist			
						* spike at RL		
				,				
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## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Port Gamble, Shellfish Monitoring

LDC Report Date: February 19, 2016

Parameters: Cadmium

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): APR4

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15
PG-T0-MUS-COC-151030MS	APR4AMS	Tissue	10/30/15
PG-T0-MUS-COC-151030DUP	APR4ADUP	Tissue	10/30/15

#### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Cadmium by Environmental Protection Agency (EPA) SW 846 Method 6010C

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

#### II. Instrument Calibration

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

#### III. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

#### IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

#### V. Field Blanks

No field blanks were identified in this SDG.

#### VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

#### VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

#### VIII. Serial Dilution

Serial dilution was not performed for this SDG.

## IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

## X. Field Duplicates

No field duplicates were identified in this SDG.

## XI. Sample Result Verification

Raw data were not reviewed for Stage 2B validation.

#### XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

## Port Gamble, Shellfish Monitoring Cadmium - Data Qualification Summary - SDG APR4

No Sample Data Qualified in this SDG

Port Gamble, Shellfish Monitoring Cadmium - Laboratory Blank Data Qualification Summary - SDG APR4

No Sample Data Qualified in this SDG

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VALIDATION	COMPL	FTENESS	WORKSHEFT

met

Stage 2B

Page: 1 of 1 Reviewer: <u>MG</u> 2nd Reviewer: <u>M</u>

Laboratory: Analytical Resources, Inc.

LDC #: 35845A4b

SDG #: APR4

Cad mium 6010C METHOD: Metals (EPA SW 846 Method 6010B/7470A/7471A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
1	Sample receint/Technical holding times	٨	
	Instrument Calibration	<u>A</u>	
	ICP Interference Check Sample (ICS) Analysis	A	
IV.	Laboratory Blanks	A	· · · · · · · · · · · · · · · · · · ·
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	MS
VII.	Duplicate sample analysis	A	DUP
VIII.	Serial Dilution	N	not performed
IX.	Laboratory control samples	A	LCS
<u>X</u> .	Field Duplicates	ン	
XI.	Sample Result Verification	N	
	Overall Assessment of Data	<u> </u>	

A = Acceptable N = Not provided/applicable SW = See worksheet

Note:

ND = No compounds detected R = Rinsate FB = Field blank

D = Duplicate				
TB = Trip blank				
EB = Equipment blank				

SB=Source blank OTHER:

	Client ID	Lab ID	Matrix	Date
1	PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15
2	PG-T0-MUS-COC-151030MS	APR4AMS	Tissue	10/30/15
3	PG-T0-MUS-COC-151030DUP	APR4ADUP	Tissue	10/30/15
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14	PBS			
Note	3:			

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6010C

#### LDC Report# 35845A6

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Port Gamble, Shellfish Monitoring

LDC Report Date: February 19, 2016

Parameters: Percent Lipids

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): APR4

	Laboratory Sample		Collection	
Sample Identification	Identification	Matrix	Date	
PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15	

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines (CLPNFG) for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Percent Lipids by Bligh and Dyer Method

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

#### II. Initial Calibration

All criteria for the initial calibration were met.

#### III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met.

#### IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Percent lipids	0.0700 mg/L	All samples in SDG APR4

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

#### V. Field Blanks

No field blanks were identified in this SDG.

#### VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

## VII. Duplicate Sample Analysis/Triplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

Triplicate (TRP) sample analysis was performed on an associated project sample. Results were within QC limits.

## VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) analyses were not required by the method.

## **IX. Field Duplicates**

No field duplicates were identified in this SDG.

#### X. Sample Result Verification

Raw data were not reviewed for Stage 2B validation.

#### XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

## Port Gamble, Shellfish Monitoring Percent Lipids - Data Qualification Summary - SDG APR4

No Sample Data Qualified in this SDG

Port Gamble, Shellfish Monitoring Percent Lipids - Laboratory Blank Data Qualification Summary - SDG APR4

No Sample Data Qualified in this SDG

LDC #: <u>35845A6</u>	VALIDATION COMPLETENESS WORKSHEET
SDG #:APR4	Stage 2B
Laboratory: Analytical Resource	ces, Inc.

Date: <u>2-16-1</u>	6
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Reviewer: MG	
2nd Reviewer: 6	

#### METHOD: (Analyte) Percent Lipids (Method Bligh & Dyer)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area	<u> </u>	Comments
1.	Sample receipt/Technical holding times	A	
I	Initial calibration	A	
111.	Calibration verification	A	
IV	Laboratory Blanks	5 W	PB only
v	Field blanks	ン	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicate sample analysis	A	Trip (SDG: ATSO)
VIII.	Laboratory control samples	N	not required
IX.	Field duplicates	2	D
X.	Sample result verification	N	
XI	Overall assessment of data	A	

Note: A = Acceptable N = Not provided/applicable SW = See worksheet

- ND = No compounds detected R = Rinsate FB = Field blank
- D = Duplicate TB = Trip blank EB = Equipment blank

SB=Source blank OTHER:

	Client ID	Lab ID	Matrix	Date
1	PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15	PBS			
Notes				

LDC #: 35845A6

## VALIDATION FINDINGS WORKSHEET

## <u>Blanks</u>

Page: 1_of [ Reviewer: <u>MG</u> 2nd Reviewer: <u></u>

#### METHOD: Inorganics, Method Bligh & Dyer

Conc. units	s: <u>mg/L</u>				Associat	ed Samples	: <u>all</u>	<u>(&gt;5x)</u>	 		
Analyte	Blank ID	Biank ID	Blank							 	
	РВ	ICB/CCB (mg/L)	Action Limit	No Qual.							
% Lipids	0.0700		0.3500								

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

# Laboratory Data Consultants, Inc. Data Validation Report

Port Gamble, Shellfish Monitoring
February 22, 2016
Polychlorinated Dioxins/Dibenzofurans
Stage 2B
Analytical Resources, Inc.

Sample Delivery Group (SDG): APR4

	Laboratory Sample		Collection
Sample Identification	Identification	Matrix	Date
PG-T0-MUS-COC-151030	APR4A	Tissue	10/30/15

### Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Shellfish Monitoring Plan for Port Gamble Bay Cleanup Project (May 2015) and the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review (September 2011). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Dioxins/Dibenzofurans by Environmental Protection Agency (EPA) Method 1613B

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered not detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required frequency.

Retention time windows were established for all homologues. The chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomer was less than or equal to 25%.

The static resolving power was at least 10,000 (10% valley definition).

## III. Initial Calibration and Initial Calibration Verification

A five point initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 35.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were within the QC limits for unlabeled compounds and labeled compounds with the following exceptions:

Date	Compound	Concentration (Limits)	Associated Samples	Affected Compound	Flag	A or P
10/15/15	1,2,3,4,7,8-HxCDF	59.905 pg (45-56)	All samples in SDG APR4	1,2,3,4,7,8-HxCDF Total HxCDF	NA	-

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration results were within the QC limits for unlabeled compounds and labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within method and validation criteria.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Extraction Date	Compound	Concentration	Associated Samples
MB-012516	01/25/16	1,2,3,7,8-PeCDF 1,2,3,4,6,7,8-HpCDF 1,2,3,4,6,7,8-HpCDD OCDF OCDD Total PeCDD Total HxCDD Total HxCDD Total PeCDF Total HpCDF	0.0500 pg/g 0.142 pg/g 0.374 pg/g 0.541 pg/g 6.16 pg/g 0.0378 pg/g 0.124 pg/g 0.743 pg/g 0.743 pg/g 0.0500 pg/g 0.286 pg/g	All samples in SDG APR4

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
PG-T0-MUS-COC-151030	1,2,3,7,8-PeCDF	0.0518 pg/g	0.0518U pg/g
	1,2,3,4,6,7,8-HpCDF	0.189 pg/g	0.189U pg/g
	1,2,3,4,6,7,8-HpCDD	0.775 pg/g	0.775U pg/g
	OCDF	0.502 pg/g	0.502U pg/g
	OCDD	7.46 pg/g	7.46U pg/g
	Total PeCDD	0.0474 pg/g	0.0474J pg/g
	Total HxCDD	0.249 pg/g	0.249J pg/g
	Total HpCDD	3.03 pg/g	3.03J pg/g
	Total HpCDF	0.446 pg/g	0.446J pg/g

## VI. Field Blanks

No field blanks were identified in this SDG.

## VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## VIII. Ongoing Precision Recovery

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (%R) were within QC limits.