

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	001	001	FGSP	1540
SP #	1533	1772	LGSP	1772

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	181			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/03/12	02/03/12
Time UTC	03:27	05:12
Volume (cu in.)	1650in3	6600in3
Wind (kts)	15	20
Sea State (m)	1-2m	1-2m
Water Depth (m)	3933m	3888.6m

General / Line Comments
SOL SP 1533
EOL SP 1772
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204MCST01
Sequence	001
Direction	35

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	002	006	FGSP	988
SP #	988	5500	LGSP	5500

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	181			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/03/12	02/04/12
Time UTC	5:35	11:29
Volume (cu in.)	6600in3	6380in3
Wind (kts)	22	24
Sea State (m)	1-2m	2-3m
Water Depth (m)	3926m	2942m

General / Line Comments
SOL SP 988
EOL SP 5500
SOL NOISY CHANNELS
intermitant swell noise
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204MCS001
Sequence	002
Direction	358.9

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
05:45	31	1019	002	S3G09 Delta Timing Error 8.0ms
05:46	32	1020	002	S3G09 Delta Timing Error -5.8ms
05:55	60	1048	002	S3G09 Delta Timing Error 8.4ms
05:55	61	1049	002	S3G09 Delta Timing Error -6.4ms
05:56	63	1051	002	S3G09 Delta Timing Error -6.1ms
05:56	65	1053	002	S3G09 Delta Timing Error -6.1ms
07:14	284	1272	002	S4G05 Delta Timing Error @ -2.1ms
09:44	695	1683	002	S2G02 No Fire Error
09:47	701	1689	002	S2G02 No Fire Error
09:47	703	1691	002	S2G02 No Fire Error
09:48	704	1692	002	S2G02 No Fire Error
09:48	705	1693	002	S2G02 No Fire Error
09:49	706	1694	002	S2G02 No Fire Error
09:49	707	1695	002	S2G02 No Fire Error
09:49	708	1696	002	S2G02 No Fire Error
09:50	709	1697	002	S2G02 No Fire Error
09:50	710	1698	002	S2G02 No Fire Error
09:51	711	1699	002	S2G02 Disabled, S2G05 Enabled, New Volume 6420in3
10:10	761	1749	002	S1G02 Delta Timing Error @ 2.2ms
10:11	762	1750	002	S1G02 Delta Timing Error @ -2.1ms
10:14	769	1757	002	S3G06 Comm Error
10:19	783	1771	002	S1G09 Comm Error
10:19	783	1771	002	S3G09 Comm Error
10:19	783	1771	002	S4G09 Comm Error
10:48	851	1839	002	S3G09 Delta Timing Error @ 2.7ms
10:48	852	1840	002	S3G09 Delta Timing Error @ -9.0ms
10:49	853	1841	002	S3G09 Delta Timing Error @ 5.0ms
11:28	948	1936	002	S3G06 Comm Error
12:01	1026	2014	002	S1G02 Delta Timing Error @ 2.4ms
12:02	1028		003	Tape Change
12:25	1081	2069	003	S1G02 Delta Timing Error @2.7ms
12:41	1119	2107	003	S1G02 Delta Timing Error @2.6ms
12:41	1120	2108	003	S1G02 Delta Timing Error @-2.2ms
13:09	1187	2175	003	S3G09 Delta Timing Error @-8.2ms
13:09	1188	2176	003	S3G09 Delta Timing Error @12.7ms
13:10	1189	2177	003	S3G09 Delta Timing Error @-3.3ms
13:54	1292	2280	003	S1G02 Delta Timing Error @ 2.8ms
14:26	1369	2357	003	S1G01 Delta Timing Error 7.6ms
14:27	1370	2358	003	S1G01 Delta Timing Error -6.0ms
15:11	1470	2462	003	S3G09 No Fire
15:16	1481	2473	003	S3G10 Comm Error
18:19	1893	2885	003	S1G02 Delta Timing Error 2.3ms
18:55	1976	2968	003	S3G06 Comm Error
19:28	2056	3047	004	Tape Change
20:11	2157	3148	004	S3G03 Disabled, Enable S3G5, New Volume 6560in3
20:11	2157	3148	004	S1G05 Delta Timing Error -6.0ms
20:11	2157	3148	004	S3G05 Delta Timing Error -6.2ms
20:12	2158	3149	004	S3G05 Delta Timing Error -7.1ms
20:12	2159	3150	004	S3G05 Delta Timing Error 5.0ms

20:56	2265	3256	004	S3G09 False No Fire
22:29	2503	3494	004	S3G02 Autofire at 136.7ms
22:44	2543	3534	004	S3G06 Comm Error
23:10	2611	3602	004	S3G06 Comm Error
23:14	2623	3614	004	S3G02 Autofire at 158.5ms
23:34	2676	3667	004	S3G09 Comm Error
23:43	2701	3692	004	S3G06 Comm Error
23:59	2745	3736	004	LSP of the day 3736 End of Day 20120203 UTC
00:00	2746	3737	004	FSP of the day 3737 Start of day 20120204 UTC
00:59	2902	3893	004	S3G09 No Fire
01:02	2910	3901	004	S3G06 Comm Error
01:02	2911	3902	004	S3G06 Comm Error
01:41	3015	4006	004	S3G08 Comm Error
02:07	3087	4075	005	Tape Change
02:10	3095	4083	005	S3G06 Comm Error
03:05	3244	4232	005	S4G05 Delta Timing Error @ -2.3ms
03:16	3272	4260	005	S3G01 Comm Error
03:16	3272	4260	005	S3G02 Comm Error
03:16	3272	4260	005	S3G03 Comm Error
03:16	3272	4260	005	S3G04 Comm Error
03:16	3272	4260	005	S3G05 Comm Error
03:16	3272	4260	005	S3G06 Comm Error
03:16	3272	4260	005	S3G07 Comm Error
03:16	3272	4260	005	S3G08 Comm Error
03:16	3272	4260	005	S3G10 Comm Error
03:16	3272	4260	005	S3G09 Comm Error
03:37	3329	4317	005	S1G02 No Fire
03:46	3354	4342	005	S1G02 No Fire
03:47	3356	4244	005	S1G02 No Fire
03:47	3357	4345	005	S1G02 No Fire (increased gain)
04:01	3392	4380	005	S3G06 Comm Error
04:11	3421	4409	005	S1G02 Delta Timing Error @ 3.0ms
04:15	3432	4420	005	S1G02 Delta Timing Error @ 2.5ms
04:17	3438	4426	005	S1G02 Delta Timing Error @ -3.3ms
04:18	3440	4428	005	S1G02 Delta Timing Error @ -3.1ms
04:19	3444	4432	005	S1G02 Delta Timing Error @ 3.1ms
04:23	3454	4442	005	S3G06 Comm Error
04:28	3467	4455	005	S1G02 No Fire
04:29	3470	4458	005	S1G02 No Fire
04:30	3471	4459	005	S1G02 No Fire
04:30	3472	4460	005	S1G02 No Fire
04:31	3473	4461	005	S1G02 No Fire
04:31	3474	4462	005	S1G02 No Fire
04:31	3475	4463	005	disabled S1G02 enabled S1G05 new volume 6380
04:31	3475	4463	005	S1G05 Delta Timing Error @ -5.3ms
04:32	3476	4464	005	S1G05 Delta Timing Error @ 2.1ms
04:45	3511	4499	005	S3G06 Comm Error
05:05	3565	4553	005	S3G06 Comm Error
06:02	3713	4701	005	S3G06 Comm Error
06:32	3793	4781	005	S3G06 Comm Error
06:35	3796	4784	005	S4G05 Delta Timing Error @ 2.3ms

07:31	3940	4928	005	S3G06 Comm Error
07:39	3960	4948	005	S3G06 Comm Error
07:45	3973	4963	005	S3G06 Comm Error
08:13	4045	5033	005	S3G04 Comm Error
08:13	4045	5033	005	S3G05 Comm Error
08:13	4045	5033	005	S3G06 Comm Error
08:13	4045	5033	005	S3G07 Comm Error
08:13	4045	5033	005	S3G08 Comm Error
08:13	4045	5033	005	S3G09 Comm Error
08:13	4045	5033	005	S3G10 Comm Error
08:35	4099	5087	005	S3G06 Comm Error
08:42	4112	5100	006	Tape Change
08:42	4116	5104	006	S4G09 Comm Error
08:47	4128	5116	006	S3G06 Comm Error
09:10	4184	5172	006	S4G09 Comm Error
09:39	4254	5242	006	S3G06 Comm Error
09:50	4281	5269	006	S2G09 Comm Error
09:52	4284	5272	006	S3G07 Comm Error
10:01	4307	5295	006	S3G06 Comm Error
10:43	4406	5394	006	S3G06 Comm Error
11:07	4461	5449	006	S3G02 Auto Fire @ 143.6ms
11:09	4466	5454	006	S3G06 Comm Error

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	007	009	FGSP	878
SP #	878	2998	LGSP	2998

Line	MGL1204MCS002
Sequence	003
Direction	216.1

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/04/12	02/05/12
Time UTC	13:01	02:13
Volume (cu in.)	6560in3	6560in3
Wind (kts)	18	17
Sea State (m)	2-3m	2-3m
Water Depth (m)	3359m	3069m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 878
EOL SP 2998
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
13:17	44	922	007	S3G06 Comm Error
13:25	65	943	007	S2G09 Comm Error
13:51	132	1010	007	S1G02 Delta Timing Error @ -2.6ms
13:51	133	1011	007	S1G02 Delta Timing Error @ 2.2ms
14:09	179	1057	007	S1G02 Delta Timing Error @ 2.3ms
14:19	208	1086	007	S1G02 Delta Timing Error @ -2.1ms
14:20	211	1089	007	S1G02 Delta Timing Error @ 2.2ms
14:41	270	1148	007	S1G02 Delta Timing Error @ 2.3ms
15:38	425	1303	007	S1G02 Delta Timing Error @ 2.1ms
16:45	612	1490	007	S3G06 Comm Error
17:09	675	1553	007	S2G09 Comm Error
17:09	675	1553	007	S2G10 Comm Error
17:37	752	1630	007	S4G05 Delta Timing Error @ 2.1ms
17:41	763	1640	007	S1G02 Delta Timing Error @ -2.5ms
19:08	1002	1879	007	S1G02 Delta Timing Error @ 2.4ms
19:17	1029	1906	007	Tape Change End of 007
19:17	1030	1907	008	Tape Change Start of 008
19:33	1073	1950	008	S3G06 Comm Error
19:56	1136	2013	008	S1G02 Delta Timing Error @ 2.4ms
19:57	1138	2015	008	S1G02 Delta Timing Error @ -2.3ms
20:29	1225	2102	008	S3G06 Comm Error
21:13	1345	2222	008	S3G08 Comm Error
21:19	1360	2237	008	S1G02 Delta Timing Error @ 2.1ms
21:27	1382	2259	008	S1G02 Delta Timing Error @ 2.3ms
21:27	1384	2261	008	S1G02 Delta Timing Error @ -3.0ms
21:28	1385	2262	008	S1G02 Delta Timing Error @ 2.2ms
21:47	1439	2316	008	S1G02 Delta Timing Error @ 2.2ms
21:53	1454	2331	008	S3G07 Comm Error
22:22	1534	2411	008	S3G02 Autofire @ 142.8ms
22:31	1558	2435	008	S1G02 Delta Timing Error @ 2.8ms
23:12	1666	2543	008	S1G02 Delta Timing Error @ 2.4ms
23:28	1706	2583	008	S1G02 Delta Timing Error @ -2.5ms
23:28	1707	2584	008	S1G02 Delta Timing Error @ 2.6ms
23:33	1719	2596	008	S1G02 Delta Timing Error @ 2.1ms
23:59	1788	2665	008	End of Day 20120204, Last Shotpoint Of The Day - 2665
0:00	1789	2666	008	Start of Day 20120205, First Shotpoint Of The Day - 2666
00:36	1879	2756	008	S1G02 Delta Timing Error @ 2.5ms
00:46	1904	2781	008	S1G02 Delta Timing Error @ -2.1ms
00:58	1935	2812	008	S1G02 Delta Timing Error @ 2.3ms
01:15	1975	2852	008	S2G09 Comm Error
01:26	2002	2879	008	S1G02 Delta Timing Error @ 3.0ms
01:27	2004	2881	008	S1G02 Delta Timing Error @ -2.2
01:47	2055	2932	008	Tape Change end of 008
01:48	2056	2933	009	Tape Change start of 009
01:53	2068	2946	009	Delta Timing Error @ 2.7ms
02:12	2117	2995	009	S3G01 No Fire Error
02:12	2118	2996	009	S3G01 No Fire Error
02:12	2119	2997	009	S3G01 No Fire Error

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
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Chief Science Officer	Robert Steinhaus		
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Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	010	013	FGSP	985
SP #	983	4122	LGSP	4000

Line	MGL1204MCS03
Sequence	004
Direction	90.1

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/05/12	02/06/12
Time UTC	04:38	01:12
Volume (cu in.)	6560in3	6560in3
Wind (kts)	NNE 24	E 30 - 35
Sea State (m)	2-3m	3-5mm
Water Depth (m)	3087m	8194m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 983
EOL SP 4122 - EEOL Due To Weather pulling the Steamer to the surface
SOL NOISY CHANNELS
Intermittant Sea Noise throughout line
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
04:38	01	983	010	S1G02 Delta Timing Error @ -2.7ms
04:38	02	984	010	S1G02 Delta Timing Error @ 3.1ms
04:43	16	998	010	S1G02 Delta Timing Error @ -3.4ms
04:44	17	999	010	S1G02 Delta Timing Error @ 2.2ms
04:49	27	1011	010	S1G02 Delta Timing Error @ -2.1ms
04:49	28	1012	010	S1G02 Delta Timing Error @ 2.8ms
04:57	48	1032	010	S1G02 Delta Timing Error @ -2.8ms
05:05	71	1055	010	S4G01 Delta Timing Error @ -8.9ms
05:06	72	1056	010	S4G01 Delta Timing Error @ -12.5ms
05:06	73	1057	010	S4G01 No Fire
05:07	75	1059	010	S4G01 Delta Timing Error @ 2.5ms
05:07	76	1060	010	S4G01 Delta Timing Error @ -3.2ms
05:09	81	1065	010	S1G02 Delta Timing Error @ -2.8ms
05:09	81	1065	010	S4G01 Delta Timing Error @ 2.3ms
05:10	84	1068	010	S4G01 No Fire
05:11	85	1069	010	S4G01 Delta Timing Error @ 12.5ms
05:11	86	1070	010	S4G01 Delta Timing Error @ -9.5ms
05:11	87	1071	010	S4G01 Delta Timing Error @ 11.5ms
05:12	88	1072	010	S4G01 Delta Timing Error @ -10.7ms
05:12	89	1073	010	S4G01 No Fire
05:12	90	1074	010	S4G01 No Fire
05:13	91	1075	010	S4G01 No Fire
05:13	91	1075	010	S1G02 Delta Timing Error @ -2.8ms
5:13	92	1076	010	S4G01 No Fire
05:14	93	1077	010	S4G01 No Fire
05:14	94	1078	010	S4G01 No Fire
05:14	95	1079	010	S3G03 Delta Timing Error @ 2.1ms
05:17	101	1085	010	S1G05 Delta Timing Error @ 4.3ms
05:17	102	1086	010	S1G05 Delta Timing Error @ -2.9ms
05:18	105	1089	010	S3G02 Delta Timing Error @ 3.0ms
05:19	106	1090	010	S3G02 Delta Timing Error @ -2.2ms
05:19	107	1091	010	S3G02 Auto Fire Error @ 136.2ms
05:27	128	1112	010	S1G02 Delta Timing Error @ -2.7ms
05:28	130	1114	010	S1G02 Delta Timing Error @ 2.4ms
05:28	131	1115	010	S1G02 Delta Timing Error @ -2.2ms
05:29	132	1116	010	S1G02 Delta Timing Error @ 3.2ms
05:31	138	1122	010	S1G02 Delta Timing Error @ -2.8ms
05:31	139	1123	010	S1G02 Delta Timing Error @ 3.1ms
05:35	149	1133	010	S1G02 Delta Timing Error @ -3.2ms
05:35	150	1134	010	S1G02 Delta Timing Error @ 3.1ms
05:40	162	1146	010	S1G02 Delta Timing Error @ -2.1ms
05:43	168	1152	010	S1G02 Delta Timing Error @ -2.2ms
05:45	173	1157	010	S1G02 Delta Timing Error @ -2.4ms
05:47	178	1162	010	S1G02 Delta Timing Error @ 2.1ms
05:47	179	1163	010	S1G02 Delta Timing Error @ -23.1ms
05:48	181	1165	010	S1G02 Delta Timing Error @ 2.9ms
05:49	184	1168	010	S3G09 Comm Error
05:50	187	1171	010	S3G06 Comm Error
05:58	208	1192	010	S1G02 Delta Timing Error @ -3.1ms
05:59	209	1193	010	S1G02 Delta Timing Error @ 2.3ms
06:08	233	1217	010	S1G02 Delta Timing Error @ -3.5ms
06:20	264	1248	010	S1G02 Delta Timing Error @ -2.4ms
06:21	266	1250	010	S1G02 Delta Timing Error @ 2.5ms
06:26	279	1263	010	S3G02 Auto Fire Error @ 163.1ms
06:27	280	1264	010	S3G02 Auto Fire Error @ 165.0ms
06:28	284	1268	010	S3G02 Auto Fire Error @ 157.8ms
06:29	286	1270	010	S1G02 Delta Timing Error @ -2.7ms

06:29	287	1271	010	S1G02 Delta Timing Error @ 3.1ms
06:29	287	1271	010	S3G02 Auto Fire Error @ 140.4ms
06:30	288	1272	010	S3G02 Auto Fire Error @ 140.4ms
06:30	289	1273	010	S1G02 Delta Timing Error @ 3.0ms
06:30	290	1274	010	S1G02 Delta Timing Error @ -2.2ms
06:32	294	1278	010	S3G02 Auto Fire Error @ 146.ms
06:33	296	1280	010	S3G02 Auto Fire Error @ 166.7ms
06:33	296	1280	010	S1G02 Delta Timing Error @ -2.6ms
06:38	309	1293	010	S1G02 Delta Timing Error @ -2.1ms
06:38	310	1294	010	S1G02 Delta Timing Error @ 3.0ms
06:39	311	1295	010	S1G02 Delta Timing Error @ -2.1ms
06:41	317	1301	010	S1G02 Delta Timing Error @ 2.1ms
06:43	323	1307	010	S1G02 Delta Timing Error @ -3.0ms
06:44	324	1308	010	S1G02 Delta Timing Error @ 2.9ms
06:47	332	1316	010	S1G02 Delta Timing Error @ -2.1ms
06:52	344	1328	010	S1G02 Delta Timing Error @ -2.2ms
06:53	346	1330	010	S1G02 Delta Timing Error @ 2.6ms
06:53	347	1331	010	S1G02 Delta Timing Error @ -2.4ms
06:54	348	1332	010	S1G02 Delta Timing Error @ 3.1ms
06:55	352	1336	010	S1G02 Delta Timing Error @ -2.8ms
06:56	353	1337	010	S1G02 Delta Timing Error @ 2.1ms
06:58	360	1344	010	S1G02 Delta Timing Error @ -2.4ms
06:59	362	1346	010	S1G02 Delta Timing Error @ 2.2ms
07:03	371	1355	010	S1G02 Delta Timing Error @ 2.1ms
07:04	373	1357	010	S3G02 Delta Timing Error @ 5.2ms
07:04	374	1358	010	S3G02 Delta Timing Error @ -3.9ms
07:04	375	1359	010	S1G02 Delta Timing Error @ 2.2ms
07:05	376	1360	010	S1G02 Delta Timing Error @ -3.6ms
07:07	383	1367	010	S1G02 Delta Timing Error @ -2.4ms
07:08	384	1368	010	S3G02 Delta Timing Error @ 4.5ms
07:08	385	1369	010	S3G02 Delta Timing Error @ -3.2ms
07:09	388	1372	010	S3G02 Delta Timing Error @ 5.1ms
07:10	389	1373	010	S3G02 Delta Timing Error @ -3.8ms
07:10	391	1375	010	S1G02 Delta Timing Error @ -3.6ms
07:11	392	1376	010	S1G02 Delta Timing Error @ 2.3ms
07:12	394	1378	010	S1G02 Delta Timing Error @ -2.9ms
07:12	396	1380	010	S3G02 Delta Timing Error @ 4.8ms
07:13	397	1381	010	S1G02 Delta Timing Error @ 2.3ms
07:13	397	1381	010	S3G02 Delta Timing Error @ -3.6ms
07:18	409	1393	010	S1G02 Delta Timing Error @ 2.1ms
07:18	411	1395	010	S1G02 Delta Timing Error @ 2.2ms
07:24	426	1410	010	S3G02 Delta Timing Error @ 3.3ms
07:24	427	1411	010	S3G02 Delta Timing Error @ -2.5ms
07:28	436	1420	010	S3G02 Delta Timing Error @ 4.8ms
07:29	437	1421	010	S3G02 Delta Timing Error @ -3.6ms
07:39	462	1446	010	S1G02 Delta Timing Error @ -3.0ms
07:39	463	1447	010	S1G02 Delta Timing Error @ 2.2ms
07:45	478	1462	010	S3G02 Delta Timing Error @ 5.0ms
07:46	479	1463	010	S3G02 Delta Timing Error @ -3.5ms
07:47	481	1465	010	S3G02 Delta Timing Error @ 2.8ms
07:47	482	1466	010	S3G02 Delta Timing Error @ -2.6ms
07:56	502	1486	010	S4G02 Delta Timing Error @ -3.2ms
07:56	504	1488	010	S1G02 Delta Timing Error @ -2.1ms
07:57	505	1489	010	S1G02 Delta Timing Error @ 2.3ms
07:58	507	1491	010	S3G02 Delta Timing Error @ 2.9ms
07:58	508	1492	010	S3G02 Delta Timing Error @ -2.2ms
07:59	510	1494	010	S4G02 Delta Timing Error @ -2.6ms
08:02	518	1502	010	S4G02 Delta Timing Error @ 2.2ms
08:05	524	1508	010	S2G09 Comm Error

08:15	549	1533	010	S1G02 Delta Timing Error @-3.5ms
08:15	550	1534	010	S1G02 Delta Timing Error @2.7ms
08:15	550	1534	010	S3G02 Delta Timing Error @3.ms
08:15	550	1534	010	S4G02 Delta Timing Error @-2.8ms
08:16	551	1535	010	S3G02 Delta Timing Error @-2.8ms
08:16	551	1535	010	S4G02 Delta Timing Error @2.3ms
08:17	554	1538	010	S1G02 Delta Timing Error @-2.2ms
08:18	557	1541	010	S3G02 Delta Timing Error @4.5ms
08:19	558	1542	010	S3G02 Delta Timing Error @-3.4ms
08:19	559	1543	010	S4G02 Delta Timing Error @-3.0ms
08:21	564	1548	010	S3G02 Delta Timing Error @2.9ms
08:24	570	1554	010	S4G02 Delta Timing Error @-2.5ms
08:28	579	1563	010	S4G02 Delta Timing Error @-2.1ms
08:28	581	1565	010	S4G02 Delta Timing Error @2.7ms
08:29	582	1566	010	S4G02 Delta Timing Error @2.1ms
08:30	584	1568	010	S1G02 Delta Timing Error @-3.6ms
08:30	585	1569	010	S1G02 Delta Timing Error @2.4ms
08:33	593	1577	010	S1G02 Delta Timing Error @-3.5ms
08:34	594	1578	010	S1G02 Delta Timing Error @2.8ms
08:37	602	1586	010	S3G02 Delta Timing Error @3.1ms
08:38	603	1587	010	S3G02 Delta Timing Error @-2.3ms
08:38	604	1588	010	S3G02 Delta Timing Error @4.8ms
08:39	605	1589	010	S3G02 Delta Timing Error @-4.2ms
08:39	606	1590	010	S1G02 Delta Timing Error @2.7ms
08:41	612	1596	010	S1G02 Delta Timing Error @-2.3ms
08:42	613	1597	010	S1G02 Delta Timing Error @2.2ms
08:42	614	1598	010	S3G02 Delta Timing Error @3.9ms
08:43	615	1599	010	S3G02 Delta Timing Error @-2.8ms
08:43	616	1600	010	S3G02 Delta Timing Error @3.1ms
08:43	617	1601	010	S3G02 Delta Timing Error @-3.1ms
08:44	618	1602	010	S1G02 Delta Timing Error @-3.3ms
08:44	619	1603	010	S1G02 Delta Timing Error @2.5ms
08:46	623	1607	010	S1G02 Delta Timing Error @-3.2ms
08:48	628	1612	010	S4G02 Delta Timing Error @-2.8ms
08:49	632	1616	010	S1G02 Delta Timing Error @-2.3ms
08:50	634	1618	010	S1G02 Delta Timing Error @3.0ms
08:50	634	1618	010	S4G02 Delta Timing Error @-2.3ms
08:52	638	1622	010	S4G02 Delta Timing Error @-2.6ms
08:53	640	1624	010	S1G02 Delta Timing Error @-3.3ms
08:54	642	1626	010	S1G02 Delta Timing Error @2.7ms
08:55	644	1628	010	S4G02 Delta Timing Error @-2.5ms
08:55	645	1629	010	S1G02 Delta Timing Error @-2.9ms
08:57	650	1634	010	S3G02 Delta Timing Error @4.2ms
08:57	650	1634	010	S4G02 Delta Timing Error @-2.2ms
08:57	651	1635	010	S3G02 Delta Timing Error @-3.1ms
09:04	668	1652	010	S4G02 Delta Timing Error @2.3ms
09:06	671	1655	010	S4G02 Delta Timing Error @-2.4ms
09:07	674	1658	010	S1G02 Delta Timing Error @-2.1ms
09:08	676	1660	010	S1G02 Delta Timing Error @2.1ms
09:08	676	1660	010	S3G02 Delta Timing Error @3.2ms
09:08	677	1661	010	S3G02 Delta Timing Error @-2.4ms
09:13	688	1672	010	S1G02 Delta Timing Error @-3.7ms
09:14	692	1676	010	S1G02 Delta Timing Error @3.6ms
09:17	699	1683	010	S3G02 Delta Timing Error @5.3ms
09:18	700	1684	010	S3G02 Delta Timing Error @-3.9ms
09:19	704	1688	010	S1G02 Delta Timing Error @-2.4ms
09:20	706	1690	010	S1G02 Delta Timing Error @2.5ms
09:21	708	1692	010	S3G02 Delta Timing Error @4.4ms
09:21	709	1693	010	S3G02 Delta Timing Error @4.9ms

09:22	710	1694	010	S3G02 Delta Timing Error @-7.0ms
09:23	712	1696	010	S3G02 Delta Timing Error @2.5ms
09:23	713	1697	010	S3G02 Delta Timing Error @-2.2ms
09:26	720	1704	010	S3G02 Delta Timing Error @4.7ms
09:26	721	1705	010	S1G02 Delta Timing Error @-2.7ms
09:26	721	1705	010	S3G02 Delta Timing Error @-3.4ms
09:27	723	1707	010	S1G02 Delta Timing Error @2.8ms
09:28	725	1709	010	S1G02 Delta Timing Error @-2.9ms
09:30	729	1713	010	S1G02 Delta Timing Error @-2.8ms
09:32	734	1718	010	S1G02 Delta Timing Error @-2.5ms
9:34	740	1724	010	S3G02 Delta Timing Error @3.1ms
9:35	741	1725	010	S3G02 Delta Timing Error @-2.2ms
9:36	744	1728	010	S1G01 Delta Timing Error @ 2.3ms
9:45	764	1752	010	S1G02 Delta Timing Error @2.3ms
9:47	767	1755	010	S3G03 Delta Timing Error @ 3.0ms
9:49	771	1759	010	S1G02 Delta Timing Error @ 2.1ms
9:49	772	1760	010	S3G02 Delta Timing Error @ 3.8ms
9:49	773	1761	010	S3G02 Delta Timing Error @ 7.8ms
9:50	774	1762	010	S1G02 Delta Timing Error @ -2.2ms
9:50	775	1763	010	S1G02 Delta Timing Error @ 2.6ms
9:51	777	1765	010	S1G02 Delta Timing Error @ 2.3ms
9:51	778	1766	010	S1G02 Delta Timing Error @ -2.8ms
9:52	779	1767	010	S1G02 Delta Timing Error @ 2.3ms
9:53	781	1769	010	S1G02 Delta Timing Error @ 2.2ms
9:54	785	1773	010	S1G02 Delta Timing Error @ -2.8ms
9:55	788	1776	010	S3G02 Auto Fire Error @110.3ms
9:56	790	1778	010	S3G02 Auto Fire Error @162.9ms
9:57	792	1780	010	S3G02 Auto Fire Error @314.1ms
9:58	794	1782	010	S1G02 Delta Timing Error @ -2.1ms
9:59	796	1784	010	S3G02 Auto Fire Error @139.8ms
10:00	800	1788	010	S3G02 Auto Fire Error @143.0ms
10:01	801	1789	010	S3G02 Delta Timing Error @ -2.7ms
10:03	806	1794	010	S1G02 Delta Timing Error @ -2.3ms
10:04	808	1796	010	S3G02 Auto Fire Error @141ms
10:06	815	1803	010	S3G02 Delta Timing Error @ 3.6ms
10:07	816	1804	010	S3G02 Delta Timing Error @ -2.7ms
10:10	824	1812	010	S3G02 Auto Fire Error @ 156.6ms
10:10	825	1813	010	S302 Auto Fire Error @ 308.1ms
10:12	829	1817	010	S3G02 Delta Timing Error @ 4.1ms
10:12	830	1818	010	S3G02 Auto Fire @ 144.4ms
10:13	831	1819	010	S3G02 Auto Fire @ 144.4ms
10:13	833	1821	010	S3G02 Auto Fire @ 167.2ms
10:14	835	1823	010	S3G02 Auto Fire @ 138.4ms
10:16	839	1827	010	S3G02 Auto Fire @ 175.0ms
10:18	844	1832	010	S3G02 Auto Fire @ 147.4ms
10:22	853	1841	010	S1G02 Delta Timing Error @ -2.4ms
10:22	855	1843	010	S1G02 Delta Timing Error @ 2.6ms
10:23	856	1844	010	S3G02 Auto Fire @ 149.9ms
10:23	858	1846	010	S3G02 Auto Fire @ 143.9ms
10:24	859	1847	010	S3G02 Auto Fire @ 147.0ms
10:25	861	1849	010	S3G02 Auto Fire @ 214.9ms
10:25	862	1850	010	S3G02 Auto Fire @ 167.8ms
10:26	865	1853	010	S3G02 Auto Fire @ 158.7ms
10:28	869	1857	010	S3G02 Auto Fire @ 159.5ms
10:28	870	1858	010	S3G02 Auto Fire @ 143.0ms
10:29	871	1859	010	S3G02 Auto Fire @ 143.0ms
10:30	874	1862	010	S1G02 Delta Timing Error @ -3.5ms
10:33	881	1869	010	S3G02 Auto Fire @ 141.0ms

10:33	882	1870	010	S3G02 Auto Fire @ 146.2ms
10:33	883	1871	010	S3G02 Auto Fire @ 146.2ms
10:34	884	1872	010	S3G02 Delta Timing Error @ -2.3ms
10:34	885	1873	010	S3G02 Auto Fire @ 166.1ms
10:35	888	1876	010	S3G02 Auto Fire @ 152.4ms
10:36	889	1877	010	S3G02 Auto Fire @ 152.4ms
10:36	889	1877	010	S1G02 Delta Timing Error @ -3.7ms
10:37	891	1879	010	S3G02 Auto Fire @ 143.7ms
10:39	899	1887	010	S3G02 Auto Fire @ 174.1ms
10:40	901	1889	010	S3G02 Auto Fire @ 147.7ms
10:41	902	1890	010	S3G02 Auto Fire @ 174.8ms
10:41	903	1891	010	S3G02 Auto Fire @ 174.8ms
10:41	904	1892	010	S3G02 Auto Fire @ 147.5ms
10:42	906	1894	010	S3G02 Delta Timing Error @ 3.7ms
10:43	907	1895	010	S3G02 Delta Timing Error @ -2.7ms
10:44	910	1898	010	S3G02 Delta Timing Error @ 3.0ms
10:44	911	1899	010	S3G02 Delta Timing Error @ -2.3ms
10:45	912	1900	010	S3G02 Auto Timing Error @ 175.5ms
10:45	913	1901	010	S1G02 Delta Timing Error @ -3.1ms
10:45	913	1901	010	S3G02 Auto Timing Error @ 309.2
10:45	914	1902	010	S1G02 Delta Timing Error @ 2.5ms
10:47	918	1906	010	S1G02 Delta Timing Error @ -3.1ms
10:47	918	1906	010	S3G02 Delta Timing Error @ 2.9ms
10:47	919	1907	010	S1G02 Delta Timing Error @ 2.1ms
10:47	919	1907	010	S3G02 Delta Timing Error @ -2.1ms
10:48	920	1908	010	S3G02 Delta Timing Error @ 2.9ms
10:48	921	1909	010	S3G02Auto Fire @ 142.5ms
10:48	923	1911	010	S3G02 Auto Fire @ 142.5ms
10:49	924	1912	010	S3G02 Delta Timing Erro @ -3.9ms
10:50	926	1914	010	S3G02 Auto Fire @ 167.1ms
10:51	927	1915	010	S3G02 Auto Fire @ 156.6ms
10:51	928	1916	010	S3G02 Auto Fire @ 141.8ms
10:51	929	1917	010	S3G02 Auto Fire @ 144.5ms
10:52	930	1918	010	S3G02 Auto Fire @ 145.6
10:52	931	1919	010	S3G02 Auto Fire @ 162.2ms
10:52	932	1920	010	S3G02 Auto Fire @ 143.3ms
10:53	933	1921	010	S1G02 Delta Timing Error @ 2.6ms
10:53	935	1923	010	S3G02 Auto Fire @ 156.2ms
10:54	936	1924	010	S3G02 Auto Fire @ 161.3ms
10:54	937	1925	010	S3G02 Auto Fire @ 145.7ms
10:55	938	1926	010	S3G02 Auto Fire @ 153.4 ms
10:55	939	1927	010	S3G02 Auto Fire @ 166.3ms
10:55	942	1930	010	S3G02 Auto Fire @ 180.5ms
10:57	944	1932	010	S3G02 Auto Fire @ 142.5ms
10:59	949	1937	010	S3G02 Auto Fire @ 160.5ms
11:00	951	1939	010	S1G02 Delta Timing Error @ -3.2ms
11:00	952	1940	010	S3G02 Auto Fire @ 161.6ms
11:01	953	1941	010	S3G02 Auto Fire @ 161.6ms
11:01	955	1943	010	S3G02 Auto Fire @ 174.8ms
11:02	956	1944	010	S3G02 Delta Timing Error @ 4.5ms
11:02	957	1945	010	S3G02 Auto Fire @ 154.3ms
11:03	958	1946	010	S3G02 Auto Fire @ 137.8ms
11:03	960	1948	010	S3G02 Auto Fire @ 139.9ms
11:04	961	1949	010	S3G02 Auto Fire @ 139.9ms
11:05	964	1952	010	S3G02 Auto Fire @ 159.0ms
11:06	967	1955	010	S3G02 Delta Timing Error @ 2.9ms
11:06	968	1956	010	S3G02 Delta Timing Error @ -2.2ms
11:08	973	1961	010	S3G02 Auto Fire @ 139.6ms
11:09	975	1963	010	S3G02 Auto Fire @ 156.3ms

11:10	977	1965	010	S3G02 Auto Fire @ 160.2ms
11:12	982	1970	010	S3G02 Auto Fire @ 158.1ms
11:12	984	1972	010	S3G02 Auto Fire @ 158.6ms
11:13	986	1974	010	S1G02 Delta Timing Error @ -3.5ms
11:13	987	1975	010	S1G02 Delta Timing Error @ 2.1ms
11:16	993	1981	010	S3G02 Delta Timing Error @ 4.2ms
11:16	994	1982	010	S3G02 Delta Timing Error @ -3.1ms
11:18	998	1986	010	S3G02 Auto Fire @ 156.5ms
11:18	999	1987	010	S3G02 Auto Fire @ 162.1ms
11:19	1000	1988	010	S3G02 Auto Fire @ 138.0ms
11:21	1005	1993	010	S3G02 Auto Fire @ 145.3ms
11:22	1008	1996	010	S3G02 Auto Fire @ 151.4ms
11:22	1009	1997	010	S3G02 Auto Fire @ 167.7ms
11:23	1011	1999	010	S3G02 Auto Fire @ 162.8ms
11:25	1016	2004	010	S3G02 Delta Timing Error @ 4.1ms
11:25	1017	2005	010	S3G02 Delta Timing Error @ -3.0ms
11:26	1018	2006	010	S1G02 Delta Timing Error @ -2.6ms
11:26	1018	2006	010	S3G02 Auto Fire @ 173.2ms
11:27	1022	2010	010	S1G02 Delta Timing Error @ 2.2ms
11:29	1026	2014		Tape Change to Tape 11
11:30	1029	2017	011	S3G02 Delta Timing Error @ 4.6ms
11:31	1030	2018	011	S3G02 Delta Timing Error @ -3.4ms
11:32	1033	2021	011	S3G02 Auto Fire @ 151.0ms
11:32	1034	2022	011	S3G02 Auto Fire @ 159.9ms
11:33	1035	2023	011	S3G02 Auto Fire @ 159.9ms
11:34	1038	2026	011	S1G02 Delta Timing Error @ -2.1ms
11:36	1043	2031	011	S3G02 Auto Fire @ 163.9ms
11:37	1047	2035	011	S3G02 Auto Fire @ 180.1ms
11:39	1050	2038	011	S3G02 Delta Timing Error @ 4.3ms
11:39	1051	2039	011	S3G02 Delta Timing Error @ -3.0ms
11:40	1054	2042	011	S3G02 Auto Fire @ 324.2ms
11:43	1060	2048	011	S3G02 Auto Fire @ 163.7ms
11:45	1066	2054	011	S3G02 Auto Fire @ 142.8ms
11:46	1068	2056	011	S3G02 Auto Fire @ 146.3ms
11:48	1072	2060	011	S3G02 Auto Fire @ 143.4ms
11:49	1075	2063	011	S1G02 Delta Timing Error @ 2.1ms
11:50	1077	2065	011	S3G02 Auto Fire @ 168.0MS
11:50	1078	2066	011	S1G02 Delta Timing Error @ -2.1ms
11:51	1081	2069	011	S3G02 Auto Fire @ 159.3ms
11:52	1083	2071	011	S3G02 Delta Timing Error @ 3.3ms
11:52	1084	2072	011	S3G02 Auto Fire @ 158.5ms
11:53	1085	2073	011	S3G02 Auto Fire @ 158.5ms
11:54	1088	2076	011	S3G02 Auto Fire @ 338.8ms
11:55	1090	2078	011	S3G02 Auto Fire @ 140.3ms
11:55	1091	2079	011	S3G02 Auto Fire @ 189.5ms
11:56	1093	2081	011	S3G02 Auto Fire @ 182.8ms
11:56	1094	2082	011	S3G02 Auto Fire @ 139.8ms
11:56	1095	2083	011	S3G02 Auto Fire @ 139.8ms
11:57	1098	2086	011	S3G02 Delta Timing Error @ 3.2ms
11:58	1099	2087	011	S3G02 Delta Timing Error @ -2.6ms
11:49	1102	2090	011	S3G02 Auto Fire @ 154.8ms
11:59	1103	2091	011	S1G02 Delta Timing Error @ -2.4ms
12:00	1105	2093	011	S3G02 Auto Fire @ 151.6ms
12:01	1107	2095	011	S3G02 Auto Fire @ 162.6ms
12:02	1108	2096	011	S3G02 Auto Fire @ 171.8ms
12:02	1109	2097	011	S3G02 Delta Timing Error @ -2.4ms
12:04	1113	2101	011	S3G02 Auto Fire @ 162.2ms
12:04	1114	2102	011	S3G02 Delta Timing Error @ -3.9ms
12:05	1116	2104	011	S3G02 Auto Fire @ 188.4ms

12:05	1117	2105	011	S3G02 Auto Fire @ 146.2ms
12:07	1121	2109	011	S3G02 Auto Fire @ 156.5ms
12:07	1122	2110	011	S3G02 Auto Fire @ 331.3ms
12:09	1126	2114	011	S3G04 Auto Fire @ 140.8ms
12:10	1130	2118	011	S3G02 Auto Fire @ 160.4ms
12:13	1135	2123	011	S3G02 Auto Fire @ 158.3ms
12:14	1139	2127	011	S3G02 Auto Fire @ 144.8ms
12:15	1142	2130	011	S3G02 Auto Fire @ 169.4ms
12:16	1143	2131	011	S3G02 Auto Fire @ 347.0ms
12:16	1143	2131	011	S1G02 Delta Timing Error @ -2.6ms
12:17	1146	2134	011	S3G02 Auto Fire @ 313.0ms
12:17	1146	2134	011	S3G02 Auto Fire @ 139.7ms
12:18	1148	2136	011	S3G02 Auto Fire @ 169.5ms
12:19	1151	2139	011	S3G02 Auto Fire @ 140.7ms
12:20	1153	2141	011	S3G02 Delta Timing Error @ 3.5ms
12:20	1154	2142	011	S3G02 Delta Timing Error @ -2.5ms
12:21	1155	2143	011	S3G02 Auto Fire @ 164.0ms
12:21	1156	2144	011	S3G02 Auto Fire @ 160.1ms
12:22	1157	2145	011	S3G02 Auto Fire @ 202.5ms
12:23	1161	2149	011	S3G02 Auto Fire @ 132.7ms
12:25	1167	2155	011	S3G02 Auto Fire @ 171.3ms
12:26	1168	2156	011	S3G02 Auto Fire @ 171.9ms
12:26	1169	2157	011	S3G02 Auto Fire @ 171.9ms
12:27	1170	2158	011	S3G02 Auto Fire @ 187.8ms
12:30	1179	2167	011	S3G02 Auto Fire @ 157.9ms
12:31	1180	2168	011	S3G02 Auto Fire @ 139.6ms
12:31	1182	2170	011	S3G02 Auto Fire @ 144.0ms
12:32	1184	2172	011	S3G02 Auto Fire @ 145.1ms
12:33	1186	2174	011	S3G02 Auto Fire @ 185.1ms
12:35	1191	2179	011	S3G02 Auto Fire @ 170.0ms
12:36	1194	2182	011	S3G02 Auto Fire @ 188.1ms
12:36	1194	2182	011	S1G02 Delta Timing Error @ -3.7ms
12:36	1195	2183	011	S3G02 Auto Fire @ 188.1ms
12:37	1196	2184	011	S3G02 Auto Fire @ 138.0ms
12:41	1207	2195	011	S3G02 Auto Fire @ 142.3ms
12:42	1210	2198	011	S3G02 Auto Fire @ 165.7ms
12:42	1211	2199	011	S3G02 Auto Fire @ 166.7ms
12:42	1211	2199	011	S3G02 Delta Timing Error @ -3.5ms
12:43	1213	2201	011	S3G02 Auto Fire @ 176.2ms
12:44	1214	2202	011	S3G02 Auto Fire @ 176.2ms
12:44	1215	2203	011	S1G02 Delta Timing Error @ -2.2ms
12:44	1216	2204	011	S3G02 Delta Timing Error @ 3.6ms
12:45	1217	2205	011	S3G02 Delta Timing Error @ 2.2ms
12:45	1217	2205	011	S1G02 Delta Timing Error @ -2.6ms
12:46	1219	2207	011	S3G02 Auto Fire @ 161.5ms
12:47	1222	2210	011	S3G02 Auto Fire @ 166.6ms
12:48	1225	2213	011	S1G02 Delta Timing Error @ -2.7ms
12:49	1227	2215	011	S1G02 Delta Timing Error @ 2.5ms
12:50	1230	2218	011	S3G02 Auto Fire @ 143.2ms
12:50	1231	2219	011	S3G02 Auto Fire @ 159.0ms
12:51	1232	2220	011	S3G02 Auto Fire @ 142.8ms
12:52	1234	2222	011	S3G02 Auto Fire @ 144.5ms
12:52	1236	2224	011	S3G02 Delta Timing Error @ 3.9ms
12:53	1237	2225	011	S3G02 Delta Timing Error @ -3.0ms
12:54	1239	2227	011	S3G02 Auto Fire @ 144.3ms
12:54	1240	2228	011	S3G02 Auto Fire @ 182.0ms
12:58	1250	2238	011	S3G02 Auto Fire @ 143.5ms
12:59	1251	2239	011	S3G02 Auto Fire @ 143.5ms
12:59	1251	2239	011	S3G02 Delta Timing Error @ 2.9ms

12:59	1252	2240	011	S3G02 Auto Fire @ 174.7ms
12:59	1253	2241	011	S3G02 Auto Fire @ 174.7ms
13:00	1255	2243	011	S1G02 Delta Timing Error @ -2.6ms
13:01	1256	2244	011	S1G02 Delta Timing Error @ 3.1ms
13:03	1263	2251	011	S3G02 Delta Timing Error @ 3.2ms
13:04	1264	2252	011	S3G02 Delta Timing Error @ -3.2ms
13:04	1264	2252	011	S1G02 Delta Timing Error @ -3.0ms
13:05	1266	2254	011	S3G02 Auto Fire @ 172.3ms
13:06	1270	2258	011	S1G02 Delta Timing Error @ -3.1ms
13:07	1272	2260	011	S1G02 Delta Timing Error @ 3.0ms
13:08	1275	2263	011	S3G02 Delta Timing Error @ 3.1ms
13:09	1276	2264	011	S3G02 Delta Timing Error @ -2.3ms
13:10	1280	2268	011	S3G02 Auto Fire @ 142.0ms
13:10	1280	2268	011	S1G02 Delta Timing Error @ 2.6ms
13:11	1282	2270	011	S3G02 Delta Timing Error @ 4.6ms
13:12	1283	2271	011	S3G02 Delta Timing Error @ -3.2ms
13:13	1288	2276	011	S3G02 Auto Fire @ 141.6ms
13:13	1288	2276	011	S3G02 Delta Timing Error @ 4.8ms
13:14	1289	2277	011	S3G02 Delta Timing Error @ -3.6ms
13:15	1291	2279	011	S3G02 Auto Fire @ 310.3ms
13:15	1292	2280	011	S3G02 Auto Fire @ 162.3ms
13:16	1294	2282	011	S1G02 Delta Timing Error @ -2.2ms
13:19	1302	2290	011	S3G02 Auto Fire @ 208.6ms
13:19	1304	2292	011	S3G02 Auto Fire @ 135.6ms
13:19	1304	2292	012	S3G02 Delta Timing Error @ 2.7ms
13:19	1304	2292	013	S3G02 Auto Fire @ 135.6ms
13:19	1305	2293	014	S1G02 Delta Timing Error @ -2.8ms
13:19	1305	2293	015	S3G02 Auto Fire @ 135.6ms
13:19	1305	2293	016	S3G02 Delta Timing Error @ 3.2ms
13:19	1305	2293	017	S3G02 Auto Fire @ 154.3ms
13:20	1306	2294	011	S1G01 Detal Timing Error @ -2.3ms
13:22	1309	2297	011	S3G02 Auto Fire @ 165.2ms
13:23	1311	2299	011	S3G02 Auto Fire @ 207.5ms
13:23	1312	2300	011	S3G02 Auto Fire @ 207.5ms
13:25	1317	2305	011	S3G02 Delta Timing Error @ 4.2ms
13:25	1318	2306	011	S3G02 Delta Timing Error @ -3.1ms
13:26	1320	2308	011	S3G02 Auto Fire @ 316.2ms
13:26	1320	2308	011	S1G02 Delta Timing Error @ -2.4ms
13:27	1322	2310	011	S1G02 Delta Timing Error @ 2.3ms
13:27	1322	2310	011	S3G02 Delta Timing Error @ 4.0ms
13:27	1323	2311	011	S3G02 Auto Fire @ 197.6ms
13:28	1324	2312	011	S3G02 Auto Fire @ 146.5ms
13:28	1325	2313	011	S3G02 Auto Fire @ 146.5ms
13:29	1328	2316	011	S1G02 Delta Timing Error @ -2.9ms
13:30	1330	2318	011	S1G02 Delta Timing Error @ 2.8ms
13:31	1332	2320	011	S3G02 Auto Fire @ 137.3ms
13:32	1334	2322	011	S3G02 Auto Fire @ 314.2ms
13:34	1340	2328	011	S3G02 Auto Fire @ 140.2ms
13:36	1345	2333	011	S3G09 No Fire Error
13:36	1346	2334	011	S3G02 Auto Fire @ 156.5ms
13:37	1347	2335	011	S3G02 Auto Fire @ 156.5ms
13:37	1347	2335	011	S3G02 Delta Timing Error @ -3.4ms
13:37	1348	2336	011	S3G02 Delta Timing Error @ -3.4ms
13:37	1348	2336	011	S1G02 Delta Timing Error @ -2.6ms
13:42	1361	2349	011	S3G02 Auto Fire @ 138.9ms
13:42	1362	2350	011	S3G02 Auto Fire @ 158.9ms
13:43	1364	2352	011	S3G02 Auto Fire @ 160.8ms
13:44	1366	2354	011	S3G02 Auto Fire @ 179.8ms
13:44	1366	2354	011	S3G02 Delta Timing Error @ 4.0ms

13:44	1367	2355	011	S3G02 Auto Fire @ 150.2ms
13:45	1368	2356	011	S3G02 Auto Fire @ 150.2ms
13:45	1369	2357	011	S3G02 Auto Fire @ 185.7ms
13:45	1370	2358	011	S3G02 Auto Fire @ 142.9ms
13:46	1372	2360	011	S3G02 Auto Fire @ 142.9ms
13:48	1376	2364	011	S3G02 Auto Fire @ 143.6ms
13:48	1376	2364	011	S1G02 Delta Timing Error @ 2.2ms
13:48	1377	2365	011	S3G02 Auto Fire @ 143.6ms
13:49	1379	2367	011	S3G02 Auto Fire @ 168.5ms
13:49	1379	2367	011	S1G02 Delta Timing Error @ -2.6ms
13:49	1380	2368	011	S3G02 Auto Fire @ 168.5ms
13:50	1382	2370	011	S3G02 Delta Timing @ 4.0ms
13:51	1383	2371	011	S3G02 Delta Timing Error @ -3.0ms
13:51	1384	2372	011	S3G02 Auto Fire @ 147.4ms
13:52	1387	2375	011	S3G02 Auto Fire @ 141.9ms
13:52	1388	2376	011	S3G02 Auto Fire @ 200.8ms
13:53	1389	2377	011	S3G02 Auto Fire @ 161.3ms
13:53	1390	2378	011	S3G02 Auto Fire @ 314.4ms
13:54	1393	2381	011	S3G02 Auto Fire @ 159.4ms
13:56	1397	2385	011	S1G02 Delta Timing Error @ -2.7ms
13:58	1403	2391	011	S3G02 Auto Fire @ 145.0ms
14:00	1407	2395	011	S1G02 Delta Timing @ -2.6ms
14:01	1409	2397	011	S3G02 Delta Timing @ 4.7ms
14:01	1410	2398	011	S3G02 Auto Fire @ 171.1ms
14:01	1411	2399	011	S3G02 Auto Fire @ 171.1ms
14:07	1424	2412	011	S3G02 Auto Fire @ 167.9
14:10	1432	2420	011	S3G02 Auto Fire @ 164.0ms
14:10	1433	2421	011	S1G02 Delta Timing @ 2.6ms
14:11	1435	2423	011	S3G02 Auto Fire @ 152.9ms
14:12	1437	2425	011	S3G02 Auto Fire @ 310.3ms
14:13	1441	2429	011	S3G02 Auto Fire @ 165.9ms
14:14	1442	2430	011	S3G02 Auto Fire @ 174.2ms
14:15	1446	2434	011	S1G02 Delta Timing @ -4.4ms
14:16	1448	2436	011	S1G02 Delta Timing @ 3.3ms
14:16	1448	2436	011	S3G02 Auto Fire @ 176.6ms
14:17	1450	2438	011	S3G02 Auto Fire @ 158.4ms
14:20	1458	2446	011	S3G02 Auto Fire @ 141.9ms
14:20	1460	2448	011	S1G02 Delta Timing @ -2.3ms
14:23	1466	2454	011	S3G02 Sdelta Timing @ 4.3ms
14:23	1467	2455	011	S1G02 Delta Timing @ -2.7ms
14:23	1467	2455	011	S2G03 Delta Timing @ -3.2ms
14:24	1468	2456	011	S1G02 Delta Timing @ 2.4ms
14:24	1468	2456	011	S1G02 Dela Timing @ 2.8ms
14:24	1470	2458	011	S3G02 Auto Fire @ 155.2ms
14:29	1483	2471	011	S3G02 Auto Fire @ 300.6ms
14:30	1484	2472	011	S3G02 Auto Fire @ 313.3ms
14:31	1486	2474	011	S1G02 Delta Timing @ 2.1ms
14:31	1487	2475	011	S3G02 Auto Fire @ 142.7ms
14:33	1491	2479	011	S3G02 Auto Fire @ 142.5ms
14:33	1492	2480	011	S3G02 Auto Fire @ 142.5ms
14:33	1493	2481	011	S3G02 Delta Timing @ -2.1ms
14:33	1493	2481	011	S1G02 Delta Timing Error @ -2.1ms
14:34	1495	2483	011	S3G02 Auto Fire @ 143.6ms
14:36	1499	2487	011	S3G02 Auto Fire @ 171.1ms
14:38	1506	2494	011	S3G02 Auto Fire @ 184.2ms
14:43	1519	2507	011	S3G02 Auto Fire @ 145.5ms
14:44	1522	2510	011	S3G02 Auto Fire @ 171.5ms
14:45	1524	2512	011	S3G02 Auto Fire @ 178.1ms
14:47	1527	2515	011	S1G02 Delta Timing @ 2.6ms

14:49	1534	2522	011	S3G02 Delta Timing @ 3.6ms
14:50	1535	2523	011	S3G02 Delta Timing @ -2.8ms
14:51	1537	2525	011	S3G02 Auto Fire @ 148.6ms
14:51	1539	2527	011	S21G02 Delta Timing @ -3.4ms
14:51	1539	2527	011	S3G02 Auto Fire @ 178.9
14:52	1540	2528	011	S3G02 Auto Fire @ 178.9
14:52	1541	2529	011	S3G02 Auto Fire 113.4ms
14:52	1542	2530	011	S1G02 Delta Timing @ 3.0ms
14:53	1543	2531	011	S1G02 Delta Timing @ 2.6ms
14:54	1545	2533	011	S3G02 AutoFire @ 142.0ms
14:54	1545	2533	011	S1G02 Delta Timing -2.6ms
14:54	1545	2533	011	S3G02 Auto Fire 142ms
14:55	1548	2536	011	S1G02 Delta Timing 2.6ms
14:55	1549	2537	011	S1G02 Delta Timing 2.1ms
14:56	1550	2538	011	S3G02 Auto Fire 140.9ms
14:57	1553	2541	011	S2G02 Delta Timing @ -3.3ms
15:00	1562	2550	011	S1G02 Delta Timing @ -3.8ms
15:01	1564	2552	011	S3G02 AutoFire 162.1ms
15:01	1564	2552	011	S1G02 Delta Timing @ 3.6ms
15:01	1565	2553	011	S3G02 Delta Timing @ 4.1ms
15:02	1566	2554	011	S3G02 Delta Timing @ -3.1ms
15:04	1571	2559	011	S3G02 Delta Timing @ 4.5ms
15:04	1572	2560	011	S3G02 Delta Timing @ -3.3ms
15:07	1580	2568	011	S1G02 Delta Timing @ -2.1ms
15:07	1581	2569	011	S1G02 Delta Timing @ -2.6ms
15:07	1581	2569	011	S3G02 Auto Fire @ 134.9ms
15:08	1583	2571	011	S3G02 Delta Timing @ 4.7ms
15:09	1584	2572	011	S1G02 Delta Timing @ 2.9ms
15:09	1584	2572	011	S3G02 Delta Timing @ -3.5ms
15:11	1590	2578	011	S1G02 Delta Timing @ 2.2ms
15:11	1591	2579	011	S3G02 AutoFire @ 138.5ms
15:11	1591	2579	011	S3G02 Delta Timing @ 3.8ms
15:12	1592	2580	011	S3G02 Delta Timing @ -2.8ms
15:13	1596	2584	011	S3G02 Delta Timing @ 3.2ms
15:14	1597	2585	011	S3G02 Delta Timing @ -2.1ms
15:15	1600	2588	011	S3G02 Auto Fire @ 141.9ms
15:15	1601	2589	011	S3G02 Auto Fire 162.9ms
15:15	1601	2589	011	S3G09 Delta Timing @ -7.3ms
15:16	1602	2590	011	S3G02 Auto Fire 162.9ms
15:16	1602	2590	011	S3G09 Delta Timing @ 12.0ms
15:16	1603	2591	011	S3G09 Delta Timing @ -3.4ms
15:17	1605	2593	011	S3G02 Auto Fire 165.0ms
15:17	1606	2594	011	S3G02 Auto Fire @ 165.5ms
15:18	1608	2596	011	S1G02 Delta Timing @ 2.1ms
15:18	1609	2597	011	S3G02 Auto Fire @ 145.7ms
15:18	1609	2597	011	S3G02 Delta Timing @ 4.6ms
15:19	1610	2598	011	S3G02 Delta Timing @ -3.3ms
15:21	1616	2604	011	S3G02 Delta Timing @ 3.6ms
15:22	1617	2605	011	S3G02 Delta Timing @ -2.7ms
15:27	1631	2619	011	S3G02 Auto Fire @ 176.7ms
15:31	1639	2627	011	S3G02 Auto Fire @ 179.1ms
15:31	1641	2629	011	S3G02 Auto Fire @ 142.1ms
15:34	1648	2636	011	S3G02 Auto Fire @147.1ms
15:36	1653	2641	011	S1G02 Delta Timing @ 2.3ms
15:36	1654	2642	011	S1G02 Delta Timing @ -3.6ms
15:37	1655	2643	011	S1G02 Delta Timing @ 2.3ms
15:39	1661	2649	011	S3G02 Auto Fire @ 138.1ms
15:42	1668	2656	011	S1G02 Delta Timing @ -2.8ms
15:42	1669	2657	011	S1G02 Delta Timing @ 2.7 ms

15:43	1671	2659	011	S3G02 Auto Fire @ 168.1 ms
15:43	1672	2660	011	S3G02 Auto Fire@ 152.8 ms
15:44	1673	2661	011	S3G02 Auto Fire @ 165.4ms
15:44	1674	2662	011	S1G02 Delta Timing @ 2.2 ms
15:49	1687	2675	011	S3G02 Delta Timing @ 2.8 ms
15:50	1690	2678	011	S3G02 Auto Fire @ 147.2ms
15:51	1691	2679	011	S3G02 Auto Fire @ 144.7ms
15:51	1691	2679	011	S3G02 Delta Timing @ 4.9ms
15:51	1692	2680	011	S3G02 Delta Timing @ -3.6ms
15:52	1694	2682	011	S3G02 Auto Fire @ 145.7ms
15:53	1697	2685	011	S3G02 Auto Fire @ 142.1ms
15:55	1702	2690	011	S3G02 Auto Fire @ 308.2ms
16:00	1714	2702	011	S3G02 Auto Fire @ 147.5ms
16:08	1735	2723	011	S1G02 Delta Timing @ -2.7ms
16:11	1745	2733	011	S1G02 Delta Timing @ 2.5ms
16:11	1745	2733	011	S3G02 Auto Fire @ 167.8ms
16:15	1754	2742	011	S1G02 Delta Timing @ -2.8ms
16:16	1757	2745	011	S3G02 Auto Fire 142.9ms
16:17	1758	2746	011	S3G02 Auto Fire 142.9ms
16:17	1758	2746	011	S3G02 Delta Timing -3.3ms
16:18	1763	2751	011	S3G02 AutoFire @ 166.8ms
16:20	1768	2756	011	S1G02 Delta Timing @ -2.9ms
16:21	1771	2759	011	S1G02 Delta Timing @ 3.4ms
16:23	1775	2763	011	S2G02 Delta Timing @ -2.4ms
16:24	1777	2765	011	S3G02 Auto Fire @ 145.4ms
16:24	1778	2766	011	S1G02 Delta Timing @ 2.1ms
16:27	1785	2773	011	S1G02 Delta Timing @ 2.3ms
16:29	1791	2779	011	S3G02 Delta Timing @ 5.4ms
16:29	1791	2779	011	S3G02 Auto Fire @ 163.5ms
16:29	1790	2778	011	S3GG02 Delta Timing @ -4.1ms
16:34	1803	2791	011	S3G02 Auto Fire @ 138.9ms
16:34	1804	2792	011	S3G02 Auto Fire @ 171.7ms
16:35	1806	2794	011	S3G02 Auto Fire @ 165.3ms
16:36	1809	2797	011	S3G02 Auto Fire @ 142.5ms
16:36	1810	2798	011	S3G02 Auto Fire @ 150.7ms
16:37	1811	2799	011	S3G02 Auto Fire @ 164.0ms
16:38	1815	2803	011	S1G02 Delta Timing @ 3.0ms
16:39	1816	2804	011	S1G02 Delta Timing @ -3.3ms
16:39	1818	2806	011	S3G02 Auto Fire @ 178.6ms
16:41	1823	2811	011	S3G02 Auto Fire @ 150.4ms
16:45	1833	2821	011	S1G02 Delta Timing @ 2.1ms
16:46	1834	2822	011	S1G02 Delta Timing @ 2.4ms
16:46	1834	2822	011	S3G02 Auto Fire @ 142.9ms
16:46	1835	2823	011	S3G02 Auto Fire @ 142.9ms
16:47	1838	2826	011	S3G02 Auto Fire @ 310.3ms
16:48	1840	2828	011	S3G02 Delta Timing @ 4.5ms
16:49	1841	2829	011	S3G02 Auto Fire @ 144.0ms
16:49	1842	2830	011	S3G02 Auto Fire @ 144.0ms
16:49	1843	2831	011	S1G02 Delta Timing @ -3.0ms
16:49	1843	2831	011	S3G02 Auto Fire @ 174.2ms
16:50	1844	2832	011	S3G02 Auto Fire @ 174.2ms
16:50	1845	2833	011	S3G02 Auto Fire @ 150.7ms
16:51	1846	2834	011	S3G02 Auto Fire @ 172.1ms
16:51	1847	2835	011	S1G02 Delta Timing @ 2.7ms
16:52	1849	2837	011	S1G02 Delta Timing @ -2.2ms
16:52	1849	2837	011	S3G02 Auto Fire @ 318.9ms
16:53	1851	2839	011	S1G02 Delta Timing @ 2.2ms
16:53	1851	2839	011	S3G02 Auto Fire @ 145.1ms
16:53	1853	2841	011	S1G02 Delta Timing @ 2.2ms

16:56	1861	2849	011	S1G02 Delta Timing @ -2.4ms
16:56	1861	2849	011	S3G02 Auto Fire @ 167.4ms
16:57	1862	2850	011	S1G02 Delta Timing @ 3.0ms
16:57	1863	2851	011	S3G02 Auto Fire @ 162.5ms
16:58	1865	2853	011	S1G02 Delta Timing @ -2.2ms
16:58	1866	2854	011	S1G02 Delta Timing @ 2.9ms
16:59	1868	2856	011	S3G02 Auto Fire @ 181.7ms
17:02	1877	2865	011	S3G02 Auto Fire @ 141.6 ms
17:04	1881	2869	011	S3G02 Auto Fire @ 169.3ms
17:05	1884	2872	011	S1G02 Delta Timing @ -2.5ms
17:06	1887	2875	011	S1G02 Delta Timing @ -2.1ms
17:06	1888	2876	011	S3G02 Auto Fire @ 168.7ms
17:07	1889	2877	011	S3G02 Auto Fire @ 168.7ms
17:07	1889	2877	011	S3G02 Delta Timing @ -3.3ms
17:07	1890	2878	011	S1G02 Delta Timing @ -2.7ms
17:08	1891	2879	011	S1G02 Delta Timing @ 3.4ms
17:10	1898	2886	011	S1G02 Delta Timing @ -2.1ms
17:10	1898	2886	011	S3G02 Auto Fire @ 138.4ms
17:15	1911	2898	011	S1G02 Delta Timing @ -2.9ms
17:17	1916	2903	011	S3G02 Auto Fire @ 143.5ms
17:18	1918	2905	011	S3G02 Auto Fire @ 164.4ms
17:18	1920	2907	011	S1G02 Delta Timing @ -2.4ms
17:19	1921	2908	011	S1G02 Delta Timing @ 2.9ms
17:19	1922	2909	011	S1G02 Delta Timing @ -2.9ms
17:20	1923	2910	011	S3G02 Auto Fire @ 138.2ms
17:21	1926	2913	011	S1G02 Delta Timing @ 2.2ms
17:22	1930	2917	011	S3G02 Auto Fire @ 170.7ms
17:23	1932	2919	011	S3G02 Auto Fire @ 152.5ms
17:24	1934	2921	011	S3G02 Delta Timing @ 5.5ms
17:24	1935	2922	011	S3G02 Auto Fire @ 153.1ms
17:25	1936	2923	011	S3G02 Auto Fire @ 153.1ms
17:26	1939	2926	011	S3G02 Auto Fire @ 152.4ms
17:28	1945	2932	011	S1G02 Delta Timing @ -2.8ms
17:29	1948	2935	011	S1G02 Delta Timing @ 3.9ms
17:30	1950	2937	011	S3G02 Auto Fire @ 143.0ms
17:31	1954	2941	011	S3G02 Auto Fire @ 171.6ms
17:32	1956	2943	011	S3G02 Auto Fire @ 139.0ms
17:32	1957	2944	011	S1G02 Delta Timing @ -2.4ms
17:33	1960	2947	011	S1G02 Delta Timing @ 2.4ms
17:34	1961	2948	011	S1G02 Delta Timing @ -2.5ms
17:35	1963	2950	011	S3G02 Auto Fire @ 165.7
17:35	1964	2951	011	S3G02 Auto Fire @ 165.7
17:36	1966	2953	011	S3G02 Auto Fire @ 149.0ms
17:37	1969	2956	011	S1G02 Delta Time 2.5ms
17:40	1976	2963	011	S1G02 Delta Time @ 3.0ms
17:40	1976	2963	011	S3G02 Auto Fire 167.1ms
17:40	1977	2964	011	S1G02 Delta Time @2.1ms
17:41	1979	2966	011	S3G02 Delta Time @ 4.2ms
17:41	1980	2967	011	S3G02 Auto Fire @ 147.2ms
17:42	1981	2968	011	S3G02 Auto Fire 134.5 ms
17:43	1983	2970	011	S1G02 Delta Time @ -3.1ms
17:43	1984	2971	011	S3G02 Auto Fire @ 154.3ms
17:45	1989	2976	011	S3G02 Auto Fire @ 163.2ms
17:46	1991	2978	011	S3G02 Auto Fire @ 310.1ms
17:46	1992	2979	011	S1G02 Delta Timing @ -2.8ms
17:47	1993	2980	011	S1G02 Delta Timing @ 2.7ms
17:47	1994	2981	011	S3G02 Auto Fire @ 142.2ms
17:48	1997	2984	011	S1G02 Delta Timing @ -2.7ms
17:49	1998	2985	011	S1G02 Delta Timing @ 3.0ms

17:50	2001	2988	011	S1G02 Delta Timing @ -3.0ms
17:50	2002	2989	011	S3G02 Auto Fire @ 133.5ms
17:50	2002	2989	011	S3G09 Delta Timing @ -9.5ms
17:50	2003	2990	011	S3G02 Auto Fire @ 144.8ms
17:50	2003	2990	011	S3G09 Delta Timing @ 8.2ms
17:51	2004	2991	011	S3G02 Auto Fire @ 144.8ms
17:51	2006	2993	011	S1G02 Delta Timing @ 2.1ms
17:52	2008	2995	011	S1G02 Delta Timing @ -3.3ms
17:53	2009	2996	011	S3G02 Auto Fire @ 314.6ms
17:53	2010	2997	011	S3G02 Auto Fire @ 314.6ms
17:53	2010	2997	011	S3G02 Delta Timing @ 3.0ms
17:54	2012	2999	011	S1G02 Delta Timing @ 2.2ms
17:54	2012	2999	011	S3G02 Auto Fire @ 143.8ms
17:55	2014	3001	011	S1G02 Delta Timing @ -3.1ms
17:55	2014	3001	011	S3G02 Auto Fire @ 294.7ms
17:56	2018	3005	011	S1G02 Delta Timing @ 3.3ms
17:59	2024	3011	011	S1G02 Delta Timing @ 2.1 ms
18:00	2027	3014	011	S3G02 Auto Fire @ 144.8ms
18:01	2029	3016	011	S3G02 AF @ 138.4ms
18:01	2030	3017	011	S1G01 DeltaTiming Error @ 2.6ms
18:01	2030	3017	011	S1G01 Delta Timing @ -3.4ms
18:01	2030	3017	011	S3G02 Auto Fire @ 139.0ms
18:01	2031	3018	011	S1G01 Delta Timing @ 2.2ms
18:01	2031	3018	011	S1G02 Delta Timing @ -2.5ms
18:02	2031	3018	011	S3G02 Auto Fire 139.0
18:02	2032	3019	011	S3G01 Delta Timing @ -2.2ms
18:04	2037	3024	011	S1G02 Delta Timing @2.7ms
18:04	2038	3025	011	S3G02 Auto Fire @ 139.6ms
18:04	2038	3025	011	S3G02 Delta Timing 4.1ms
18:05	2039	3026	011	S3G02 Delta Timing @-3.1ms
18:05	2041	3028	011	S3G02 Auto Fire @ 137.6ms
18:07	2045	3032	011	S1G02 Delta Timing @ 2.2ms
18:08	2047	3034	011	S3G02 Auto Fire @ 166.4ms
18:09	2051	3038	011	S1G02 Delta Timing @2.1ms
18:09	2051	3038	011	S3G02 Auto Fire @320.7
18:10	2053	3040	011	S3G06 Comm Error
18:10	2054	3041	011	S1G02 Delta Timing @-3.0ms
18:11	2055	3042	011	S3G02 Auto Fire 135.4ms
18:11	2056	3043	011	S1G02 Delta Timing 2.7ms
18:12	2056	3043	011	End of Reel 011
18:12	2057	3044	012	Start of Reel 012
18:12	2057	3044	012	S3G06 Comm Error
18:14	2064	3051	012	S1G02 Delta Timing @ 2.4ms
18:15	2066	3053	012	S1G02 Delta Timing @ -2.3ms
18:16	2069	3056	012	S1G02 Delta Timing @ -3.0ms
18:18	2074	3061	012	S1G02 Delta Timing @ 3.0ms
18:21	2080	3067	012	S1G02 Delta Timing @ 2.6ms
18:21	2081	3068	012	S3G02 Auto Fire @ 167.3
18:21	2082	3069	012	S1G02 Delta Timing @ -2.1ms
18:27	2097	3084	012	S1G02 Delta Timing @ 2.4ms
18:27	2097	3084	012	S3G02 Auto Fire @ 163.3ms
18:28	2098	3085	012	S1G03 Delta Timing @ -2.5ms
18:28	2098	3085	012	S3G02 Auto Fire @ 139.9ms
18:28	2099	3086	012	S3G02 Auto Fire @ 139.9ms
18:29	2101	3088	012	S1G02 Delta Timing @ -2.4ms
18:31	2108	3095	012	S1G02 Delta Timing @ 2.2ms
18:32	2110	3097	012	S1G02 Delta Timing @ -2.4ms
18:33	2112	3099	012	S3G02 Auto Fire @ 138.9ms
18:33	2113	3100	012	S3G02 Auto Fire @139.ms

18:34	2114	3101	012	S3G02 Delta Timing @ -3.3ms
18:34	2115	3102	012	S1G02 Delta Timing @ 2.4ms
18:35	2117	3104	012	S1G02 Delta Timing @ -2.1ms
18:37	2122	3109	012	S3G02 Delta Timing @ 4.2ms
18:37	2123	3110	012	S3G02 Delta Timing @ -3.1ms
18:37	2124	3111	012	S1G02 Delta Timing @ 2.1ms
18:40	2130	3117	012	S1G02 Delta Timing @ 2.5ms
18:45	2143	3130	012	S1G02 Delta Timing @ 3.3ms
18:45	2144	3131	012	S3G02 Auto Fire @ 139.4ms
18:45	2145	3132	012	S1G02 Delta Timing @ -2.3ms
18:46	2147	3134	012	S1G02 Delta Timing @ -2.2ms
18:48	2151	3138	012	S3G02 Auto Fire @ 196.3ms
18:48	2151	3138	012	S3G02 Delta Timing @ 4.3ms
18:49	2152	3139	012	S3G02 Delta Timing @ -3.0ms
18:49	2154	3141	012	S3G02 AF @ 146.7ms
18:50	2156	3143	012	S1G02 Delta Timing @ -2.7ms
18:50	2157	3144	012	S1G02 Delta Timing @ 3.0ms
18:51	2160	3147	012	S1G02 Delta Timing @ -2.7ms
18:51	2160	3147	012	S3G02 Auto Fire @ 157.4ms
18:52	2161	3148	012	S3G02 Auto Fire @ 157.4
18:52	2161	3148	012	S3G02 Delta Timing @ 4.6ms
18:52	2160	3147	012	S1G02 Delta Timing @ 2.8ms
18:52	2162	3149	012	S1G02 Delta Timing @ -3.3ms
18:53	2165	3152	012	S3G02 Delta Timing @ 3.6ms
18:54	2166	3153	012	S3G02 Auto Fire @ 142.8ms
18:54	2167	3154	012	S1G02 Delta Timing @ -3.0ms
18:54	2167	3154	012	S3G02 Auto Fire @ 142.8ms
18:54	2167	3154	012	S3G02 Delta Timing @ 3.0ms
18:55	2170	3157	012	S3G02 Delta Timing @ -3.0ms
18:55	2170	3157	012	S3G02 Auto Fire @ 165.7ms
18:56	2172	3159	012	S1G02 Delta Timing @ 3.3ms
18:56	2172	3159	012	S3G02 Auto Fire @ 168.5ms
18:57	2174	3161	012	S3G02 Auto Fire @ 146.5ms
19:00	2181	3168	012	S3G02 Auto Fire @ 154.5ms
19:01	2184	3171	012	S1G02 Delta Timing @ 2.4ms
19:01	2185	3172	012	S3G02 Auto Fire @ 171.6ms
19:03	2189	3176	012	S1G02 Delta Timing @ 2.5ms
19:03	2190	3177	012	S3G02 Auto Fire @ 171.2ma
19:04	2191	3178	012	S1G02 Delta Timing @ -2.9ms
19:04	2191	3178	012	S3G02 Delta Timing @ 5.2ms
19:04	2192	3179	012	S3G02 Auto Fire @ 144.0ms
19:05	2193	3180	012	S3G02 Auto Fire @ 144.0ms
19:05	2194	3181	012	S3G02 Auto Fire @ 139.7ms
19:05	2195	3182	012	S3G02 Auto Fire @ 162.7ms
19:07	2199	3186	012	S1G02 Delta Timing @ -2.8ms
19:07	2200	3187	012	S3G02 Auto Fire @ 141.8ms
19:08	2201	3188	012	S1G02 Delta Timing @ -2.2ms
19:09	2203	3190	012	S3G02 Auto Fire @ 165.9ms
19:10	2205	3192	012	S3G02 Auto Fire @ 154.8ms
19:10	2205	3192	012	S3G02 Delta Timing@ 4.2ms
19:10	2206	3193	012	S3G02 Delta Timing@ -3.1ms
19:11	2208	3195	012	S3G02 Auto Fire @ 140.1ms
19:12	2210	3197	012	S1G02 Delta Timing @ -2.3ms
19:13	2214	3201	012	S3G02 Auto Fire @ 153.3ms
19:14	2216	3204	012	S1G02 Delta Timing @ -2.4ms
19:17	2223	3211	012	S1G02 Delta Timing @ -2.1ms
19:19	2229	3217	012	S3G02 Auto Fire @ 180.0ms
19:20	2230	3218	012	S1G02 Delta Timing @ -2.4ms
19:21	2233	3221	012	S1G02 Delta Timing @ -2.9ms

19:21	2234	3222	012	S3G02 Auto Fire @ 158.3ms
19:22	2235	3223	012	S3G02 Auto Fire @ 158.3ms
19:22	2235	3223	012	S3G02 Delta Timing -3.3ms
19:23	2238	3226	012	S3G02 Auto Fire @ 168.9ms
19:23	2238	3226	012	S3G02 Delta Timing @ 6.3ms
19:23	2239	3227	012	S3G02 Delta Timing @ -4.4ms
19:24	2240	3228	012	S3G01 Delta Timing @ -2.6ms
19:28	2250	3238	012	S1G02 Delta Timing@ 2.4ms
19:28	2250	3238	012	S3G02 Auto Fire @ 146.2ms
19:28	2241	3229	012	S3G02 Auto Fire @ 146.2ms
19:28	2241	3229	012	S3G02 Delta Timing -3.0ms
19:29	2253	3241	012	S3G02 Auto Fire 173.8ms
19:32	2261	3249	012	S3G02 Auto Fire 150.7ms
19:33	2262	3250	012	S1G02 Delta Timing@ -2.4ms
19:33	2262	3250	012	S3G02 Auto Fire @ 163.9ms
19:34	2266	3254	012	S1G02 Delta Timing@ 2.1ms
19:35	2268	3256	012	S3G02 Auto Fire @ 168.9ms
19:35	2269	3257	012	S3G02 Delta Timing @ 5.6ms
19:36	2270	3258	012	S3G02 Delta Timing -4.3ms
19:37	2273	3261	012	S3G02 Auto Fire @ 141.8ms
19:38	2276	3264	012	S1G02 Delta Timing@ 2.4ms
19:40	2282	3270	012	S3G02 Delta Timing 4.2ms
19:41	2283	3271	012	S3G02 Delta Timing -2.9ms
19:41	2284	3272	012	S1G02 Delta Timing@ -2.9ms
19:42	2286	3274	012	S3G02 Auto Fire @ 163.4ms
19:42	2286	3274	012	S3G02 Delta Timing 4.3ms
19:43	2287	3275	012	S3G02 Delta Timing -3.4ms
19:43	2289	3277	012	S1G02 Delta Timing@ -3.8ms
19:44	2291	3279	012	S1G02 Delta Timing@ 3.1ms
19:44	2291	3279	012	S3G02 Auto Fire @ 171.7ms
19:44	2292	3280	012	S3G02 Auto Fire @ 171.7ms
19:45	2293	3281	012	S3G02 Auto Fire @ 324.1ms
19:45	2293	3282	012	S1G02 Delta Timing@ -2.5ms
19:46	2297	3285	012	S1G02 Delta Timing@ 3.3ms
19:50	2305	3293	012	S3G02 Auto Fire @ 139.0ms
19:51	2308	3296	012	S3G02 Auto Fire @ 140.9ms
19:52	2311	3299	012	S3G02 Delta Timing @ 4.6ms
19:52	2312	3300	012	S3G02 Auto Fire @ 142.2
19:53	2314	3302	012	S3G02 Auto Fire @ 142.2
19:53	2315	3303	012	S1G02 Delta Timing @ 2.9ms
19:56	2323	3310	012	S3G02 Auto Fire @ 165.7ms
19:57	2326	3313	012	S1G02 Delta Timing @ 2.2ms
19:58	2328	3315	012	S1G02 Delta Timing @ -2.5
19:58	2328	3315	012	S3G02 Auto Fire @ 175.1
19:59	2329	3316	012	S3G02 AF @ 175.1
19:59	2329	3316	012	S3G02 Delta Timing @ -3.1ms
20:00	2332	3319	012	S3G02 Delta Timing @ 3.1
20:01	2335	3322	012	S1G02 Delta Timing @ -3.2
20:02	2337	3324	012	S1G02 Delta Timing @ 2.1ms
20:02	2338	3325	012	S1G02 Delta Timing @ -2.8ms
20:02	2338	3325	012	S3G02 Auto Fire 313.2ms
20:03	2339	3326	012	S3G02 Auto Fire @ 313.2ms
20:03	2339	3326	012	S3G02 Delta Timing @ -3.5ms
20"03	2340	3327	012	S3G01 Delta Timing @ 2.3ms
20:04	2342	3329	012	S1G02 Delta Timing @ 3.1ms
20:05	2346	3333	012	S3G02 Auto Fire 177.6ms
20:08	2352	3339	012	S3G02 Auto Fire @ 143.6ms
20:08	2354	3341	012	S3G02 Auto Fire @ 163.9ms
20:09	2356	3343	012	S3G02 Delta Timing @ 5.7ms

20:10	2357	3344	012	S3G02 Delta Timing @ -4.1ms
20:10	2358	3345	012	S3G02 Delta Timing @ 4.7ms
20:10	2359	3346	012	S3G02 Delta Timing @ -4.6ms
20:12	2363	3350	012	S3G02 Auto Fire @ 161.4ms
20:13	2365	3352	012	S1G02 Delta Timing @ -2.2ms
20:13	2366	3353	012	S1G02 Delta Timing @ 3.1ms
20:13	2366	3353	012	S3G02 Auto Fire @ 141.8ms
20:14	2367	3354	012	S3G02 Auto Fire @ 141.8ms
20:15	2370	3357	012	S1G02 Delta Timing @ -3.4ms
20:16	2374	3361	012	S1G02 Delta Timing @ 2.2ms
20:16	2374	3361	012	S3G02 Auto Fire @ 191.8ms
20:17	2376	3363	012	S1G02 Delta Timing @ -3.7ms
20:18	2378	3365	012	S1G02 Delta Timing @ 2.6ms
20:20	2385	3372	012	S3G02 Auto Fire @ 144.0ms
20:23	2392	3379	012	S3G02 Auto Fire @ 143.6ms
20:26	2398	3385	012	S3G02 Auto Fire @ 336.2ms
20:26	2399	3386	012	S3G02 Auto Fire @ 336.2ms
20:26	2399	3386	012	S3G02 Delta Timing @ -2.5ms
20:27	2402	3389	012	S3G06 Comm Error
20:29	2407	3394	012	S3G02 Auto Fire @ 164.4ms
20:30	2410	3397	012	S2G02 Delta Timing @ -2.2ms
20:31	2413	3400	012	S1G02 Delta Timing @ 2.8ms
20:31	2413	3400	012	S3G02 Auto Fire @ 174.7ms
20:32	3402	3402	012	S1G02 Delta Timing @ -2.5ms
20:32	2415	3402	012	S3G02 Auto Fire @ 164.5ms
20:33	2418	3405	012	S3G02 Delta Timing @ 4.8ms
20:34	2419	3406	012	S1G02 Delta Timing @ -2.3ms
20:34	2419	3406	012	S3G02 Delta Timing @ -3.6ms
20:34	2420	3407	012	S3G01 Delta Timing @ -3.3ms
20:36	2425	3412	012	S1G02 Delta Timing @ 2.4ms
20:37	2428	3415	012	S3G02 Delta Timing @ 5.2ms
20:37	2429	3416	012	S3G02 Auto Fire @ 204.1ms
20:38	2430	3417	012	S3G01 Delta Timing @ -2.5ms
20:38	2430	3417	012	S3G02 Auto Fire @ 169.2ms
20:38	2431	3418	012	S3G02 Auto Fire @ 169.2ms
20:39	2432	3419	012	S21G02 Delta Timing @ -3.1ms
20:40	2435	3422	012	S1G02 Delta Timing @ 2.4ms
20:40	2436	3423	012	S3G02 Auto Fire @ 167.6ms
20:41	2437	3424	012	S1G02 Delta Timing @ -2.6ms
20:41	2437	3424	012	S3G02 Auto Fire @ 142.9ms
20:41	2438	3425	012	S3G02 Auto Fire @ 142.9ms
20:42	2441	3428	012	S3G01 Delta Timing @ 2.1ms
20:42	2442	3429	012	S3G01 Delta Timing @ -2.4ms
20:45	2448	3435	012	S3G02 Auto Fire @ 149.2ms
20:45	2449	3436	012	S3G02 Auto Fire @ 172.5ms
20:46	2450	3437	012	S3G01 Delta Timing @ -2.3ms
20:46	2450	3437	012	S3G02 Auto Fire @ 144.6ms
20:48	2455	3442	012	S1G02 Delta Timing @ -2.6ms
20:49	2459	3446	012	S1G02 Delta Timing @ 2.7ms
20:50	2461	3448	012	S1G02 Delta Timing @ -2.7ms
20:51	2463	3450	012	S1G02 Delta Timing @ 2.8ms
20:52	2465	3452	012	S3G02 Auto Fire @ 182.4ms
20:52	2466	3453	012	S1G02 Delta Timing @ -2.8ms
20:53	2468	3455	012	S3G02 Auto Fire @ 169.5ms
20:54	2472	3459	012	S1G02 Delta Timing @ -2.1ms
20:55	2474	3461	012	S1G02 Delta Timing @ 2.4ms
20:55	2474	3461	012	S3G02 Auto Fire @ 137.1ms
20:55	2475	3462	012	S3G02 Auto Fire @ 137.1ms
20:55	2475	3462	012	S3G02 Delta Timing @ -4.3ms

20:57	2478	3465	012	S3G02 Delta timing @ 4.0ms
20:57	2479	3466	012	S1G02 Delta Timing @ -2.3ms
20:57	2479	3466	012	S3G02 Delta Timing @ -3.3ms
20:57	2480	3467	012	S3G01 Delta Timing @ -2.6ms
20:57	2480	3467	012	S3G02 Auto Fire @ 140.8ms
20:58	2483	3470	012	S1G02 Delta Timing @ 2.6ms
20:58	2483	3470	012	S3G02 Auto Fire @ 165.1ms
20:59	2484	3471	012	S1G02 Delta Timing @ -3.3ms
20:59	2484	3471	012	S3G01 Delta Tming -2.7ms
20:59	2484	3471	012	S3G01 Auto Fire @ 165.1ms
21:01	2489	3476	012	S3G02 Auto Fire @ 166.9ms
21:01	2490	3477	012	S3G02 Auto Fire @ 182.3ms
21:02	2493	3480	012	S1G02 Delta Timing @ 2.1ms
21:03	2494	3481	012	S3G02 Auto Fire @ 166.9ms
21:04	2497	3484	012	S3G02 Auto Fire @ 169.1ms
21:04	2498	3485	012	S3G02 Auto Fire @ 206.1ms
21:06	2501	3488	012	S1G02 Delta Timing @ -3.7ms
21:07	2504	3491	012	S3G02 Auto Fire @ 144.4ms
21:08	2508	3495	012	S3G01 Delta Timing @ -2.5ms
21:09	2511	3498	012	S3G02 Delta Timing @ 3.6ms
21:10	2512	3499	012	S3G02 Delta Timing @ -2.6ms
21:10	2513	3500	012	S2G02 Delta Timing @ -3.0
21:10	2514	3501	012	S3G02 Comm Error
21:10	2514	3501	012	S3G03 Comm Error
21:10	2514	3501	012	S3G04 Comm Error
21:10	2514	3501	012	S3G05 Comm Error
21:10	2514	3501	012	S3G06 Comm Error
21:10	2514	3501	012	S3G07 Comm Error
21:10	2514	3501	012	S3G08 Comm Error
21:10	2514	3501	012	S3G09 Comm Error
21:10	2514	3501	012	S3G10 Comm Error
21:12	2517	3504	012	S1G02 Delta Timing @ 2.3
21:12	2516	3503	012	S3G02 Auto Fire @ 318.0
21:12	2519	3506	012	S3G02 Auto Fire 114.5
21:13	2520	3507	012	S3G02 Auto Fire 114.5
21:13	2522	3509	012	S1G02 Delta Timing @ -3.8
21:16	2528	3515	012	S1G02 Delta Timing @ -2.5ms
21:16	2528	3515	012	S3G01 Delta Timing @ -2.2ms
21:16	2528	3515	012	S3G02 Auto Fire @ 140.8ms
21:16	2528	3515	012	S3G02 Delta Timing @ 4.1ms
21:16	2529	3516	012	S3G02 Delta Timing @ -3.2ms
21:17	2530	3517	012	S3G01 Delta Timing @ -2.9ms
21:20	2538	3525	012	S1G02 Delta Timing @ -2.9ms
21:21	2541	3528	012	S3G02 Auto Fire @ 145.7ms
21:23	2545	3532	012	S2G02 Delta Timing @ 3.5ms
21:23	2545	3532	012	S3G02 Auto Fire @ 159.6ms
21:24	2550	3537	012	S3G02 Auto Fire @ 154.9
21:25	2551	3538	012	S3G02 Auto Fire @ 171.5
21:26	2554	3541	012	S1G02 Delta Timing @ 2.8ms
21:28	2560	3547	012	S1G02 Delta Timing @ 2.4ms
21:31	2566	3553	012	S3G02 Auto Fire @ 189.9ms
21:31	2566	3553	012	S3G02 Delta Timing @ 6.3ms
21:31	2567	3554	012	S3G02 Delta Timing @ -4.8ms
21:32	2568	3555	012	S3G02 Delta Timing @ -2.7ms
21:32	2570	3557	012	S3G02 Auto Fire @ 180.6ms
21:33	2572	3559	012	S3G02 Auto Fire @ 312.7ms
21:33	2573	3560	012	S3G02 Delta Timing @ -8.0ms
21:36	2580	3567	012	S1G02 Delta Timing @ -2.6ms
21:36	2580	3567	012	S3G02 Auto Fire @ 6553.5ms

21:37	2581	3568	012	S3G02 Delta Timing @ 6.5ms
21:37	2582	3569	012	S3G02 Delta Timing @ -5.0ms
21:37	2583	3570	012	S3G02 Auto Fire @ 6553.5ms
21:40	2589	3576	012	S1G02 Delta Timing @ 2.5ms
21:40	2590	3577	012	S1G02 Delta Timing @ -2.1ms
21:40	2590	3577	012	S3G02 Delta Timing @ 4.6ms
21:40	2591	3578	012	S2G02 Delta Timing @ 2.3ms
21:40	2591	3578	012	S3G02 Delta Timing @ 5.7ms
21:41	2592	3579	012	S3G02 Delta Timing @ -7.6ms
21:44	2600	3587	012	S1G02 Delta Timing @ -3.0ms
21:47	2609	3596	012	S3G02 AF @ 6553.5
21:48	2610	3597	012	S3G032 AF @ 173.5
21:48	2610	3597	012	S3G02 Delta Timing @ 9.4ms
21:48	2611	3598	012	S3G02 AF @ 111.8ms
21:48	2612	3599	012	S3G02 AF @ 111.8ms
21:49	2613	3600	012	S3G02 AF @ 6553.5ms
21:49	2614	3601	012	S3G02 AF @ 6553.5ms
21:50	2615	3602	012	S3G02 Delta Timing @ 10.1ms
21:50	2616	3603	012	S3G02 Delta Timing @ -7.4
21:51	2618	3605	012	S1G02 Delta Timing @ 2.2ms
21:51	2619	3606	012	S3G02 AF @6553.5ms
21:52	2621	3608	012	S3G02 AF #6553.5ms
21:53	2622	3609	012	S3G02 AF 6553.5ms
21:53	2623	3610	012	S3G02 6553,5
21:54	2625	3612	012	S1G02 Delta Timing @ -3.0
21:54	2626	3613		S3G02 AF @ 6301.5
21:54	2627	3614	012	S3G02 AF 6553.5ms
21:55	2628	3615	012	S1G02 Delta Timing 2.3ms
21:55	2628	3615	012	S3G02 AF 356.8ms
21:55	2629	3616	012	S3G02 AF @ 6553.5ms
21:56	2630	3617	012	S1G02 Delta Timing -2.5ms
21:56	2630	3617	012	S3G02 AF @ 6553.5ms
21:56	2631	3618	012	S3G02 Delta Timing @ 9.8ms
21:56	2632	3619	012	S3G02 AF 6553.5ms
21:56	2632	3619	012	S3G02 Delta Timing @ -11.8ms
21:57	2633	3620	012	S1G02 Delta Timing -2.4ms
21:57	2633	3620	012	S3G02 AF 6553.5ms
21:57	2634	3621	012	S3G02 AF 6553.5ms
21:58	2636	3623	012	S3G02 AF 6553.5ms
21:59	2638	3625	012	S3G02 AF 6553.5ms
21:59	2639	3626	012	S1G02 Delta Timing -2.6ms
21:59	2639	3626	012	S3G02 AF 6553.5ms
22:00	2641	3628	012	S3G02 AF 160.9ms
22:00	2642	3629	012	S3G02 AF 2603.5
22:01	2643	3630	012	S3G02 AF 6553.5ms
22:01	2643	3630	012	S3G02 Delta Timing -7.3
22:01	2644	3631	012	S3G02 Delta Timing @ 11.9ms
22:01	2645	3632	012	S3G02 Delta Timing @ -3.6
22:02	2646	3633	012	S3G01 Delta Timing -3.0ms
22:02	2646	3633	012	S3G02 AF 6553.5ms
22:02	2647	3634	012	S3G02 AF 6553.5ms
22:02	2648	3635	012	S1G02 Delta Timing @ -3.4ms
22:04	2652	3639	012	S3G02 AF 6553.5ms
22:04	2652	3639	012	S3G02 Delta Timing 7.8ms
22:04	2653	3640	012	S1G02 Delta Timing -2.1ms
22:04	2653	3640	012	S3G02 AF 6553.5ms
22:05	2654	3641	012	S3G02 AF 6553.5ms
22:05	2655	3642	012	S3G02 AF 6553.5ms
22:06	2657	3644	012	S3G02 AF 6553.5ms

22:06	2658	3645	012	S1G02 Delta Timing @3.0ms
22:06	2658	3645	012	S3G02 False Auto Fire
22:07	2659	3646	012	S3G02 False Auto Fire
22:07	2660	3647	012	S3G02 False Auto Fire
22:08	2661	3648	012	S3G02 False Auto Fire
22:08	2662	3649	012	S3G02 False Auto Fire
22:08	2663	3650	012	S3G02 False Auto Fire
22:09	2664	3651	012	S3G02 False Auto Fire
22:09	2665	3652	012	S3G02 False Auto Fire
22:12	2671	3658	012	S3G02 Delta Timing @ 6.1ms
22:12	2672	3659	012	S3G02 Delta Timing @ -4.5ms
22:12	2673	3660	012	S3G01 Delta Timing @ -2.4ms
22:14	2676	3663	012	S1G02 Delta Timing @-2.5ms
22:14	2678	3665	012	S1G02 Delta Timing @ 3.0ms
22:15	2680	3667	012	S1G02 Delta Timing @ -3.3
22:16	2681	3668	012	S1G02 Delta Timing @ 2.6ms
22:16	2682	3669	012	S3G02 Delta Timing @ 4.3ms
22:16	2683	3670	012	S3G01 Delta Timing @ -2.3ms
22:18	2688	3675	012	S1G02 Delta Timing @ 2.1ms
22:19	2689	3676	012	S1G02 Delta Timing @ 2.8ms
22:19	2690	3677	012	S1G02 Delta Timing @ -2.6ms
22:21	2695	3682	012	S3G02 Delta Timing @ -7.0ms Tolerance changed from 2.0ms to 3.0ms
22:22	2698	3685	012	S3G02 Delta Timing @8.9ms
22:23	2700	3687	012	S1G02 Delta Timing @-3.3ms
22:25	2705	3692	012	S3G02 Delta Timing @ -2.3
22:26	2708	3695	012	S3G02 Delta Timing @ -4.4ms
22:27	2709	3696	012	S3G02 Delta Timing @ -4.4ms
22:32	2722	3709	012	S1G02 Delta Timing @ 3.7ms
22:33	2725	3712	012	S1G02 Delta Timing @ -3.3 ms
22:36	2732	3719	012	S3G02 Delta Timing @ 9.8ms
22:41	2747	3734	012	S3G02 Delta Timing @ -9.8ms
22:42	2748	3735	012	S3G02 Delta Timing @-12.0
22:43	2752	3739	012	S1G02 Delta Timing @ -3.2ms
22:48	2764	3751	012	S1G02 Delta Timing @ -3.4ms
22:51	2771	3758	012	S3G02 Delta Timing @ -11.0ms
22:51	2772	3759	012	S3G02 Delta Timing @ -11.1ms
22:52	2774	3761	012	S3G01 Delta Timing @ -3.8ms
22:55	2782	3769	012	S3G02 Delta Timing @ -2.5ms
22:56	2784	3771	012	S3G02 Delta Timing @ -4.5ms
22:57	2787	3774	012	S1G02 Delta Timing @ -3.9ms
23:05	2809	3796	012	S3G02 No Fire
23:06	2811	3798	012	S3G02 Delta Timing @ -7.9ms
23:07	2812	3799	012	S3G02 Delta Timing @ 12.5 ms

23:07	2813	3800	012	S3G02 Delta Timing @ -3.5ms
23:12	2826	3813	012	S1G02 Delta Timing @ -3.1ms
23:15	2833	3820	012	S1G02 Delta Timing @ 3.7 ms
23:15	2834	3821	012	S1G02 Delta Timing @ -3.2ms
23:15	2834	3821	012	S3G02 Delta Timing @ -11.7ms
23:15	2835	3822	012	S3G02 Delta Timing @ -3.1ms
23:24	2857	3844	012	S3G02 Delta Timing @ -3.0ms
23:27	2866	3853	012	S1G02 Delta Timing @ -3.6ms
23:49	2921	3908	012	S3G09 No Fire
23:51	2926	3913	012	S3G02 Delta Timing @ 6.7ms
23:51	2927	3914	012	S3G02 Delta Timing @ -5.0ms
23:53	2932	3919	012	S3G02 Delta Timing @ -10.7ms
23:53	2933	3920	012	S3G02 Delta Timing @ -11.1ms
23:54	2934	3921	012	S3G02 Delta Timing @ -6.1ms
23:54	2935	3922	012	S3G02 Delta Timing @ 8.2ms
23:59	2948	3935	012	End OF Day 20120205, File # 2948, LSP of Day 3935
00:00	2949	3936	012	Start OF Day 20120206, File # 2949, FSP of Day 3936
00:06	2965	3952	012	S3G02 Delta Timing @ 0.7ms
00:06	2967	3954	012	S3G02 DT @ -5.0ms
00:07	2968	3955	012	S3G02 No Fire
00:12	2982	3969	012	S1G02 Delta Timing @ -3.6ms
00:19	3000	3987	012	S2G02 DT @ 3.6ms
00:19	3000	3987	012	S3G02 DT @ -3.5ms
00:19	3001	3988	012	S3G02 DT @ 9.1ms
00:20	3002	3989	012	S3G02 DT @ -4.2ms
0021	3005	3992	012	S3G02 DT @ -11.2ms
00:22	3007	3994	012	S3G02 DT @ 5.0ms
00:22	3008	3995	012	S3G02 DT @ -4.4ms
00:23	3010	3997	012	S3G02 No Fire
00:24	3012	3999	012	S2G02 DT @ -3.2ms
00:30	3028	4015	012	S3G02 DT @ -2.6ms
00:30	3028	4015	012	S3G02 DT @ 8.3ms
00:30	3029	4016	012	S3G02 DT @ -3.8ms
00:30	3029	4016	012	S1G02 DT @ -4.4ms
00:32	3034	4021	012	S3G02 DT @ -11.5ms
00:32	3035	4022	012	S3G02 DT @ -3.3ms
00:37	3047	4034	012	S1G02 DT @ -3.1ms
00:39	3053	4040	012	S1G02 DT @ 3.7ms
00:44	3066	4053	012	S3G02 DT @ -11.8ms
00:45	3067	4054	012	S3G02 DT @ -3.4ms
00:51	3082	4069	012	S3G02 DT @ -0.7ms, Birds 5-13 are shallow
00:51	3083	4070	012	S3G02 DT @ 7.0ms
00:52	3084	4071	012	S1G02 DT @ 4.2ms
00:52	3084	4071	012	S3G02 DT @ -4.8ms
00:52	3084	4071	012	End of Reel 012 Last Record 3084
00:53	3085	4072	013	Start of Reel 013 First Record 3085
00:53	3087	4074	013	S3G02 DT @ -12.7ms
00:53	3088	4075	013	S3G02 DT @ -3.3ms
00:55	3092	4079	013	S1G02 DT @ -3.4ms
01:00	3104	4091	013	S3G02 DT @ -8.6ms
01:00	3105	4092	013	S3G02 DT @ -12.6ms
01:04	3115	4102	013	S3G02 DT @ -9.6ms
01:05	3116	4103	013	S3G02 DT @ 4.2ms
01:07	3122	4109	013	S1G02 DT @ -3.5ms
01:09	3126	4113	013	S3G06 Comm Error
01:12	3135	4122	013	EOL LSP 4122 - EEOL Due To Weather pulling the Steamer to the surface

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	14	21	FGSP	3842
SP #	3842	9133	LGSP	9133

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	12m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/06/12	02/07/2012
Time UTC	06:30	18:19
Volume (cu in.)	6380in3	6380in3in3
Wind (kts)	30	23
Sea State (m)	3-5m	2-3m
Water Depth (m)	6511.9m	5200.4m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

General / Line Comments
SOL SP 3842
EOL SP 9133
SOL NOISY CHANNELS
noise from rough sea state
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204MCS03A
Sequence	005
Direction	90.1

Source Parameters	
Total Volume	6380 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
				S1G02, S4G01, and S4G04 OFF and S3G04 Spare
06:40	16	3859	014	S3G02 DT @ -12.1 ms
06:41	17	3860	014	S3G02 DT @ -10.2 ms
06:42	19	3862	014	S3G02 DT @ 6.1 ms
06:42	20	3863	014	S3G02 DT @ -5.2 ms
06:46	27	3870	014	S3G02 DT @ 8.0 ms
06:46	28	3871	014	S3G02 DT @ -4.5 ms
07:08	74	3917	014	Streamer Depth Changed 15m
07:23	104	3947	014	S3G02 DT @ -9.3 ms
07:23	105	3948	014	S3G02 DT @ -12.2 ms
07:24	106	3949	014	S3G02 DT @ -3.4 ms
07:45	151	3994	014	S3G02 No Fire
08:05	193	4036	014	S2G09 Comm Error
08:05	194	4037	014	S2G09 Comm Error
08:17	221	4064	014	S2G09 Comm Error
08:22	230	4073	014	S3G06 Comm Error
08:45	280	4123	014	S2G09 Comm Error
08:46	282	4125	014	S3G06 Comm Error
09:05	321	4164	014	S3G06 Comm Error
09:20	351	4194	014	S3G06 Comm Error
09:33	379	4222	014	S3G06 Comm Error
09:47	409	4252	014	S3G06 Comm Error
09:49	413	4256	014	S3G09 DT @ -4.7 ms
09:50	414	4257	014	S3G09 DT @ 9.8 ms
09:50	415	4258	014	S3G09 DT @ -3.9 ms
09:55	425	4268	014	S3G06 Comm Error
09:57	429	4272	014	S2G09 Comm Error
09:57	430	4273	014	S2G09 Comm Error
10:15	471	4314	014	S2G09 Comm Error
10:26	495	4338	014	S2G09 No Fire
10:26	496	4339	014	S2G09 Comm Error
10:36	517	4360	014	S3G09 DT @ -3.9 ms
10:37	518	4361	014	S3G09 DT @ -3.9 ms
10:37	519	4362	014	S3G09 DT @ -3.9 ms
10:38	520	4363	014	S3G09 DT @ -3.9 ms
10:38	521	4364	014	S3G09 DT @ -3.9 ms
10:40	527	4370	014	S2G09 Comm Error
10:47	542	4385	014	S3G02 No Fire
11:02	574	4417	014	S2G09 Comm Error
11:13	597	4440	014	S3G02 No Fire
11:16	604	4447	014	S1G01 DT @ 11.1 ms
11:17	605	4448	014	S1G01 DT @ -7.6 ms
11:35	646	4489	014	S2G09 No Fire
11:35	646	4489	014	S2G10 No Fire
12:06	709	4555	014	S3G09 No Fire
12:07	711	4557	014	S3G09 DT @ -8.5 ms
12:43	793	4639	014	S3G09 DT @ -6.8 ms

12:44	794	4640	014	S3G09 DT @ 11.7 ms
12:44	795	4641	014	S3G09 DT @ -3.9 ms
12:49	806	4652	014	S23G07 Comm Error
13:13	859	4705	014	S3G10 No Fire
14:02	947	4817	014	S3G08 Comm Error
14:20	988	4858	014	S3G09 Delta Timing @ -7.0ms
14:20	988	4858	014	S3G02 No Fire
14:21	989	4859	014	S3G09 Delta Timing @ 11.5ms
14:21	990	4860	014	S3G09 Delta Timing @ -3.6ms
14:29	1007	4877	014	S3G06 Comm Error
14:38	1028	4898	014	End of Reel 014, LSP 4898, Last File 1028
14:39	1029	4899	015	Start of Reel 015, FSP 4899, First File 1029
14:46	1045	4915	015	S4G09 Comm Error
14:46	1046	4916	015	S1G01 Delta Timing @ -3.6ms
14:46	1047	4917	015	S4G09 Comm Error
15:11	1104	4974	015	S3G06 Comm Error
15:18	1121	4991	015	S3G01 Delta Timing @ 3.3ms
15:18	1122	4992	015	S3G01 Deta Timing @ -3.2ms
15:21	1127	4997	015	S3G01 Deta Timing @ -3.1ms
16:00	1218	5088	015	S1G08 Comm Error
16:00	1218	5088	015	S2G08 Comm Error
16:00	1218	5088	015	S3G08 Comm Error
16:00	1218	5088	015	S4G08 Comm Error
17:01	1362	5232	015	S1G01 No Fire
17:03	1364	5234	015	S3G06 Comm Error
17:19	1401	5271	015	S3G06 Comm Error
17:32	1431	5301	015	S4G09 Comm Error
17:33	1435	5305	015	S4G09 Comm Error
17:33	1435	5305	015	S4G10 Comm Error
17:43	1460	5330	015	S4G09 Comm Error
17:43	1460	5330	015	S4G10 Comm Error
17:48	1472	5342	015	S4G10 Comm Error
17:49	1475	5345	015	S4G09 Comm Error
17:51	1479	5349	015	S4G09 Comm Error
17:53	1485	5355	015	S4G10 Comm Error
17:54	1487	5357	015	S4G06 Comm Error
17:56	1493	5363	015	S4G09 Comm Error
18:00	1503	5373	015	S4G09 Comm Error
18:00	1503	5373	015	S4G10 Comm Error
18:05	1514	5384	015	S4G09 Comm Error
18:06	1518	5388	015	S4G09 Comm Error
18:06	1518	5388	015	S4G10 Comm Error
18:10	1527	5397	015	S4G09 Comm Error
18:11	1529	5399	015	S4G09 Comm Error
18:12	1531	5399	015	S4G09 Comm Error
18:12	1531	5401	015	S4G09 Comm Error
18:12	1531	5401	015	S4G10 Comm Error
18:12	1533	5403	015	S4G09 Comm Error

18:12	1533	5403	015	S4G10 Comm Error
18:13	1544	5404	015	S4G09 Comm Error
18:13	1544	5404	015	S4G10 Comm Error
18:14	1548	5408	015	S4G09 Comm Error
18:14	1548	5408	015	S4G10 Comm Error
18:15	1549	5409	015	S4G09 Comm Error
18:15	1549	5409	015	S4G10 Comm Error
18:16	1552	5412	015	S4G09 Comm Error
18:16	1552	5412	015	S4G10 Comm Error
18:16	1553	5413	015	S4G09 Comm Error
18:16	1553	5413	015	S4G10 Comm Error
18:19	1559	5419	015	S4G09 Comm Error
18:19	1559	5419	015	S4G10 Comm Error
18:20	1561	5421	015	S4G09 Comm Error
18:21	1565	5425	015	S4G09 Comm Error
18:21	1565	5425	015	S4G10 Comm Error
18:22	1566	5426	015	S4G09 Comm Error
18:22	1566	5426	015	S4G10 Comm Error
18:22	1567	5427	015	S4G09 Comm Error
18:22	1567	5427	015	S4G10 Comm Error
18:23	1570	5430	015	S4G09 Comm Error
18:23	1570	5430	015	S4G10 Comm Error
18:27	1581	5441	015	S4G09 Comm Error
18:27	1581	5441	015	S4G10 Comm Error
18:28	1582	5442	015	S3G06 Comm Error
18:31	1590	5450	015	S4G09 Comm Error
18:31	1590	5450	015	S4G10 Comm Error
18:31	1591	5451	015	S4G09 Comm Error
18:32	1592	5452	015	S4G09 Comm Error
18:32	1593	5453	015	S4G10 Comm Error
18:33	1595	5455	015	S3G02 No Fire
18:33	1596	5456	015	S4G09 Comm Error
18:33	1596	5456	015	S4G10 Comm Error
18:34	1599	5459	015	S4G09 Comm Error
18:34	1599	5459	015	S4G10 Comm Error
18:35	1601	5461	015	S4G09 Comm Error
18:35	1601	5461	015	S4G10 Comm Error
18:37	1606	5466	015	S4G09 Comm Error
18:37	1606	5466	015	S4G10 Comm Error
18:37	1608	5468	015	S4G09 Comm Error
18:44	1617	5486	015	S4G09 Comm Error
18:44	1617	5486	015	S4G10 Comm Error
18:45	1619	5488	015	S4G09 Comm Error
18:45	1619	5488	015	S4G10 Comm Error
18:52	1637	5506	015	S4G09 Comm Error
18:52	1637	5506	015	S4G10 Comm Error
18:53	1639	5508	015	S4G09 Comm Error
18:53	1639	5508	015	S4G10 Comm Error

18:54	1640	5509	015	S4G09 Comm Error
18:56	1645	5514	015	S4G09 Comm Error
18:56	1647	5516	015	S4G09 Comm Error
18:56	1647	5516	015	S4G10 Comm Error
18:57	1650	5519	015	S4G09 Comm Error
18:57	1650	5519	015	S4G10 Comm Error
18:58	1652	5521	015	S4G09 Comm Error
18:58	1652	5521	015	S4G10 Comm Error
18:59	1653	5522	015	S4G09 Delta Timing @
18:59	1654	5523	015	S3G09 Delta Timing @-3.3
18:59	1655	5524	015	S4G09 Comm Error
18:59	1655	5524	015	S4G10 Comm Error
19:01	1659	5528	015	S4G09 Comm Error
19:01	1659	5528	015	S4G10 Comm Error
19:01	1660	5529	015	S4G09 Comm Error
19:01	1660	5529	015	S4G10 Comm Error
19:02	1661	5530	015	S3G09 Comm Error
19:02	1662	5531	015	S4G09 Comm Error
19:02	1662	5531	015	S4G09 Comm Error
19:03	1663	5532	015	S4G10 Comm Error
19:03	1663	5532	015	S4G09 Comm Error
19:03	1664	5533	015	S4G10 Comm Error
19:03	1664	5533	015	S4G09 Comm Error
19:04	1666	5535	015	S4G10 Comm Error
19:04	1666	5535	015	S4G09 Comm Error
19:05	1668	5537	015	S4G10 Comm Error
19:07	1672	5541	015	S4G09 Comm Error
19:07	1672	5541	015	S4G10 Comm Error
19:07	1673	5542	015	S4G09 Comm Error
19:07	1673	5542	015	S4G10 Comm Error
19:08	1677	5546	015	S4G09 Comm Error
19:08	1677	5546	015	S4G10 Comm Error
19:10	1681	5550	015	S4G09 Comm Error
19:10	1681	5550	015	S4G10 Comm Error
19:12	1685	5554	015	S4G09 Comm Error
19:15	1692	5561	015	S4G09 Comm Error
19:15	1692	5561	015	S4G10 Comm Error
19:15	1694	5563	015	S4G09 Comm Error
19:16	1695	5564	015	S4G09 Comm Error
19:16	1695	5564	015	S4G10 Comm Error
19:16	1697	5566	015	S4G09 Comm Error
19:16	1697	5566	015	S4G10 Comm Error
19:19	1705	5574	015	S4G09 Comm Error
19:19	1705	5574	015	S4G10 Comm Error
19:20	1706	5575	015	S4G09 Comm Error
19:21	1709	5578	015	S4G09 Comm Error
19:21	1709	5578	015	S4G10 Comm Error
19:22	1711	5580	015	S4G09 Comm Error

19:23	1714	5583	015	S4G09 Comm Error
19:23	1714	5583	015	S4G10 Comm Error
19:23	1715	5584	015	S4G09 Comm Error
19:24	1717	5586	015	S4G09 Comm Error
19:24	1717	5586	015	S4G10 Comm Error
19:24	1718	5587	015	S4G09 Comm Error
19:24	1718	5587	015	S4G10 Comm Error
19:26	1722	5591	015	S4G09 Comm Error
19:26	1722	5591	015	S4G10 Comm Error
19:26	1723	5592	015	S4G09 Comm Error
19:26	1723	5592	015	S4G10 Comm Error
19:28	1727	5596	015	S4G09 Comm Error
19:28	1727	5596	015	S4G10 Comm Error
19:28	1728	5597	015	S4G09 Comm Error
19:29	1729	5598	015	S4G09 Comm Error
19:29	1729	5598	015	S4G10 Comm Error
19:29	1730	5599	015	S4G09 Comm Error
19:29	1730	5599	015	S4G10 Comm Error
19:30	1732	5601	015	S4G09 Comm Error
19:30	1732	5601	015	S4G10 Comm Error
19:30	1733	5602	015	S4G09 Comm Error
19:30	1733	5602	015	S4G10 Comm Error
19:31	1735	5604	015	S4G09 Comm Error
19:31	1735	5604	015	S4G10 Comm Error
19:31	1736	5605	015	S4G09 Comm Error
19:33	1740	5609	015	S4G09 Comm Error
19:33	1740	5609	015	S4G10 Comm Error
19:33	1741	5610	015	S3G02 No Fire
19:33	1741	5610	015	S4G09 Comm Error
19:33	1741	5610	015	S4G10 Comm Error
19:35	1745	5614	015	S3G02 No Fire
19:36	1747	5616	015	S4G09 Comm Error
19:36	1749	5618	015	S4G09 Comm Error
19:36	1749	5618	015	S4G10 Comm Error
19:37	1750	5619	015	S4G09 Comm Error
19:37	1750	5619	015	S4G10 Comm Error
19:38	1753	5622	015	S4G09 Comm Error
19:38	1753	5622	015	S4G10 Comm Error
19:39	1756	5625	015	S4G09 Comm Error
19:39	1756	5625	015	S4G10 Comm Error
19:40	1757	5626	015	S4G09 Comm Error
19:40	1757	5626	015	S4G10 Comm Error
19:40	1758	5627	015	S4G09 Comm Error
19:40	1758	5627	015	S4G10 Comm Error
19:40	1759	5628	015	S4G09 Comm Error
19:40	1759	5628	015	S4G10 Comm Error
19:41	1760	5629	015	S4G09 Comm Error
1941	1760	5629	015	S4G10 Comm Error

19:42	1762	5631	015	S4G09 Comm Error
19:42	1762	5631	015	S4G10 Comm Error
19:43	1765	5634	015	S4G09 Comm Error
19:43	1765	5634	015	S4G10 Comm Error
19:44	1767	5636	015	S4G09 Comm Error
19:44	1767	5636	015	S4G10 Comm Error
19:44	1768	5637	015	S4G09 Comm Error
19:44	1768	5637	015	S4G10 Comm Error
19:46	1774	5643	015	S4G09 Comm Error
19:46	1774	5643	015	S4G10 Comm Error
19:47	1775	5644	015	S4G09 Comm Error
19:47	1775	5644	015	S4G10 Comm Error
19:47	1777	5646	015	S4G09 Comm Error
19:47	1777	5646	015	S4G10 Comm Error
19:48	1778	5647	015	S4G09 Comm Error
19:48	1778	5647	015	S4G10 Comm Error
19:48	1779	5648	015	S4G09 Comm Error
19:48	1779	5648	015	S4G09 Comm Error
19:48	1779	5648	015	S4G10 Comm Error
19:49	1780	5649	015	S4G09 Comm Error
19:49	1780	5649	015	S4G10 Comm Error
19:49	1782	5651	015	S4G09 Comm Error
19:49	1782	5651	015	S4G10 Comm Error
19:50	1783	5652	015	S4G09 Comm Error
19:50	1783	5652	015	S4G10 Comm Error
19:50	1784	5653	015	S4G09 Comm Error
19:51	1785	5654	015	S4G09 Comm Error
19:51	1786	5655	015	S4G10 Comm Error
19:51	1786	5655	015	S4G09 Comm Error
19:51	1787	5656	015	S4G10 Comm Error
19:51	1787	5656	015	S4G09 Comm Error
19:52	1788	5657	015	S4G09 Comm Error
19:52	1788	5657	015	S4G10 Comm Error
19:52	1790	5659	015	S4G09 Comm Error
19:52	1790	5659	015	S4G10 Comm Error
19:53	1791	5960	015	S4G09 Comm Error
19:53	1791	5960	015	S4G10 Comm Error
19:54	1795	5664	015	S4G09 Comm Error
19:54	1795	5664	015	S4G10 Comm Error
19:55	1797	5666	015	S4G09 Comm Error
19:55	1797	5666	015	S4G10 Comm Error
19:56	1798	5667	015	S4G09 Comm Error
19:56	1798	5667	015	S4G10 Comm Error
19:56	1799	5668	015	S4G09 Comm Error
19:56	1800	5669	015	S4G10 Comm Error
19:56	1800	5669	015	S4G09 Comm Error
19:57	1801	5670	015	S4G10 Comm Error
19:57	1802	5671	015	S4G09 Comm Error

19:57	1802	5671	015	S4G09 Comm Error
19:58	1803	5672	015	S4G10 Comm Error
20:00	1809	5678	015	S4G09 Comm Error
20:00	1809	5678	015	S4G10 Comm Error
20:01	1811	5680	015	S4G09 Comm Error
20:01	1811	5680	015	S4G10 Comm Error
20:02	1814	5683	015	S4G09 Comm Error
20:02	1814	5683	015	S4G10 Comm Error
20:02	1815	5684	015	S4G09 Comm Error
20:02	1815	5684	015	S4G10 Comm Error
20:04	1820	5689	015	S4G09 Comm Error
20:04	1820	5689	015	S4G10 Comm Error
20:05	1821	5690	015	S4G09 Comm Error
20:05	1821	5690	015	S4G10 Comm Error
20:05	1822	5691	015	S4G09 Comm Error
20:06	1823	5692	015	S4G09 Comm Error
20:06	1824	5693	015	S4G09 Comm Error
20:06	1825	5694	015	S4G09 Comm Error
20:06	1825	5694	015	S4G10 Comm Error
20:07	1826	5695	015	S4G09 Comm Error
20:07	1827	5696	015	S4G09 Comm Error
20:07	1827	5696	015	S4G10 Comm Error
20:08	1828	5697	015	S4G09 Comm Error
20:08	1828	5697	015	S4G10 Comm Error
20:10	1833	5702	015	S4G09 Comm Error
20:10	1833	5702	015	S4G10 Comm Error
20:11	1835	5704	015	S4G09 Comm Error
20:11	1835	5704	015	S4G10 Comm Error
20:12	1838	5707	015	S4G09 Comm Error
20:12	1838	5707	015	S4G10 Comm Error
20:12	1839	5708	015	S4G09 Comm Error
20:12	1839	5708	015	S4G10 Comm Error
20:12	1840	5709	015	S4G09 Comm Error
20:12	1840	5709	015	S4G10 Comm Error
20:13	1841	5710	015	S4G09 Comm Error
20:13	1841	5710	015	S4G10 Comm Error
20:15	1846	5715	015	S4G09 Comm Error
20:15	1846	5715	015	S4G10 Comm Error
20:16	1849	5718	015	S4G09 Comm Error
20:16	1849	5718	015	S4G10 Comm Error
20:17	1851	5720	015	S4G09 Comm Error
20:18	1853	5722	015	S4G09 Comm Error
20:18	1853	5722	015	S4G10 Comm Error
20:18	1854	5723	015	S4G09 Comm Error
20:18	1854	5723	015	S4G10 Comm Error
20:19	1855	5724	015	S4G09 Comm Error
20:19	1855	5724	015	S4G10 Comm Error
20:19	1856	5725	015	S4G09 Comm Error

20:19	1856	5725	015	S4G10 Comm Error
20:19	1857	5726	015	S4G09 Comm Error
20:19	1857	5726	015	S4G10 Comm Error
20:21	1860	5729	015	S4G09 Comm Error
20:21	1860	5729	015	S4G10 Comm Error
20:22	1863	5732	015	S4G09 Comm Error
20:22	1864	5733	015	S4G09 Comm Error
20:22	1864	5733	015	S4G10 Comm Error
20:23	1866	5735	015	S4G09 Comm Error
20:23	1866	5735	015	S4G10 Comm Error
20:23	1867	5736	015	S4G09 Comm Error
20:23	1867	5736	015	S4G10 Comm Error
20:25	1870	5739	015	S4G09 Comm Error
20:25	1870	5739	015	S4G10 Comm Error
20:25	1871	5740	015	S4G09 Comm Error
20:25	1871	5740	015	S4G10 Comm Error
20:25	1872	5741	015	S4G09 Comm Error
20:25	1872	5741	015	S4G10 Comm Error
20:27	1875	5744	015	S4G09 Comm Error
20:27	1875	5744	015	S4G10 Comm Error
20:27	1877	5746	015	S4G09 Comm Error
20:27	1877	5746	015	S4G10 Comm Error
20:28	1878	5747	015	S4G09 Comm Error
20:28	1878	5747	015	S4G10 Comm Error
20:28	1879	5748	015	S4G09 Comm Error
20:28	1879	5748	015	S4G10 Comm Error
20:28	1880	5749	015	S4G09 Comm Error
20:28	1880	5749	015	S4G10 Comm Error
20:30	1884	5753	015	S4G09 Comm Error
20:31	1887	5756	015	S4G09 Comm Error
20:31	1887	5756	015	S4G10 Comm Error
20:33	1892	5761	015	S4G09 Comm Error
20:33	1892	5761	015	S4G10 Comm Error
20:34	1893	5762	015	S4G09 Comm Error
20:34	1893	5762	015	S4G10 Comm Error
20:34	1894	5763	015	S4G09 Comm Error
20:34	1894	5763	015	S4G10 Comm Error
20:35	1895	5764	015	S4G09 Comm Error
20:35	1895	5764	015	S4G10 Comm Error
20:35	1896	5765	015	S4G09 Comm Error
20:35	1896	5765	015	S4G10 Comm Error
20:35	1897	5766	015	S4G09 Comm Error
20:35	1897	5766	015	S4G10 Comm Error
20:36	1900	5769	015	S4G09 Comm Error
20:36	1900	5769	015	S4G10 Comm Error
20:37	1901	5770	015	S4G09 Comm Error
20:37	1901	5770	015	S4G10 Comm Error
20:37	1902	5771	015	S4G09 Comm Error

20:37	1902	5771	015	S4G10 Comm Error
20:38	1903	5772	015	S4G09 Comm Error
20:38	1903	5773	015	S4G09 Comm Error
20:38	1904	5773	015	S4G10 Comm Error
20:38	1905	5774	015	S4G09 Comm Error
20:38	1905	5774	015	S4G10 Comm Error
20:40	1908	5777	015	S4G09 Comm Error
20:40	1910	5779	015	S4G09 Comm Error
20:40	1910	5779	015	S4G10 Comm Error
20:41	1911	5780	015	S4G09 Comm Error
20:41	1911	5780	015	S4G10 Comm Error
20:41	1913	5782	015	S4G09 Comm Error
20:41	1913	5782	015	S4G10 Comm Error
20:42	1914	5783	015	S4G09 Comm Error
20:42	1914	5783	015	S4G10 Comm Error
20:43	1916	5785	015	S4G09 Comm Error
20:46	1924	5793	015	S4G09 Comm Error
20:46	1924	5793	015	S4G10 Comm Error
20:47	1925	5794	015	S4G09 Comm Error
20:47	1925	5794	015	S4G10 Comm Error
20:47	1926	5795	015	S4G09 Comm Error
20:47	1926	5795	015	S4G10 Comm Error
20:47	1927	5796	015	S4G09 Comm Error
20:47	1927	5796	015	S4G10 Comm Error
20:48	1928	5797	015	S4G09 Comm Error
20:48	1928	5797	015	S4G10 Comm Error
20:48	1930	5799	015	S4G09 Comm Error
20:50	1933	5802	015	S4G09 Comm Error
20:50	1933	5802	015	S4G10 Comm Error
20:50	1934	5803	015	S4G09 Comm Error
20:50	1934	5803	015	S4G10 Comm Error
20:51	1935	5804	015	S4G09 No Fire
20:51	1935	5804	015	S4G10 No Fire
20:51	1936	5805	015	S4G10 No Fire
20:51	1937	5806	015	S4G09 Comm Error
20:51	1937	5806	015	S4G10 Comm Error
20:52	1938	5807	015	S4G09 Comm Error
20:52	1938	5807	015	S4G10 Comm Error
20:52	1939	5808	015	S4G09 Comm Error
20:52	1939	5808	015	S4G10 Comm Error
20:52	1940	5809	015	S4G09 Comm Error
20:52	1940	5809	015	S4G10 Comm Error
20:53	1941	5810	015	S4G09 Comm Error
20:53	1942	5811	015	S4G09 Comm Error
21:03	1968	5837	015	S4G09 No Fire
21:33	2042	5911	015	S3G09 Delta Timing Error @ 9.2ms
21:34	2043	5912	015	S3G09 Delta Timing Error @ 12.5ms
21:39	2056	5925	015	End of Tape 015 LSP 5925, Last File 2056

21:40	2057	5926	016	Start of Tape 016, FSP 5926, First File 2057
21:58	2103	5972	016	S1G09 Comm Error
22:03	2116	5985	016	S3G09 Comm Error
22:03	2117	5986	016	S1G10 Comm Error
22:03	2117	5986	016	S2G10 Comm Error
22:03	2117	5986	016	S3G10 Comm Error
22:03	2117	5986	016	S4G10 Comm Error
22:03	2117	5986	016	S4G10 Comm Error
22:03	2117	5986	016	S4G09 Comm Error
22:04	2119	5988	016	S1G08 Comm Error
22:04	2119	5988	016	S2G08 Comm Error
22:04	2118	5987	016	S1G01 Delta Timing Error @ 8.2ms
22:04	2119	5988	016	S1G01 Delta Timing @ -7.3ms
22:31	2185	6054	016	S3G09 No Fire
23:59	2399	6268	016	End of Day 20120206 LSP 6268, Last File # 2399
00:00	2400	6269	016	Start of Day 20120207, FSP 6269, First File # 2400
01:21	2598	6467	016	S1G01 Delta Timing @ 11.2ms
01:21	2597	6466	016	S1G01 No Fire
01:21	2597	6466	016	S1G09 Comm Error
01:21	2597	6466	016	S2G09 Comm Error
01:21	2597	6466	016	S3G09 Comm Error
01:22	2599	6468	016	S1G01 Delta Timing Error @ -3.5
01:22	2599	6468	016	S1G01 Delta Timing Error @ -5.3
01:25	2608	6477	016	S3G06 Comm Error
02:11	2724	6593	016	S3G09 Comm Error
03:09	2875	6744	016	S3G06 Comm Error
04:29	3082	6951	016	S3G09 Delta Timing Error @ -4.0 ms
04:29	3083	6952	016	S3G09 Delta Timing Error @ 3.1 ms
04:31	3085	6954	017	Tape Change
04:40	3110	6979	017	S2G09 Comm Error
04:48	3131	7000	017	S2G09 Comm Error
04:53	3145	7014	017	S2G09 Comm Error
04:54	3148	7017	017	S2G09 Comm Error
04:59	3160	7029	017	S2G09 Comm Error
05:28	3237	7106	017	S2G10 Comm Error
05:38	3262	7131	017	S2G09 Comm Error
05:38	3263	7132	017	S2G10 Comm Error
05:38	3263	7132	017	S2G09 Comm Error
05:39	3264	7133	017	S2G09 Comm Error
05:43	3276	7145	017	S2G09 Comm Error
05:53	3300	7169	017	S2G09 Comm Error
05:54	3303	7172	017	S2G10 Comm Error
06:00	3319	7188	017	S3G06 Comm Error
06:01	3321	7190	017	S2G09 Comm Error
06:02	3325	7194	017	S2G09 Comm Error
06:47	3442	7311	017	S2G09 Comm Error
06:47	3442	7311	017	S2G10 Comm Error
06:52	3453	7322	017	S2G09 Comm Error

07:25	3537	7406	017	S2G09 Comm Error
07:29	3549	7418	017	S2G09 Comm Error
07:36	3567	7436	017	S2G10 Comm Error
07:46	3590	7459	017	S2G10 Comm Error
07:51	3605	7474	017	S2G09 Comm Error
07:53	3610	7479	017	S2G09 Comm Error
07:53	3610	7479	017	S2G10 Comm Error
08:06	3644	7513	017	S2G09 Delta Timing Error 12.5ms
08:06	3645	7514	017	S2G09 Delta Timing Error 10.1ms
08:15	3668	7537	017	S2G10 Comm Error
09:55	3906	7775	017	Telemetry errors begin on streamers (~ 6km recording)
09:52	3925	7794	017	Streamer powered down End of tape
09:56	1	7806	018	Streamer powered up New tape
10:12	46	7851	018	S3G09 Delta Timing Error @ -9.2 ms
10:12	47	7852	018	S3G09 Delta Timing Error @ -12.7 ms
10:46	135	7940	018	S3G09 Comm Error
11:34	262	8067	018	S2G09 Comm Error
11:40	277	8082	018	S2G09 Comm Error
12:58	478	8283	018	S3G10 Comm Error
13:08	503	8308	018	S3G09 No Fire
13:24	545	8350	018	S2G09 Comm Error
13:54	622	8427	018	S3G06 Comm Error
14:01	640	8445	018	S2G09 Comm Error
14:01	640	8445	018	S3G10 Comm Error
14:19	690	8495	018	S2G09 Comm Error
14:22	696	8501	018	S3G06 Comm Error
15:10	823	8628	018	S2G09 Comm Error
16:05	969	8774	018	S3G06 Comm Error
16:30	1028	8833	018	Last File on 018
16:30	1029	8834	019	First File on Tape 019
16:35	1045	8850	019	Cable lost comms with last 2K of cable
16:40	1056	8866	019	Last File on Tape 019
16:40	1056	8866	019	Last Good 6000 meters
16:40	1056	8866	019	Cable powered Down Last File on Tape 019
16:43	1	8875	020	Cable Powed Up 8K Streamer
16:43	1	8875	020	First File on Tape 020
17:07	63	8937	020	S3G09 Comm Error
17:47	174	9048	020	Lost Last 2K of Streamer
17:49	178	9052	020	Powered Off the Cable
17:49	178	9052	020	End ofTape 020
17:51				Powered up Cable
17:52	1	9060	021	Start of Tape 021, FSP 9060, First File 1
18:19	74	9133	021	End of Line

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	022	026	FGSP	987
SP #	987	2729	LGSP	2729

Line	MGL1204MCS004
Sequence	006
Direction	309

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	15.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6380 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	2ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/07/12	02/08/12
Time UTC	19:23	06:44
Volume (cu in.)	6380in3	6380in3
Wind (kts)	ESE 20-25	7.6
Sea State (m)	3-5m	2-3m
Water Depth (m)	5160m	5454.8m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 987 First File 1
EOL SP 2729
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	027	029	FGSP	966
SP #	966	1125	LGSP	1118

Line	MGL1204MCS005
Sequence	007
Direction	190.6

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	11m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	2ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/08/12	02/08/12
Time UTC	07:27	08:26
Volume (cu in.)	6380in3	6380in3
Wind (kts)	16	16
Sea State (m)	2-3m	2-3m
Water Depth (m)	5440m	5470m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 966
EOL SP 1125
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	030	036	FGSP	1134
SP #	1134	5799	LGSP	5799

Line	MGL1204MCS005A
Sequence	008
Direction	190.6

Streamer Parameters				
	1	2	3	4
Length (m)	6000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	480			
Streamer Depth (m)	11m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	2ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/08/12	02/09/12
Time UTC	08:29	12:36
Volume (cu in.)	6380in3	6060in3
Wind (kts)	16	10
Sea State (m)	2-3m	2-3m
Water Depth (m)	5472.7m	5034.7m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1134
EOL SP 5799
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
				S1G02, S4G01, S4G04 off S3G03 Spare
09:12	114	1247	030	S3G07 Comm Error
09:20	137	1270	030	S2G09 Comm Error
10:12	275	1408	030	S3G03 Comm Error (spare)
10:42	357	1490	030	S2G09 Comm Error
12:38	682	1815	030	End of Tape 030
12:39	683	1816	031	New Tape
13:04	754	1887	031	S2G10 Comm Error
14:12	916	2063	031	S4G09 Comm Error
14:41	995	2142	031	S4G09 Comm Error
14:47	1010	2157	031	S4G09 Comm Error
14:47	1010	2157	031	S4G10 Comm Error
14:47	1012	2159	031	S4G09 Comm Error
14:47	1012	2159	031	S4G10 Comm Error
14:50	1020	2167	031	S4G09 Comm Error
14:50	1020	2167	031	S4G10 Comm Error
15:04	1058	2205	031	S4G09 Comm Error
15:04	1058	2205	031	S4G10 Comm Error
15:10	1072	2219	031	S4G09 Comm Error
15:10	1072	2219	031	S4G10 Comm Error
15:16	1089	2236	031	S4G09 Comm Error
15:24	1111	2258	031	S4G09 Comm Error
15:24	1111	2258	031	S4G10 Comm Error
15:35	1140	2287	031	S4G09 Comm Error
15:39	1149	2296	031	S4G09 Comm Error
15:39	1149	2296	031	S4G10 Comm Error
16:35	1290	2445	031	NCC Spectra Lockup
16:38	1297	2452	031	Back up
17:04	1364	2519	031	End of Tape 031
17:04	1365	2520	032	Start of Tape 032
17:08	1376	2531	032	S3G02 No Fire
17:10	1383	2538	032	S3G02 No Fire
17:10	1384	2539	032	S3G02 No Fire
17:11	1385	2540	032	S3G02 No Fire
17:11	1386	2541	032	S3G02 No Fire
17:19	1407	2562	032	S3G02 No Fire
17:19	1409	2564	032	S3G02 No Fire
17:20	1410	2565	032	S3G02 No Fire
17:21	1413	2568	032	S3G02 No Fire
17:22	1418	2573	032	S3G02 No Fire
17:23	1419	2574	032	S3G02 OFF, S3G03 ON, New Volume 6060in ³
17:49	1493	2648	032	S4G09 Comm Error
17:49	1493	2648	032	S4G10 Comm Error
17:59	1522	2677	032	S4G09 Comm Error
19:09	1714	2869	032	S3G09 Timing Error -4.0ms
19:09	1715	2870	032	S3G09 Timing Error 3.6ms
21:10	2046	3201	032	End of Tape 032

21:10	2047	3202	033	Start of Tape 033
23:59	2496	3651	033	End of Day 039
00:00	2497	3652	033	Start of Day 040
01:26	2728	3883	033	End of Tape 033
01:26	2729	3884	034	Start of Tape 034
01:43	2777	3932	034	S2G09 Comm Error
02:01	2828	3983	034	S4G09 Comm Error
02:01	2828	3983	034	S4G10 Comm Error
02:35	2929	4084	034	S4G09 Comm Error
02:35	2929	4084	034	S4G10 Comm Error
02:36	2930	4085	034	S4G09 No Fire
02:36	2930	4085	034	S4G10 No Fire
02:59	2999	4154	034	S3G09 Delta Timing Error @ -8.2 ms
03:00	3000	4155	034	S3G09 Delta Timing Error @ 12.4 ms
03:00	3001	4156	034	S3G09 Delta Timing Error @ -3.2 ms
03:02	3007	4162	034	S3G09 No Fire
03:29	3088	4243	034	S3G09 Delta Timing Error @ -5.2 ms
03:30	3089	4244	034	S3G09 Delta Timing Error @ 4.4 ms
03:32	3096	4251	034	S3G09 Delta Timing Error @ -7.9 ms
03:32	3097	4252	034	S3G09 Delta Timing Error @ 12.5 ms
03:33	3098	4253	034	S3G09 Delta Timing Error @ -3.4 ms
03:36	3108	4263	034	S3G09 Delta Timing Error @ -6.6 ms
03:36	3109	4264	034	S3G09 Delta Timing Error @ 11.8 ms
03:37	3110	4265	034	S3G09 Delta Timing Error @ -3.8 ms
03:39	3117	4272	034	S3G09 No Fire
03:50	3149	4304	034	S4G09 Comm Error
03:50	3149	4304	034	S4G10 Comm Error
04:37	3284	4439	034	S3G09 Delta Timing Error @ -8.1 ms
04:37	3285	4440	034	S3G09 Delta Timing Error @ 12.3 ms
04:37	3286	4441	034	S3G09 Delta Timing Error @ -3.4 ms
04:56	3339	4494	034	S3G09 Delta Timing Error @ 12.2 ms
04:56	3340	4495	034	S3G09 Delta Timing Error @ -9.1 ms
05:14	3390	4545	034	S3G09 No Fire
05:22	3410	4565	035	New Tape
06:09	3545	4700	035	S3G09 Delta Timing Error @ 8.0 ms
06:09	3546	4701	035	S3G09 Delta Timing Error @ -6.1 ms
09:24	4092	5247	036	New Tape
09:42	4142	5297	036	S4G09 Comm Error
09:42	4142	5297	036	S4G10 Comm Error
09:42	4143	5298	036	S4G09 No Fire
09:42	4143	5298	036	S4G10 No Fire
10:10	4119	5274	036	S4G09 Comm Error
10:10	4119	5274	036	S4G10 Comm Error
10:48	4328	5483	036	S4G10 Comm Error
11:03	4370	5525	036	S3G09 Delta Timing Error @ -4.2 ms
11:03	4371	5526	036	S3G09 Delta Timing Error @ 3.1 ms
11:08	4386	5541	036	S4G09 Comm Error
11:08	4386	5541	036	S4G10 Comm Error
11:57	4529	5684	036	S3G09 No Fire
12:01	4542	5697	036	S3G09 Delta Timing Error @ -8.4 ms
12:01	4543	5698	036	S3G09 Delta Timing Error @ 7.6 ms
12:02	4546	5701	036	S4G09 Comm Error

12:02	4546	5701	036	S4G10 Comm Error
12:12	4573	5728	036	S3G09 Delta Timing Error @ 8.4 ms
12:12	4574	5729	036	S3G09 Delta Timing Error @ 10.2 ms
12:12	4575	5730	036	S3G09 Delta Timing Error @ 6.0 ms
12:36	4644	5799	036	EOL LGSP
				S1G02, S3G02, S4G01, S1G04 off

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	037	038	FGSP	1018
SP #	1018	2721	LGSP	2721

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/09/12	02/10/12
Time UTC	15:03	01:46
Volume (cu in.)	6560in³in3	6560in3
Wind (kts)	NE 10	ENE17
Sea State (m)	1-3m	1-3m
Water Depth (m)	5100m	5810m

General / Line Comments
SOL SP 1018
EOL SP 2721
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204MCS006
Sequence	009
Direction	67.3

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	039	042	FGSP	928
SP #	928	4416	LGSP	4416

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/10/12	02/11/12
Time UTC	02:49	23:13
Volume (cu in.)	6560in3	6560in3
Wind (kts)	9	ENE 15
Sea State (m)	1-3m	1-3m
Water Depth (m)	5835m	6300.2m

General / Line Comments
SOL SP 928
EOL SP 4416
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204MCS007
Sequence	010
Direction	279.9

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	15
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	043	047	FGSP	4420
SP #	4420	8530	LGSP	8530

Streamer Parameters				
	1	2	3	4
Length (m)	8000			
Auxiliaries				
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	152.7			
Group Interval: (m)	12.5			
Number of channels	636			
Streamer Depth (m)	9m			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/11/2012	02/12/2012
Time UTC	23:14	00:25
Volume (cu in.)	6560in3	6560in3
Wind (kts)	ENE 15	ENE
Sea State (m)	1-3m	2-4m
Water Depth (m)	6315.2m	2158.8m

General / Line Comments
SOL SP 4420
EOL SP 8530
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204_MCS_007A
Sequence	011
Direction	279.9

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	19
Total recording delay	0
Sample Rate	4ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	103Hz/276 DB
Tape Format	SEGD rev. 2

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	997
SP #	997	1754	LGSP	1754

Line	MGL1204OBS01
Sequence	012
Direction	98.9

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	0
Sample Rate	2ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	206Hz/276 DB
Tape Format	SEGD rev. 2

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/12/12	02/14/12
Time UTC	10:46	09:56
Volume (cu in.)	6600in3	6600in3
Wind (kts)	27	27
Sea State (m)	1-3m	1-3m
Water Depth (m)	2818m	5938m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 997
EOL SP 1754
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	SP	Description
		S1G05, S2G05, S3G05, S4G05 Spares
10:46	997	SOL MGL1204_OBS_S012_001
11:01	1001	S2G09, S2G10 Comm Error
11:09	1003	S2G09 Comm Error
11:46	1013	S2G09 Comm Error
12:09	1019	S2G09 Comm Error
15:11	1068	S3G03 Comm Error
15:14	1069	S3G06 Comm Error
19:25	1137	S2G09 Comm Error
22:12	1183	S3G04 No Fire
22:16	1184	S3G04 No Fire
22:19	1185	S3G04 No Fire
22:19	1186	S3G04 Off D/T No Fire S3G05 On
22:19	11:86	S2G09 Comm Error Gun Did Shoot
23:56	1212	Last shot of day
00:00	1213	First shot of day
01:19	1235	S2G09 Comm Error Gun Did Shoot
05:07	1297	S3G10 Comm Error
12:06	1408	S2G10 Comm Error
18:36	1510	S3G09 -2.1ms Delta Timing Error
18:39	1511	S3G09 8.9ms Delta Timing Error
18:43	1512	S3G09 8.9ms Delta Timing Error
18:47	1513	S3G09 -4.1ms Delta Timing Error
19:40	1527	S3G09 Autofire @ 155.0ms
19:51	1530	S3G09 Autofire @ 602.5ms
20:55	1547	S3G09 Delta Timing @ 6.7 ms
20:59	1548	S3G09 Delta Timing @ -5.3 ms
23:33	1586	Shot the guns one time on inernal cycle ~130 seconds since previous shot. Had issue with Main Node.
23:35	1590	Normal shot took place on external trigger.
23:42	1592	S3G09 Comm Error
23:46	1593	S3G09 Delta Error -4.4 ms
23:57	1596	Last Shot of Day
00:00	1597	First Shot of Day
00:00	1597	S3G09 Delta Timing 6.8 ms
01:32	1622	S3G09 Comm Error
03:02	1646	S3G09 Delta Timing Error @ 6.6 ms
03:06	1647	S3G09 Delta Timing Error @ -4.6 ms
03:11	1648	S3G09 Delta Timing Error @ -4.8 ms
03:34	1654	S3G09 Delta Timing Error @ 6.0 ms
03:38	1655	S3G09 Delta Timing Error @ -4.4 ms
03:46	1657	S3G09 Delta Timing Error @ 5.8 ms
03:50	1658	S3G09 Delta Timing Error @ -4.4 ms
05:15	1680	S3G09 Delta Timing Error @ 6.4 ms
05:18	1681	S3G09 Delta Timing Error @ -5.1 ms
05:30	1684	S3G09 Delta Timing Error @ 6.0 ms
05:34	1685	S3G09 Delta Timing Error @ -4.6 ms
05:37	1686	S3G09 Delta Timing Error @ 9.7 ms
05:41	1687	S3G09 Delta Timing Error @ -8.3 ms
05:48	1689	S3G09 Delta Timing Error @ 5.6 ms

05:52	1690	S3G09 Delta Timing Error @ -4.4 ms
06:29	1700	S3G09 Delta Timing Error @ 7.0 ms
06:33	1701	S3G09 Delta Timing Error @ -5.0 ms
06:44	1704	S3G09 Comm Error
06:51	1706	S3G09 Delta Timing Error @ 6.9 ms
06:55	1707	S3G09 Delta Timing Error @ -5.0 ms
07:40	1719	S3G09 Delta Timing Error @ 6.7 ms
07:44	1720	S3G09 Delta Timing Error @ -4.8 ms
08:07	1726	S3G09 Delta Timing Error @ 5.9 ms
08:11	1727	S3G09 Delta Timing Error @ -4.4 ms
08:42	1735	S3G09 Comm Error
09:17	1744	S3G09 Delta Timing Error @ 5.0 ms
09:21	1745	S3G09 Delta Timing Error @ -3.6 ms
09:56	1754	EOL S3G04 OFF and S1G05, S2G05, S4G05 Spares

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	N/A	N/A	FGSP	993
SP #	993	1150	LGSP	1150

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/14/12	02/14/02
Time UTC	11:10	20:43
Volume (cu in.)	6600in3	6600in3
Wind (kts)	19	ENE 17
Sea State (m)	2-3m	2-3m
Water Depth (m)	5973m	5268.9m

General / Line Comments
SOL SP 993
EOL SP 1150
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204OBS02
Sequence	013
Direction	279.9

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	0
Sample Rate	2ms
Polarity	N/A
Low-Cut	2Hz /12DB
Hi-Cut	206Hz/276 DB
Tape Format	SEGD rev. 2

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1002
SP #	1002	1101	LGSP	1101

Line	MGL1204OBS03
Sequence	014
Direction	190.5

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	n/a
Total recording delay	n/a
Sample Rate	n/a
Polarity	n/a
Low-Cut	n/a
Hi-Cut	n/a
Tape Format	n/a

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/14/12	02/15/12
Time UTC	20:46	02:50
Volume (cu in.)	6600in3	6600in3
Wind (kts)	ENE 17	E17
Sea State (m)	2-3m	2-3m
Water Depth (m)	5248.9m	5167m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments	Gun Controller shot count did not advance with each shot. Shot counts in record came from Nav.screen.
SOL SP 1002	
EOL SP 1101	
SOL NOISY CHANNELS	
EOL NOISY CHANNELS	

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	N/A	N/A	FGSP	989
SP #	989	1481	LGSP	1481

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/15/12	02/16/12
Time UTC	04:51	10:38
Volume (cu in.)	6600in3	6520in3
Wind (kts)	21	10
Sea State (m)	2-3m	1-3m
Water Depth (m)	5200m	5556m

General / Line Comments
SOL SP 989
EOL SP 1481
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204OBS04
Sequence	015
Direction	10.4

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	SP	Description
04:51	989	SOL S1G05, S2G05, S3G05, S4G05 spares
06:47	1021	S3G09 Delta Timing @ -8.3 ms
06:51	1022	S3G09 Delta Timing @ -12.8 ms
06:54	1023	S3G09 Delta Timing @ -3.5 ms
06:58	1024	S3G09 Delta Timing @ -8.8 ms
07:01	1025	S3G09 Delta Timing @ 12.2 ms
07:05	1026	S3G09 Delta Timing @ 12.4 ms
07:09	1027	S3G09 Delta Timing @ 3.5 ms
07:51	1038	S3G09 Delta Timing @ -5.7 ms
07:55	1039	S3G09 Delta Timing @ 10.5 ms
07:58	1040	S3G09 Delta Timing @ -3.6 ms
08:46	1053	S3G09 Delta Timing @ -3.3 ms
08:50	1054	S3G09 Delta Timing @ 8.8 ms
08:53	1055	S3G09 Delta Timing @ -4.1 ms
09:33	1066	S3G09 Delta Timing @ 9.0 ms
09:37	1067	S3G09 Delta Timing @ -6.9 ms
09:44	1069	S3G09 Delta Timing @ 8.3 ms
09:48	1070	S3G09 Delta Timing @ -6.6 ms
10:06	1075	S3G09 Delta Timing @ -2.1 ms
10:10	1076	S3G09 Delta Timing @ 8.8 ms
10:14	1077	S3G09 Delta Timing @ -4.7 ms
10:21	1079	S3G09 Delta Timing @ 8.6 ms
10:25	1080	S3G09 Delta Timing @ -6.6 ms
10:54	1088	S3G09 Delta Timing @ 9.2 ms
10:58	1089	S3G09 Delta Timing @ -6.7 ms
11:09	1092	S2G09 Comm Error
11:09	1092	S2G10 Comm Error
11:12	1093	S3G09 Delta Timing @ 8.5 ms
11:16	1094	S3G09 Delta Timing @ -6.7 ms
11:34	1099	S3G09 Delta Timing @ 8.7 ms
11:38	1100	S3G09 Delta Timing @ -6.8 ms
11:52	1104	S3G09 Delta Timing @ 8.9 ms
11:56	1105	S2G09 Comm Error
11:56	1105	S2G10 Comm Error
11:56	1105	S3G09 Delta Timing @ -6.7 ms
12:07	1108	S3G09 Delta Timing @ 9.0 ms
12:10	1109	S3G09 Delta Timing @ -6.6 ms
12:14	1110	S3G09 Delta Timing @ 8.5 ms
12:17	1111	S3G09 Delta Timing @ -8.1 ms
12:14	1114	S2G09 Comm Error
12:14	1114	S2G10 Comm Error
12:35	1116	S2G09 Comm Error
12:39	1117	S3G09 Delta Timing @ 8.4 ms
12:43	1118	S3G09 Delta Timing @ -6.2 ms
12:50	1120	S3G09 Delta Timing @ -4.0 ms
12:54	1121	S3G09 Delta Timing @ -3.7 ms
12:58	1122	S2G09 Comm Error
12:58	1122	S3G09 Delta Timing @ 11.9 ms
13:01	1123	S3G09 Delta Timing @ 4.5 ms

13:05	1124	S3G09 Delta Timing @ 8.4 ms
13:08	1125	S3G09 Delta Timing @ 6.2 ms
13:23	1129	S3G09 Delta Timing @ 9.6 ms
13:26	1130	S2G09 Comm Error
13:26	1130	S3G09 Delta Timing @ -7.2 ms
13:30	1131	S3G09 Delta Timing @ -2.4 ms
13:33	1132	S2G09 Comm Error
13:33	1132	S3G09 No Fire
13:37	1133	S3G09 Delta Timing @ -7.2 ms
13:41	1134	S3G09 Delta Timing @ -11.2 ms
13:48	1136	S3G09 Delta Timing @ 6.0 ms
13:52	1137	S3G09 Delta Timing @ 9.8 ms
13:56	1138	S3G09 Delta Timing @ 9.0 ms
13:59	1139	S3G09 Delta Timing @ -4.4 ms
14:14	1143	S3G09 Delta Timing @ 11.9 ms
14:41	1150	S3G09 Delta Timing @ 9.5 ms
14:48	1152	S3G09 Delta Timing @ 12.5 ms
14:51	1153	S3G09 Delta Timing @ 8.7 ms
15:10	1158	S2G09 Comm Error
15:10	1158	S2G10 Comm Error
15:28	1163	S2G09 Comm Error
15:35	1165	S3G09 Delta Timing -7.3 ms
15:56	1171	S3G09 Delta Timing @ -3.1 ms
16:07	1174	S3G09 Delta Timing @ 5.6ms
16:36	1182	S3G09 Delta Timing -10.3 ms
16:39	1183	S3G09 Delta Timing @ 4.0 ms
16:57	1188	S3G09 Delta Timing @ 8.7 ms
17:26	1196	S3G09 Delta Timing @ -5.5 ms
17:51	1203	S3G09 Delta Timing @ -3.0 ms
19:14	1226	S2G06 Comm Error
19:14	1226	S2G07 Comm Error
19:14	1226	S2G08 Comm Error
19:14	1226	S2G09 Comm Error
19:14	1226	S2G10 Comm Error
19:21	1228	S3G08 Delta Timing @ -11.8ms
19:54	1237	S2G09 Comm Error
19:54	1237	S2G10 Comm Error
20:02	1239	S2G09 Comm Error
20:02	1239	S2G10 Comm Error
20:13	1242	S3G08 Comm Error
20:49	1252	S2G06 Comm Error
21:47	1268	S2G06 Comm Error
22:28	1279	S2G09 Comm Error
22:28	1279	S2G10 Comm Error
22:31	1280	S2G09 Comm Error
22:31	1280	S2G10 Comm Error
22:35	1281	S2G09 Comm Error
22:35	1281	S2G10 Comm Error
23:11	1291	S2G07 Comm Error
23:15	1292	S2G09 Comm Error
23:15	1292	S2G10 Comm Error

23:22	1294	S2G09 Comm Error
23:22	1294	S2G10 Comm Error
23:26	1295	S2G09 Comm Error
23:26	1295	S2G10 Comm Error
23:30	1296	S2G09 Comm Error
23:30	1296	S2G10 Comm Error
23:33	1297	S2G09 Comm Error
23:33	1297	S2G10 Comm Error
23:27	1298	S2G09 & S2G10 Disabled - S1G5 and S2G5 Enabled new Source Volume 6520
23:27	1298	Mutiple Internal Shots Taken to Sync in S1G5 and S2G5.
23:59	1304	Last sp of day
00:02	1305	S2G07 Comm Error
00:13	1308	S3G09 Delta timing @ -3.3ms
01:04	1322	S2G06 Comm Error
01:04	1322	S2G07 Comm Error
01:04	1322	S2G08 Comm Error
01:25	1328	S2G06 Comm Error
01:44	1333	S2G06 Comm Error
01:44	1333	S2G07 Comm Error
01:44	1333	S2G08 Comm Error
02:02	1338	S2G07 Comm Error
02:02	1338	S2G08 Comm Error
02:05	1339	S2G09 No Fire
02:20	1343	S2G09 No Fire
03:31	1363	S2G06 Comm Error
03:35	1364	S2G06 Comm Error
03:35	1364	S2G08 Comm Error
03:39	1365	S2G06 Comm Error
03:39	1365	S2G07 Comm Error
03:39	1365	S2G08 Comm Error
03:46	1367	S2G06 Comm Error
03:46	1367	S2G08 Comm Error
03:57	1370	S2G06 Comm Error
03:57	1370	S2G08 Comm Error
05:01	1388	S3G09 No Fire
05:12	1391	S2G07 Comm Error
06:37	1415	S2G06 Comm Error
06:37	1415	S2G08 Comm Error
06:45	1417	S2G06 Comm Error
06:45	1417	S2G07 Comm Error
06:45	1417	S2G08 Comm Error
06:56	1420	S2G07 Comm Error
06:56	1420	S2G08 Comm Error
07:03	1422	S2G06 Comm Error
07:39	1432	S2G06 Comm Error
07:39	1432	S2G08 Comm Error
07:54	1436	S2G06 Comm Error
07:54	1436	S2G07 Comm Error
07:54	1436	S2G08 Comm Error
07:58	1437	S2G08 Comm Error
08:09	1440	S2G06 Comm Error

08:12	1441	S2G06 Comm Error
08:12	1441	S2G08 Comm Error
08:23	1444	S2G06 Comm Error
08:23	1444	S2G07 Comm Error
08:23	1444	S2G08 Comm Error
08:27	1445	S2G06 Comm Error
08:27	1445	S2G08 Comm Error
08:30	1446	S2G06 Comm Error
08:30	1446	S2G07 Comm Error
08:30	1446	S2G08 Comm Error
08:41	1449	S3G09 No Fire
08:52	1452	S2G06 Comm Error
08:52	1452	S2G07 Comm Error
08:52	1452	S2G08 Comm Error
08:56	1453	S2G06 Comm Error
08:56	1453	S2G07 Comm Error
08:56	1453	S2G08 Comm Error
09:10	1457	S2G06 Comm Error
09:10	1457	S2G08 Comm Error
10:23	1477	S2G06 Comm Error
10:31	1479	S2G06 Comm Error
10:38	1481	EOL S2G09 & S2G10 OFF S3G05 & S4G05 spares

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	N/A	N/A	FGSP	984
SP #	984	1116	LGSP	1116

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/16/12	02/16/12
Time UTC	13:19	21:17
Volume (cu in.)	6520in3	6520in3
Wind (kts)	17.1	S 8
Sea State (m)	1-2m	1-2m
Water Depth (m)	5580.6m	5337.0m

General / Line Comments
SOL SP 984
EOL SP 1116
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204OBS05
Sequence	016
Direction	190.5

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

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Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	994
SP #	994	1685	LGSP	1685

Line	MGL1204OBS07
Sequence	018
Direction	271.3

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	2/17/12	02/19/12
Time UTC	09:06	02:37
Volume (cu in.)	6540in3	6540in3
Wind (kts)	S 5-10	SE 7
Sea State (m)	1m	1m
Water Depth (m)	5257.7m	3430m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 994
EOL SP 1685
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1003
SP #	1003	1170	LGSP	1170

Line	MGL1204OBS08
Sequence	019
Direction	358.9

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/19/12	02/19/12
Time UTC	02:47	12:48
Volume (cu in.)	6540in3	6540in3
Wind (kts)	SE 8	NNE 18
Sea State (m)	1m	1-2m
Water Depth (m)	3454m	2897m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1003
EOL SP 1170
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	N/A	N/A	FGSP	992
SP #	992	1168	LGSP	1168

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/20/12	
Time UTC	14:00	00:32
Volume (cu in.)	6540in3	6540in3
Wind (kts)	E 10	E10
Sea State (m)	1m	1m
Water Depth (m)	3311.2m	3453.1m

General / Line Comments
SOL SP 992
EOL SP 1168
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204OBS09
Sequence	020
Direction	178.9

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1002
SP #	1002	1128	LGSP	1128

Line	MGL1204OBS10
Sequence	021
Direction	270.3

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/20/12	2/20/12
Time UTC	00:39	08:1
Volume (cu in.)	6540in3	6540in3
Wind (kts)	E 10	E 14
Sea State (m)	1m	1-2m
Water Depth (m)	3456.5m	3068m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1002
EOL SP 1128
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	993
SP #	993	1127	LGSP	1127

Line	MGL1204OBS11
Sequence	022
Direction	90.1

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	2/20/12	2/20/12
Time UTC	09:30	17:43
Volume (cu in.)	6540in3	6540in3
Wind (kts)	E 26	E 20
Sea State (m)	1-2m	1-2m
Water Depth (m)	3015m	3461.2m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 993
EOL SP 1127
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1002
SP #	1002	1282	LGSP	1282

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/20/12	2/21/12
Time UTC	17:45	10:
Volume (cu in.)	6540in3	6540in3
Wind (kts)	E 20	E 23
Sea State (m)	2-3m	2-3m
Water Depth (m)	3469.0m	3806m

General / Line Comments
SOL SP 1002
EOL SP 1282
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204OBS12
Sequence	023
Direction	178.8

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	SP	Description
		SOL Guns Off S2G08, Guns Spared S1G05, S2G05, S3G05, S4G05
17:45	1002	SOL MGL1204_OBS_023_12
17:48	1003	Bad Shot D/T Resetting Runts
20:39	1050	S3G09 Delta Timing @ -4.1ms
20:43	1051	S3G09 Delta Timing @ 3.4ms
23:56	1104	End of Day LSP
00:00	1105	Start of Day FSP
02:30	1146	S3G09 Delta Timing @ 6.6 ms
02:34	1147	S3G09 Delta Timing @ 10.2 ms
02:38	1148	S3G09 Delta Timing @ 4.7 ms
02:58	1154	S3G09 Delta Timing @ -3.6 ms
03:06	1156	S3G09 Delta Timing @ 4.1 ms
03:27	1162	S3G09 Delta Timing @ -4.2 ms
03:34	1164	S3G09 Delta Timing @ 4.9 ms
03:44	1167	S3G09 Comm Error
04:09	1174	S3G09 Delta Timing @ -3.6 ms
04:13	1175	S3G09 Delta Timing @ 3.1 ms
04:16	1176	S3G09 Delta Timing @ 9.7 ms
04:20	1177	S3G09 Delta Timing @ -10.0 ms
04:27	1179	S3G09 Delta Timing @ 10.1 ms
04:30	1180	S3G09 Delta Timing @ -10.1 ms
04:34	1181	S3G09 Delta Timing @ -4.8 ms
04:48	1185	S3G09 Delta Timing @ -3.3 ms
04:52	1186	S3G09 Delta Timing @ 3.5 ms
04:55	1187	S3G09 Delta Timing @ 9.5 ms
04:59	1188	S3G09 Delta Timing @ 9.8 ms
05:49	1202	S3G09 Delta Timing @ -3.7 ms
05:52	1203	S3G09 Delta Timing @ 11.2 ms
05:56	1204	S3G09 Delta Timing @ -7.3 ms
06:03	1206	S3G09 Delta Timing @ -3.1 ms
06:28	1213	S3G09 Delta Timing @ 10.4 ms
06:32	1214	S3G09 Delta Timing @ -8.2 ms
06:36	1215	S3G09 No Fire
06:39	1216	S3G09 Delta Timing @ -5.5 ms
06:43	1217	S3G09 Delta Timing @ 4.2 ms
06:54	1220	S3G07 Comm Error
08:02	1239	S3G09 Delta Timing @ -3.4 ms
09:03	1256	S3G09 No Fire
09:10	1258	S3G09 Delta Timing @ -3.5 ms
09:14	1259	S3G09 Delta Timing @ 3.1 ms
09:28	1263	S3G09 Delta Timing @ -5.1 ms
09:32	1264	S3G09 Delta Timing @ 4.3 ms
10:38	1282	EOL Guns Off S2G08, Guns Spared S1G05, S2G05, S3G05, S4G05

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	993
SP #	993	1092	LGSP	1092

Line	MGL1204OBS13
Sequence	024
Direction	358.9

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	2/21/12	2/21/12
Time UTC	11:47	17:48
Volume (cu in.)	6540in3	6540in3
Wind (kts)	E 25	ENE 20
Sea State (m)	2-3m	2-3m
Water Depth (m)	3876m	4292.6m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

SOL SP 993
EOL SP 1092
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP - First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1123
SP #	1123	1601	LGSP	1601

Line	MGL1204OBS18
Sequence	025
Direction	98.9

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/21/12	02/22/12
Time UTC	17:58	23:04
Volume (cu in.)	6540in3	6500in3
Wind (kts)	ENE 20	E 23
Sea State (m)	2-3m	2-3m
Water Depth (m)	4339.1m	5076.1m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1123
EOL SP 1601
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	SP	Description
		Gun Off S2G08, Guns Spare S1G05, S2G05, S3G05, S4G05
17:58	1123	SOL MGL1204 OBS 025 18
19:33	1149	S3G09 Delta Timing Error @ 3.8 ms
19:48	1153	S3G09 Delta Timing Error @ 9.0 ms
19:51	1154	S3G09 Delta Timing Error @ -6.6 ms
21:23	1179	S3G09 Delta Timing Error @ -8.2 ms
21:26	1180	S3G09 Delta Timing Error @ 7.9 ms
21:41	1184	S3G09 Delta Timing Error @ 3.6 ms
21:49	1186	S3G09 Delta Timing Error @ 11.5 ms
21:53	1187	S3G09 Delta Timing Error @ -3.7 ms
22:11	1192	S3G09 Delta Timing Error @ 7.8 ms
22:15	1193	S3G09 No Fire
22:22	1195	S3G09 Delta Timing Error @ -4.7 ms
22:29	1197	S1G01 Auto Fire @ 104.0 ms
22:29	1197	S3G09 Delta Timing Error @ 6.3 ms
22:33	1198	S3G09 Delta Timing Error @ 6.6 ms
23:53	1220	S3G09 Delta Timing Error @ 4.3 ms
23:57	1221	Last Good Shot point of Day
23:59	1222	End of Day LSP Guns Fired Early
00:04	1223	Start of Day FSP Not Good D/T NCC Lock-Up
00:04		NCC Lockup Cleared
00:08	1224	S3G09 Delta Timing Error @ 7.8ms
01:14	1242	S3G09 Delta Timing Error @ -6.4 ms
02:01	1255	S3G09 No Fire
02:05	1256	S3G09 Delta Timing Error @ 8.8 ms
02:08	1257	S3G09 Delta Timing Error @ -8.2 ms
02:15	1259	S3G09 Delta Timing Error @ 8.9 ms
02:19	1260	S3G09 Delta Timing Error @ -7.4 ms
02:22	1261	S3G09 Delta Timing Error @ -5.5 ms
02:26	1262	S3G09 Delta Timing Error @ 11.5 ms
02:33	1264	S3G09 No Fire
02:37	1265	S3G09 No Fire
02:40	1266	S3G09 Delta Timing Error @ -9.7 ms
02:44	1267	S3G09 Delta Timing Error @ -11.5 ms
02:47	1268	S3G09 Delta Timing Error @ 9.7 ms
02:51	1269	S3G09 Delta Timing Error @ 6.4 ms
03:05	1273	S3G09 Delta Timing Error @ 9.1 ms
03:09	1274	S3G09 Delta Timing Error @ -10.4 ms
03:12	1275	S3G09 Delta Timing Error @ 8.8 ms
03:19	1277	S3G09 Delta Timing Error @ -9.7 ms
03:26	1279	S3G09 Delta Timing Error @ -3.4 ms
03:30	1280	S3G09 No Fire
03:40	1283	S3G09 Delta Timing Error @ 9.0 ms
03:47	1285	S3G09 Delta Timing Error @ -8.4 ms
03:58	1288	S3G09 Delta Timing Error @ 4.5 ms
04:09	1291	S3G09 Delta Timing Error @ 8.5 ms
04:13	1292	S3G09 Delta Timing Error @ -9.8 ms
04:16	1293	S3G09 Delta Timing Error @ -7.0ms
04:20	1294	S3G09 Delta Timing Error @ 9.5 ms

04:23	1295	S3G09 Delta Timing Error @ -6.3 ms
04:27	1296	S3G09 No Fire
04:37	1299	S3G09 Delta Timing Error @ -4.0 ms
04:44	1301	S3G09 Delta Timing Error @ 9.4 ms
04:48	1302	S3G09 Delta Timing Error @ 8.3 ms
04:51	1303	S3G09 Delta Timing Error @ 9.0 ms
04:55	1304	S3G09 Delta Timing Error @ -8.0 ms
04:58	1305	S3G09 Delta Timing Error @ 10.0 ms
05:02	1306	S3G09 Delta Timing Error @ 7.9 ms
05:05	1307	S3G09 Delta Timing Error @ -3.8 ms
05:09	1308	S3G09 No Fire
05:13	1309	S3G09 Delta Timing Error @ -7.1 ms
05:34	1315	S3G09 Delta Timing Error @ -3.3 ms
05:42	1317	S3G09 Delta Timing Error @ 9.5 ms
05:45	1318	S3G09 Delta Timing Error @ -6.4 ms
05:48	1319	S3G09 Delta Timing Error @ 8.6 ms
05:52	1320	S3G09 No Fire
05:56	1321	S3G09 Delta Timing Error @ -8.2 ms
05:59	1322	S3G09 Delta Timing Error @ -4.9 ms
06:03	1323	S3G09 Delta Timing Error @ 3.9 ms
06:10	1325	S3G09 Delta Timing Error @ 9.2 ms
06:18	1327	S3G09 Delta Timing Error @ -8.5 ms
06:25	1329	S3G09 Delta Timing Error @ -4.2 ms
06:35	1332	S3G09 Delta Timing Error @ -11.0 ms
06:39	1333	S3G09 Delta Timing Error @ 9.6 ms
06:43	1334	S3G09 Delta Timing Error @ 10.7 ms
06:46	1335	S3G09 Delta Timing Error @ -6.2 ms
06:57	1338	S3G09 Delta Timing Error @ 10.1 ms
07:01	1339	S3G09 Delta Timing Error @ -5.3 ms
07:08	1341	S3G09 Delta Timing Error @ 9.0 ms
07:15	1343	S3G09 Delta Timing Error @ -11.9 ms
07:19	1344	S3G09 Delta Timing Error @ -3.2 ms
07:23	1345	S3G09 Delta Timing Error @ 10.7 ms
07:26	1346	S3G09 Delta Timing Error @ -5.7 ms
07:30	1347	S3G09 Delta Timing Error @ -4.4 ms
07:34	1348	S3G09 Delta Timing Error @ -7.2 ms
07:38	1349	S3G09 Delta Timing Error @ -11.4 ms
07:41	1350	S3G09 Delta Timing Error @ 7.8 ms
07:49	1352	S3G09 Delta Timing Error @ -6.6 ms
07:56	1354	S3G09 Delta Timing Error @ -4.3 ms
07:59	1355	S3G09 No Fire
08:14	1359	S3G09 Delta Timing Error @ -7.1 ms
08:17	1360	S3G09 Delta Timing Error @ 8.0 ms
08:21	1361	S3G09 Delta Timing Error @ 10.8 ms
08:25	1362	S3G09 Delta Timing Error @ 5.2 ms
08:28	1363	S3G09 Delta Timing Error @ 10.6 ms
08:32	1364	S1G01 Auto Fire @ 112.6 ms
08:32	1364	S3G09 Delta Timing Error @ 4.8 ms
08:36	1365	S1G01 Auto Fire @ 112.6 ms
08:39	1366	S3G09 Delta Timing Error @ 8.7 ms
08:50	1369	S3G09 Delta Timing Error @ -8.6 ms

09:01	1372	S3G09 Delta Timing Error @ 8.5 ms
09:05	1373	S3G09 Delta Timing Error @ -6.9 ms
09:09	1374	S3G09 Delta Timing Error @ -8.2 ms
09:12	1375	S3G09 Delta Timing Error @ -5.2 ms
09:24	1378	S3G09 Delta Timing Error @ 8.5 ms
09:27	1379	S3G09 Delta Timing Error @ -6.8 ms
09:35	1381	S3G09 Delta Timing Error @ -3.6 ms
09:42	1383	S1G01 Auto Fire @ 112.6 ms
09:42	1383	S3G09 Delta Timing Error @ -8.0 ms
09:46	1384	S3G09 Delta Timing Error @ -11.1 ms
09:50	1385	S3G09 Delta Timing Error @ 4.2 ms
09:53	1386	S3G09 Delta Timing Error @ -5.0 ms
09:57	1387	S3G09 Delta Timing Error @ 8.9 ms
10:01	1388	S3G09 Delta Timing Error @ -7.3 ms
10:04	1389	S3G09 Delta Timing Error @ 10.6 ms
10:08	1390	S3G09 Delta Timing Error @ 8.7 ms
10:11	1391	S3G09 Delta Timing Error @ 7.7 ms
10:15	1392	S3G09 Delta Timing Error @ 4.8 ms
10:19	1393	S3G09 Delta Timing Error @ 8.2 ms
10:26	1395	S3G09 Delta Timing Error @ -8.4 ms
10:37	1398	S3G09 Delta Timing Error @ 8.8 ms
10:41	1399	S3G09 Delta Timing Error @ -6.5 ms
10:48	1401	S3G09 No Fire
10:52	1402	S1G01 Auto Fire @ 105.5 ms
10:52	1402	S3G09 Delta Timing Error @ 8.4 ms
10:59	1404	S3G09 Delta Timing Error @ -8.7 ms
11:03	1405	S3G09 Delta Timing Error @ 8.3 ms
11:07	1406	S3G09 Delta Timing Error @ -8.6 ms
11:14	1408	S3G09 Delta Timing Error @ 8.3 ms
11:18	1409	S3G09 Delta Timing Error @ -9.8 ms
11:33	1413	S3G09 Delta Timing Error @ 12.7 ms
11:37	1414	S1G01 Auto Fire @ 106.3 ms
11:37	1414	S3G09 Delta Timing Error @ 8.3 ms
11:37		S3G09 Turned Off S3G05 Turned On
11:40	1415	S1G01 Auto Fire @ 106.3 ms
13:58	1452	S1G01 Auto Fire @ 107.2 ms
14:09	1455	S1G01 Auto Fire @ 108.4 ms
16:42	1497	S1G01 Auto Fire @ 114.1 ms
16:53	1500	S1G01 Auto Fire @ 100.2 ms
19:11	1538	S1G01 Auto Fire @ 101.4 ms
23:04	1601	End Of Line

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1101
SP #	1101	1361	LGSP	1361

Line	MGL1204OBS19
Sequence	026
Direction	10.5

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/22/12	02/23/12
Time UTC	23:09	14:53
Volume (cu in.)	6500in3	6500in3
Wind (kts)	E 23	E 15
Sea State (m)	2-3m	1m
Water Depth (m)	5100.4m	5230.4m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1101
EOL SP 1361
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1162
SP #	1162	1684	LGSP	1684

Line	MGL1204OBS20
Sequence	027
Direction	271.3

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/23/12	02/24/12
Time UTC	14:56	22:12
Volume (cu in.)	6500in3	6580in3
Wind (kts)	E 15	ENE 4
Sea State (m)	1m	1m
Water Depth (m)	5224.4m	3433.2m

Cable	EOL High Noise Channels (in u-bar)
1	SOL MGL1204_OBS_026_19
2	
3	
4	

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments	
SOL	SP 1162
EOL	SP 1684
SOL NOISY CHANNELS	
EOL NOISY CHANNELS	

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1003
SP #	1003	1185	LGSP	1185

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/24/12	02/25/12
Time UTC	22:25	09:20
Volume (cu in.)	6580in3	6580in3
Wind (kts)	ENE 4	NE 5
Sea State (m)	1m	1m
Water Depth (m)	3471.4m	4229m

General / Line Comments
SOL SP 1003
EOL SP 1185
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

Line	MGL1204OBS21
Sequence	028
Direction	178.8

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1119
SP #	1119	1001	LGSP	1001

Line	MGL1204OBS22
Sequence	029
Direction	279.9

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/25/12	02/25/12
Time UTC	09:31	16:34
Volume (cu in.)	6580in3	6580in3
Wind (kts)	NE 5	E 5
Sea State (m)	1m	1m
Water Depth (m)	4221m	2845.9m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1119
EOL SP 1001
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	992
SP #	992	1601	LGSP	1601

Line	MGL1204OBS23
Sequence	030
Direction	98.9

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/25/12	02/27/12
Time UTC	17:53	06:29
Volume (cu in.)	6580in3	6440in3
Wind (kts)	E 5	E 20
Sea State (m)	1m	1m
Water Depth (m)	2695.7m	5075m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

ProMax - QC the above channels

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 992
EOL SP 1601
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]

Observers Log

Vessel	Marcus G. Langseth
Client	Doug Wiens
Area	Northern Marianas Islands
Job Number	MGL1204

Chief Science Officer	Robert Steinhaus		
Science Officer	Tom Spoto		
Acquisition Leader	Tina Thomas - 12:00-24:00	Tom Spoto 00:00-12:00	
Navigation Leader	David Ng 12:00-24:00	Mike Martello 00:00-12:00	

	SOL	EOL		
Tape #	N/A	N/A	FGSP	1102
SP #	1102	1158	LGSP	1158

Line	MGL1204OBS24
Sequence	031
Direction	10.5

Streamer Parameters				
	1	2	3	4
Length (m)				
Auxiliaries				
Shotpoint Interval: (m)	500			
Offset CS - CNG (m)	181			
Group Interval: (m)				
Number of channels				
Streamer Depth (m)				
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	no
Depth	9m
Source Separation	n/a
COS to COS	

Recording Parameters	
Record Length	
Total recording delay	N/A
Sample Rate	N/A
Polarity	N/A
Low-Cut	N/A
Hi-Cut	N/A
Tape Format	N/A

Description	SOL/FQCSP	EOL/LQCSP
Date MM/DD/YY	02/27/12	02/27/12
Time UTC	06:39	10:02
Volume (cu in.)	6440in3	6440in3
Wind (kts)	E 20	E18
Sea State (m)	1m	1m
Water Depth (m)	5111m	5413m

Cable	EOL High Noise Channels (in u-bar)
1	
2	
3	
4	

Auxiliaries	
Aux. 1-8	Empty
Aux. 13-16	Empty
Aux 9 Gun hydrophone	Empty
Aux 10 Gun hydrophone	Empty
Aux 11 Gun hydrophone	Empty
Aux 12 Gun hydrophone	Empty

General / Line Comments
SOL SP 1102
EOL SP 1158
SOL NOISY CHANNELS
EOL NOISY CHANNELS

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
FGSP- First Good SP	LCSP - Last Chargable SP
FCSP - First Chargable SP	LFFSP - Last Full Fold SP
FOLSP - First Overlap SP	Fa - Feather Angle
BOT/EOT - Begin/End of Tape	SI - Seismic Interference
NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

[illegible]