

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	1	10
SP #	4832	10464

Line	MGL1803MCS01
Sequence	03
Direction	109

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	10 & 12			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	4832	10464
Date MM/DD/YY	03/03	03/05/18
Time UTC	18:58	05:10
Volume (cu in.)	6600in3	6600in3
Wind (kts)	NNW 16kts	NW 22kts
Sea State (m)	1.25m	2m
Water Depth (m)	4407m	170.4m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
UTC 12:19 SP 7750 Increasing swell noise breakout seen on streamer data displays
UTC 16:07 SP 8376 Streamer depth adjusted from 10m to 12m to compensate for swell noise breakout
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 - Initiation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
18:58	1	4832	1	FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
19:22		4899		NDR Missed sp 4899 due to resetting Seisnet
22:09	547	5379		String 4, Gun 001 Delta error -2.3 ms
22:09	548	5380		String 4, Gun 001 Delta error 2.2 ms
22:30	609	5441	1	EOT
22:31	610	5442	2	BOT #2
22:48		5496	2	Missed sp 5496
00:00	869	5702	2	Midnight Shotpoint
02:08	1218	6051	2	EOT
02:09	1219	6052	3	BOT #3
04:36		6455	3	NDR Missed sp 6455
04:49		6494	3	NDR Missed sp 6494
05:00		6525	3	NDR Missed sp 6525
05:06		6545	3	NDR Missed sp 6545
05:47		6661	3	NDR Missed sp 6661
05:48	1827	6665	3	EOT
05:48	1828	6666	4	BOT #4
06:25		6773	4	NDR Missed sp 6773
06:43		6824	4	NDR Missed sp 6824
07:18		6925	4	NDR Missed sp 6925
07:43	2153	6994	4	String 4, Gun 001 Delta error 2.3 ms
09:24	2436	7277	4	EOT
09:24	2437	7278	5	BOT #5
09:25	2437	7278	5	String 4, Gun 001 Delta error 2.2 ms
12:19	2909	7750	5	More significant swell noise breakout seen on streamer data displays.
12:59	3027	7868	5	String 4, Gun 001 Delta error 2.1 ms
13:06	3045	7886	5	EOT
13:06	3046	7887	6	BOT #6
13:10	3059	7900	6	String 4, Gun 001 Delta error 2.1 ms
16:07	3535	8376	6	Streamer depth adjusted from 10m to 12m to compensate for swell noise breakout
17:02	3654	8495	6	EOT
17:02	3655	8496	7	BOT #7
20:48	4263	9104	7	EOT
20:49	4264	9105	8	BOT #8
00:00	4773	9614	8	Midnight Shotpoint
00:34	4872	9713	8	EOT
00:35	4873	9714	9	BOT #9
04:20	5481	10371	9	EOT
04:20	5482	10372	10	BOT #10
05:10	5623	10464	10	EOL; LGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
05:11	5624		10	False record. No shotpoint.

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	11	15
SP #	10983	13408

Line	MGL1803MCS03A
Sequence	04
Direction	276

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	12.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	10983	13408
Date MM/DD/YY	03/05/18	03/06/18
Time UTC	08:31	00:18
Volume (cu in.)	6600in3	6600in3
Wind (kts)	NW 18kts	SW 17kts
Sea State (m)	2m	2.5m
Water Depth (m)	171.8m	2565.8m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
SOL Streamer depth set @ 12 meters (significant swell noise breakout)
Please see event log regarding Gun array power downs due to pam Dolphin observations.
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 - Initiation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
08:31	5625	10983	11	BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
				SOL Streamer depth set @ 12 meters (significant swell noise breakout)
10:07	5899	11257	11	String 4, Gun 001 Delta error -2.1 ms
10:29	5963	11321	11	String 4, Gun 001 Delta error -2.1 ms
10:46	6009	11367	11	String 4, Gun 001 Delta error -2.2 ms
11:15	6090	11448	11	Good SP @ Full volume before, (power down due to PAM Dolphin observation.)
11:15		11449	11	NDR, MSP
11:16	6090	11450	11	Power down due to PAM Dolphin observation, First mitigation SP (40 Cu.In gun enabled.)
11:24	6108	11470	11	(All clear from MMO, PAM obs) Begin soft start ramp up.
11:24	6108	11470	11	Begin soft start ramp up
11:42		11514	11	NDR, MSP Aborted ramp up.(Incomplete). (power down due to PAM Dolphin observation)
11:43		11515	11	NDR, MSP, First mitigation SP (40 Cu.In gun enabled.)
12:08	6233	11578	11	EOT
12:09	6234	11579	12	BOT # 12
12:12	6242	11587	12	(All clear from MMO, PAM obs) Begin soft start ramp up.
12:32	6307	11637	12	Ramp up complete.
12:32	6309	11639	12	First full volume SP (6600 Cu.In) resume vessel speed.
12:58	6374	11704	12	Good SP @ Full volume before, (power down due to PAM Dolphin observation.)
12:58		11705	12	NDR, MSP, (power down due to PAM Dolphin observation)
12:59	6375	11708	12	First mitigation SP (40 Cu.In gun enabled)
13:24	6445	11775	12	(All clear from MMO, PAM obs) Begin soft start ramp up.
13:44	6507	11828	12	NDR, MSP. Ramp up complete.
13:45	6508	11829	12	First full volume SP (6600 Cu.In) resume vessel speed.
15:54	6842	12163	12	EOT
15:54	6843	12164	13	BOT # 13
17:07	7026	12347	13	String 3, Gun 001 Delta error -2.4 ms
19:32	7385	12705	13	String 3, Gun 001 Delta error -2.1 ms
20:00	7451	12772	13	EOT
20:01	7452	12773	14	BOT # 14
21:48	7706	13027	14	String 4, Gun 001 Delta error 2.1 ms
22:33	7820	13141	14	String 3, Gun 001 Delta error 2.2 ms
23:35	7979	13300	14	String 4, Gun 001 Delta error 2.1 ms
00:00	8042	13363	14	Midnight Shotpoint
00:07	8060	13381	14	EOT
00:07	8061	13382	15	BOT # 15
00:18	8087	13408	15	EOL; LGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares

Observers Log

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Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	16	18
SP #	14276	15545

Line	MGL1803T01
Sequence	05
Direction	079

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	12.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	14276	15545
Date MM/DD/YY	03/06/18	03/06/18
Time UTC	02:34	10:29
Volume (cu in.)	6600in3	6600in3
Wind (kts)	SW 16kts	W 21kts
Sea State (m)	2.5m	3m
Water Depth (m)	2570.1m	2531.9m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
SOL Streamer depth set @ 12 meters (significant swell noise breakout)
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 - Initiation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

Time UTC	FILE	SP	Tape	Description
02:34	8088	14276	16	BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
02:34	8088	14276	16	SOL Streamer depth set @ 12 meters (significant swell noise breakout)
04:57	8503	14691	16	String 3, Gun 001 Delta error 2.1 ms
06:13	8696	14884	16	EOT
06:14	8697	14885	17	BOT # 17
10:08	9305	15492?	17	EOT
10:08	9306	15493?	18	BOT # 18
10:29	9357	15545	18	EOL; LGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares

Observers Log

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Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	19	24
SP #	15873	19369

Line	MGL1803MCS23A
Sequence	06
Direction	195

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	12 & 18			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	15873	19369
Date MM/DD/YY	03/06/18	03/07/18
Time UTC	11:52	09:50
Volume (cu in.)	6600in3	6240in3
Wind (kts)	W 22kts	W 14kts
Sea State (m)	2.5m	4m
Water Depth (m)	2620m	3303.5m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
SOL - UTC 19:18 SP 17019 Streamer depth set @ 12 meters (significant swell noise breakout)
UTC 15:30 cable depths fluctuating due to increasing seastate
UTC 19:18 SP 17020 - EOL Streamer depth set @ 18 meters due to increasing wind / seastate
SP 19306 -EOL String 2, Gun 002 (360 CU.IN Disabled,) 6240 volume fired, 35 guns
Line incomplete due to Gun array 2 & 3 entangled
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
11:52	9358	15873	19	BOL: FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares SOL - SP 17019 Streamer depth set @ 12 meters (significant swell noise)
15:47	9966	16481	19	EOT
15:47	9967	16482	20	BOT # 20
16:12	10031	16546	20	String 4, Gun 001 Delta error 2.3 ms
17:25	10212	16727	20	String 3, Gun 001 Delta error 2.1 ms
18:41	10407	16922	20	String 4, Gun 001 Delta error 2.1 ms
19:18	10505	17020	20	Streamer depth set @ 18 meters due to increasing wind & seastate
19:44	10575	17091	20	EOT
19:44	10576	17092	21	BOT # 21
19:59	10618	17133	21	String 3, Gun 001 Delta error 2.1 ms
20:17	10670	17185	21	String 4, Gun 001 Delta error 2.5 ms
21:17	10846	17361	21	Good SP @ Full volume before, (power down due to PSO Pinned Seal observation)
21:17		17362	21	NDR, MSP, (power down due to PSO Pinned Seal observation)
		17363	21	NDR, MSP
21:18	10847	17364	21	First mitigation SP (40 Cu.in gun enabled)
21:34	10891	17409	21	Begin soft start ramp up.
21:54	10957	17465	21	Ramp up complete.
21:54		17466	21	NDR, MSP First full volume SP (6600 Cu.in)
21:54	10958	17467	21	FGSP (6600 Cu.in), after ramp-up
23:14	11184	17693	21	EOT
23:14	11185	17694	22	BOT
23:25	11214	17723	22	String 4, Gun 001 Delta error -2.2 ms
23:26	11218	17727	22	Good SP @ Full volume before, (power down due to PSO Pinned Seal observation)
23:26		17728	22	NDR, MSP, (power down due to PSO Pinned Seal observation)
23:27	11219	17729	22	First mitigation SP (40 Cu.in gun enabled)
23:42		17772	22	NDR, MSP for softstart configuration
23:43	11262	17773	22	Begin soft start ramp up.
00:00	11321	17820	22	Midnight Shotpoint
00:03	11331	17830	22	Ramp up complete.
00:03	11332	17831	22	FGSP (6600 Cu.in), after ramp-up
01:28	11563	18062	22	Good SP @ Full volume before, (power down due to PSO Pinned Seal observation)
01:28		18063	22	NDR, MSP, (power down due to PSO Pinned Seal observation)
01:28	11564	18064	22	First mitigation SP (40 Cu.in gun enabled)
01:47		18115	22	NDR, MSP for softstart configuration
01:47	11615	18116	22	Begin soft start ramp up.
02:08	11684	18172	22	Ramp up complete.
02:08	11685	18173	22	FGSP (6600 Cu.in), after ramp-up
02:48	11793	18281	22	EOT #22
02:48	11794	18282	23	BOT #23
02:49	11796	18284	23	String 3, Gun 001 Delta error -2.1 ms
03:12	11859	18347	23	String 3, Gun 001 Delta error -2.1 ms
03:27	11901	18389	23	String 3, Gun 001 Delta error -2.3 ms
04:29	12067	18555	23	String 3, Gun 001 Delta error -2.1 ms
04:30	12070	18558	23	String 3, Gun 001 Delta error 2.1 ms
05:06	12162	18650	23	String 3, Gun 001 Delta error 2.2 ms
05:07	12165	18653	23	String 3, Gun 001 Delta error -2.1 ms
05:28	12217	18705	23	String 3, Gun 001 Delta error -2.3 ms
06:28	12366	18854	23	String 3, Gun 001 Delta error 2.2 ms
06:43	12402	18890	23	EOT #23
06:43	12403	18891	24	BOT #24
06:55	12434	18922	24	String 3, Gun 001 Delta error -2.2 ms
07:07	12465	18953	24	String 1, Gun 001 Delta error 2.4 ms
07:48	12575	19063	24	String 3, Gun 001 Delta error -2.4 ms
				String 2, Gun 002 No Fire
				String 2, Gun 002 No Fire
09:22	12818	19306	24	String 2, Gun 002 360 Cu.in Disabled, 6240 volume fired, 35 guns
09:50	12881	19369	24	EEOL: LGSP Source vol. 6240 cu.in S2G2 dead, S1G5 S2G5, S3G5, S4G5 spares
				Line Incomplete due to Gun arrays 2 and 3 entangled.

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	25	27
SP #	19359	20885

Line	MGL1803MCS23B
Sequence	07
Direction	195

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	18.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	19359	20885
Date MM/DD/YY	03/07/18	03/08/18
Time UTC	21:11	08:42
Volume (cu in.)	6600 in3	6600 in3
Wind (kts)	27.7kts	S 23kts
Sea State (m)	6m	5m
Water Depth (m)	3624m	3574.3m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
SOL -EOL Streamer depth set @ 18 meters (significant swell noise breakout)
Streamer depth erratics between birds 6-21; Depths 19-25 meters fluctuating.
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
21:11	12883	19359	25	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
				SOL -EOL Streamer depth set @ 18 meters (significant swell noise breakout)
12:13	12888	19364	25	Good record
		19365	25	NDR, MSP resetting disk drive
		19366	25	NDR, MSP resetting disk drive
21:15	12889	19367	25	Next good record
21:22	12904	19432	25	String 04, Gun 001 Delta error 2.1 ms
23:08	13128	19606	25	String 01, Gun 001 Delta error 2.2 ms
00:00	13236	19714	25	Midnight Shotpoint
00:47	13329	19807	26	String 04, Gun 001 Delta error 2.4 ms
02:13	13496	19974	25	EOT #25
02:13	13497	19975	26	BOT #26
05:33	13957	20434	26	Good SP @ Full volume before, (power down due to PSO Pinned Seal observation)
05:33	13958	20435	26	First mitigation SP (40 Cu.in gun enabled) power down due to PSO Pinned Seal observation
05:51	13999	20477	26	Begin ramp up.
05:53	14003	20481	26	Cancel ramp up (max 120cubic inches, 3 guns)
05:53	14004	20482	26	Begin ramp up.
06:13	20528	20528	26	Ramp up complete.
06:13	20529	20529	26	FGSP (6600 Cu.in), after ramp-up
06:27	14105	20562	26	EOT #26
06:28	14106	20563	27	BOT #27
07:34	14259	20716	27	String 04, Gun 001 Delta error 2.1 ms
07:37	14267	20724	27	String 04, Gun 001 Delta error 2.4 ms
08:27	14388	20845	27	String 01, Gun 001 Delta error -2.3 ms
08:42	14428	20885	27	EOL; LGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
08:42	14429		27	NDR; MSP.

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	28	28
SP #	21236	21396

Line	MGL1803T02
Sequence	08
Direction	072

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	18.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	21236	21396
Date MM/DD/YY	03/08/18	03/08/18
Time UTC	10:38	11:48
Volume (cu in.)	6600 in3	6600 in3
Wind (kts)	S26.9kts	SSE 22kts
Sea State (m)	6m	6m
Water Depth (m)	1021m	3353m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
SOL - SP 21305 Birds 1-20 on surface due to seastate @ 6 meters
SOL -EOL Streamer depth set @ 18 meters (significant swell noise breakout)
UTC 11:48 Line aborted to due to weather seastate
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
				SOL -EOL Streamer depth set @ 18 meters (significant swell noise breakout)
				SOL Birds 1-12 on surface due to heavy seas 6m swells
10:38	14430	21236	28	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
10:38	14430	21236	28	String 04, Gun 001 Delta error -2.6 ms
10:43	14441	21247	28	String 03, Gun 001 Delta error -2.1 ms
10:54	14465	21271	28	Streamer surfacing to heavy swell no control
11:13	14510	21316	28	Birds 1-22 on surface due to heavy seas 6m swells
11:38	14569	21375	28	Birds 1-23 on surface due to heavy seas 6m swells
11:48	14584	21390		Birds 1-37 on surface due to heavy seas 6m swells
11:48	14590	21396	28	EOL; Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
	14591			error logged file
				UTC 11:48 Line aborted to due to weather seastate

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	29	36
SP #	21956	26080

Line	MGL1803MCS14
Sequence	09
Direction	293

Streamer Parameters				
	1	2	3	4
Length (m)	12600			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	202			
Group Interval: (m)	12.5			
Number of channels	1008			
Streamer Depth (m)	18 & 14			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	16s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	21956	26080
Date MM/DD/YY	03/08/18	03/09/18
Time UTC	19:23	22:35
Volume (cu in.)	6600 in3	6600 in3
Wind (kts)	SSE 12.5kts	W 16.5kts
Sea State (m)	5m	2.m
Water Depth (m)	3106.7m	4118m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
SOL - UTC 07:59 SP 23845 Streamer depth set @ 18 meters (significant swell noise breakout)
UTC 19:23 SOL Digi Birds 1-31 @ Depth of 18 meters
UTC 19:30 SP 21975 Digi Birds 1-35 @ Depth of 18 meters
UTC 19:37 SP 21995 Digi Birds 1-41 @ Depth of 18 meters
UTC 19:44 SP 22014 All digi birds @ 18 meters
UTC 07:59 SP 23845 All digi birds @ 14 meters
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	LFSP - 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
				SOL to- SP 23845 UTC 07:59 Streamer depth set @ 18 meters (significant swell noise breakout)
19:23	14592	21956	29	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
19:24	14593	21597	29	Good record SOL Digi Birds 1-31 @ Depth of 18 meters
19:30	14611	21975	29	SP 21975 Digi Birds 1-35 @ Depth of 18 meters
19:37	14631	21995	29	SP 21995 Digi Birds 1-41 @ Depth of 18 meters
19:44	14650	22014	29	All Digi birds streaming @ 18 meters
22:21	15038	22402	29	EOT
22:21	15039	22403	30	BOT #30
00:00	15281	22645	30	Midnight Shotpoint
01:01	15435	22799	30	SP 22799 DigiBirds 6-14 went to depths of 19-25 meters
01:10	15457	22821	30	SP 22821 DigiBirds 6-14 back in spec.at 18 meters
01:46	15548	22912	30	Good SP @ Full volume before, (power down due to PSO Whale observation)
01:47	15549	22915	30	First mitigation SP (40 Cu.in gun enabled) power down due to PSO Whale observation
02:19	15621	22991	30	Begin ramp up.
02:27	15647	22934	30	EOT
02:27	15648	22935	31	BOT #31
02:40	15692	23039	31	Ramp up complete.
02:40	15693	23040	31	FGSP (6600 Cu.in), after ramp-up
05:25	16109	23456	31	Good SP @ Full volume before, (power down due to PSO Pinneped Seal observation)
05:26	16110	23458	31	First mitigation SP (40 Cu.in gun enabled) power down due to PSO Pinneped Seal observation
05:40	16144	23493	31	Begin ramp up.
06:00	16212	23541	31	Ramp up complete.
06:00	16213	23542	31	FGSP (6600 Cu.in), after ramp-up
06:18	16256	23585	31	EOT
06:18	16257	23586	32	BOT #32
07:59	16516	23845	32	All Digi birds now streaming @ 14 meters
10:07	16865	24194	32	EOT
10:07	16866	24195	33	BOT #33
14:14	17474	24803	33	EOT
14:15	17475	24804	34	BOT #34
18:25	18083	25412	34	EOT
18:25	18084	25413	35	BOT #35
20:36	18430	25759	35	Delta Timing Error S4G1 -2.2ms
22:14	18692	26021	35	EOT
22:14	18693	26022	36	BOT #36
22:35	18751	26080	36	EOL; EOT. LGSP Line Complete
				Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	37	37
SP #	26970	27171

Line	MGL1803MCS17a
Sequence	010
Direction	040

Streamer Parameters				
	1	2	3	4
Length (m)	4050			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	185			
Group Interval: (m)	12.5			
Number of channels	324			
Streamer Depth (m)	14.0			
SOL Cable Noise, μ B				
EOL Cable Noise, μ B				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	14s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	26970	27171
Date MM/DD/YY	03/11/18	03/11/18
Time UTC	00:20	01:21
Volume (cu in.)	6600	6600
Wind (kts)	NW 31kts	NW 34kts
Sea State (m)	2.5m	3m
Water Depth (m)	2871.7m	2902.2m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
Streamer at 14 meters due to rough seas.
EEOL to untangle PAM
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	LFSP - 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
				SOL Streamer depth set @ 14 meters (significant swell noise breakout)
00:20	18752	26970	37	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
00:54	18863	27081	37	S1G1 delta timing error 2.1ms
01:21	18953	27171	37	EEOL dt PAM cable fouled into Gunstring #4
01:21	18953	27171	37	EOL; LGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	38	38
SP #	28039	29718

Line	MGL1803MCS17b
Sequence	011
Direction	040

Streamer Parameters				
	1	2	3	4
Length (m)	4050			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	185			
Group Interval: (m)	12.5			
Number of channels	324			
Streamer Depth (m)	14 & 18			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	14s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	28039	29718
Date MM/DD/YY	3/11/18	3/11/18
Time UTC	03:07	12:11
Volume (cu in.)	6600 in3	3120
Wind (kts)	NW 38kts	NW 42.2kts
Sea State (m)	3.5m	6m
Water Depth (m)	2622.1m	1667m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
UTC 03:07 BOL Streamer at 14 meters due to rough seas
UTC 04:31 SP 28295 Streamer at 18 meters due to rough seas
UTC 10:52 SP 29466 Sub-Arrays 1 & 2 (3120 cu.in Disabled for recovery)
UTC 10:52 SP 29466 - EOL UTC 12:11 LGSP 29718 Sub arrays 3 & 4 Total volume now 3120 in3
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
				SOL Streamer depth set @ 14 meters (significant swell noise breakout)
03:07	18954	28039	38	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
03:07	18955	28040	38	S3G1 delta timing error -2.1ms
03:20	18994	28079	38	S4G1 delta timing error 2.3ms
03:48	19079	28164	38	S4G1 delta timing error 2.6ms
03:57	19106	28190	38	S4G1 delta timing error 2.9ms
04:16	19165	28250	38	S4G1 delta timing error 2.2ms
04:24	19188	28273	38	S4G1 delta timing error 2.2ms
04:31	19210	28295	38	Moved Cables to 18 meter depth. Rough seas
04:33	19217	28302	38	S4G1 delta timing error 2.1ms
04:49	19269	28354	38	S4G1 delta timing error 2.3ms
04:51	19274	28359	38	S3G1 delta timing error -2.1ms
04:58	19295	28380	38	S3G1 delta timing error -2.3ms
05:06	19319	28404	38	S4G1 delta timing error 2.2ms
05:29	19392	28477	38	S4G1 delta timing error 2.1ms
05:31	19397	28482	38	S4G1 delta timing error 2.1ms
06:23	19560	28645	38	S4G1 delta timing error 2.2ms
06:26	19569	28654	38	S4G1 delta timing error -2.3ms
06:38	19607	28692	38	S4G1 delta timing error -2.1ms
06:44	19628	28713	38	S4G1 delta timing error -2.9ms
06:52	19653	28738	38	S4G1 delta timing error 2.3ms
06:59	19764	28759	38	S3G2 delta timing error 2.3ms
07:00	19677	28762	38	S1G1 delta timing error 2.2ms
07:29	19766	28851	38	S4G1 delta timing error -2.3ms
07:38	19794	28879	38	S1G2 delta timing error 2.2ms
08:11	19891	28975	38	S4G1 delta timing error -2.9ms
08:11	19892	28976	38	S4G1 delta timing error 3.0ms
08:26	19935	29020	38	S1G2 delta timing error 2.1ms
08:27	19938	29023	38	S4G1 delta timing error 2.40ms
08:28	19941	29026	38	S4G1 delta timing error 2.2 ms
08:29	19943	29028	38	S4G1 delta timing error -2.5ms
09:05	20055	29140	38	S4G1 delta timing error -2.4 ms
09:08	20065	29150	38	S4G1 delta timing error 2.3ms
09:44	20174	29259	38	S4G1 delta timing error 2.3ms
09:45	20178	29263	38	S4G1 delta timing error 2.2ms
09:50	20194	29279	38	S4G1 delta timing error -2.1ms
09:58	20220	29305	38	S4G1 delta timing error 2.9ms
10:05	20241	29326	38	S4G1 delta timing error -2.4ms
10:19	20280	29365	38	S4G1 delta timing error 456.0ms
10:20	20282	29367	38	S4G1 delta timing error -2.4ms
10:20	20284	29369	38	S4G1 delta timing error -2.4ms
10:21	20286	29371	38	S4G1 delta timing error -2.4ms
10:23	20294	29378		
10:23	20295	29379	38	last @ Source Volume: 6600 cu in.
10:24	20296	29380	38	Disabled S4G1. (360 cu.in) Source Volume now 6240 cu in.
10:25	20297	29382	38	Enabled S4G5. (180 cu.in) Source Volume now 6420 cu in.
10:51		29465	38	Missed SP while configuring source
10:52	20380	29466	38	Sub-Arrays 1 & 2 (3120 cu.in Disabled for recovery) -Sub arrays 3 & 4 Total volume now 3120 in3
10:56	20393	29479	38	S3G1 delta timing error -2.1ms
10:57	20398	29484	38	S3G1 delta timing error -2.2ms
11:00	20407	29493	38	S3G1 delta timing error -2.9ms
11:04	20419	29504	38	S3G1 delta timing error -2.1ms
11:07	20428	29514	38	S3G1 delta timing error -2.3ms
11:19	20466	29552	38	S3G1 delta timing error -2.2ms
11:22	20475	29561	38	S3G1 delta timing error -2.1ms
11:27	20492	29578	38	S3G1 delta timing error -2.3ms
11:34	20513	29599	38	S3G1 delta timing error -2.2ms
11:36	20521	29607	38	S3G1 delta timing error -2.4ms
12:07	20618	29704	38	S3G1 delta timing error -2.3ms
12:09	20624	29710	38	S3G1 delta timing error -2.1ms
12:11	20632	29718	38	EOL; LGSP Sub arrays 3 & 4 Total volume now 3120 in3

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	39	39
SP #	30910	32830

Line	MGL1803MCS17c
Sequence	012
Direction	051

Streamer Parameters				
	1	2	3	4
Length (m)	4050			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	185			
Group Interval: (m)	12.5			
Number of channels	324			
Streamer Depth (m)	14 & 18			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	14s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	30910	32830
Date MM/DD/YY	3/17/18	3/17/18
Time UTC	02:12	12:09
Volume (cu in.)	6600 in3	6600 in3
Wind (kts)	NE 10kts	ENE 16.5kts
Sea State (m)	3m	2m
Water Depth (m)	1578.2m	88m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
BOL Streamer at 14 meters due to rough seas
UTC 02:38 - UTC 02:51 Streamer depth set @ 18 meters (significant swell noise breakout)
UTC 02:51 SP 31025 - EOL Streamer set back 14 Meters
UTC 06:26 - 06:50 gun volume reduced @ 4950 cu.in whilst online array tow line repairs.
UTC 06:50 SP 31780 - EOL Full array volume @ 6600 in3
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
				SOL Streamer depth set @ 14 meters (significant swell noise breakout)
02:12	20633	30910	39	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
02:38	20709	30986	39	Dropped Streamer to 18 meters due to sea noise on cable
02:51	20748	31025	39	Raised Streamer back to 14 meters.
06:26	21423	31700	39	Last 6600 cu.in full volume SP before reduced array volume for online tow line repairs
06:26	21424	31701	39	4950 cubic inches, 27 guns, recovering string 3 to replace broken soft tow
06:32	21445	31722	39	spare string 4, enable string 3, still 27 guns, 4950 cubic inches, to repair 4 soft tow chain
06:33	21446	31722	39	Delta timing error, S3G1, S3G2, S3G4, S3G9
06:33	21447	31723	39	Delta timing error, S3G1, S3G2, S3G9
06:41	21474	31751	39	spare string 3, enable string 4, still 27 guns, 4950 cubic inches, to replace 3 soft tow point
06:41	21474	31751	39	Delta timing error S4G1, S4G2, S4G9
06:50	21503	31780	39	String 3 repaired, firing full array 6600 cubic inches, 36 guns
06:50	21503	31780	39	Delta timing error, S3G1, S3G2
12:09	22553	32830	39	EOL; EOT. LGSP Line Complete
				Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	40	41
SP #	33017	33332

Line	MGL1803T03
Sequence	013
Direction	341

Streamer Parameters				
	1	2	3	4
Length (m)	4050			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	185			
Group Interval: (m)	12.5			
Number of channels	324			
Streamer Depth (m)	14.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	14s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	33017	33332
Date MM/DD/YY	3/17/18	3/17/18
Time UTC	12:16	13:49
Volume (cu in.)	6600 in3	6600 in3
Wind (kts)	ENE 18.5kts	NE 13.1kts
Sea State (m)	2m	1.5m
Water Depth (m)	86.2m	72.4m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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
Channels 120, 140 Weak throughout line
BOL Streamer at 14 meters due to rough seas
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
				SOL Streamer depth set @ 14 meters (significant swell noise breakout)
12:16	22554	33017	40	BOT BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
12:17		33024	40	NDR,MSP
12:18	22561	33025	40	Next good record
13:27	22794	33258	40	EOT
13:27	22795	33259	41	BOT
13:49	22868	33332	41	EOL; EOT. LGSP Line Complete
				Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares

Observers Log

Vessel	Marcus G. Langseth
Client	NSF - Gurnis
Area	SISIE
Job Number	MGL1803

Chief Science Officer	Robert Steinhaus		
Science Officer	Todd Jensvold	Robert Steinhaus	
Acquisition Leader	Todd Jensvold 12:00-24:00	Clive Dugdale 24:00-12:00	
Navigation Leader	Alan Thompson 12:00-24:00	Robert Steinhaus 24:00-12:00	

	SOL	EOL
Tape #	42	43
SP #	34013	36470

Line	MGL1803MCS19a
Sequence	014
Direction	171

Streamer Parameters				
	1	2	3	4
Length (m)	4050			
Auxiliaries	n/a			
Shotpoint Interval: (m)	50			
Offset CS - CNG (m)	185			
Group Interval: (m)	12.5			
Number of channels	324			
Streamer Depth (m)	14.0			
SOL Cable Noise, µB				
EOL Cable Noise, µB				

Source Parameters	
Total Volume	6600 in3
Work Pressure	1950psi +/- 100psi
Dual Source	No
Depth	9
Sub-array Separation	6 m
COS to COS	Single Source

Recording Parameters	
Record Length	14s
Total recording delay	-160ms
Sample Rate	2ms
Polarity	SEGD standard
Low-Cut	3Hz digital, 4.5Hz total
Hi-Cut	200Hz, 370dB/octave
File Format	SEGD

Description	SOL/FGSP	EOL/LGSP
SP	34013	36470
Date MM/DD/YY	3/17/18	3/18/18
Time UTC	13:54	03:00
Volume (cu in.)	6600 in3	6600 in3
Wind (kts)	NE 10.5 kts	N 22.6kts
Sea State (m)	1.5m	3m
Water Depth (m)	68.1m	1506.9m

Cable	Dead Channels
1	
2	1,13,21,45,93,109,117
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

Channels 120, 140 Weak throughout line

BOL Streamer at 14 meters due to rough seas

Abbreviations	
SOL/EOL - Start/End of Line	LGSP - Last Good SP
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NDR - No Data Recorded	ITB - Imitation Time Break
NDR - No Data Recorded	ITB - Internal Time Break
N.T.B.P. - Not To Be Processed	

SOL NOISY CHANNELS
EOL NOISY CHANNELS

Time UTC	FILE	SP	Tape	Description
				SOL Streamer depth set @ 14 meters (significant swell noise breakout)
13:54	22870	34013	42	BOT, BOL; FGSP Source vol. 6600cu.in S1G5 S2G5, S3G5, S4G5 spares
20:37	24240	35383	42	Delta Timing Error S1G1 2.6 ms
21:46	24477	35620	42	Delta Timing Error S1G1 -2.2 ms
21:51	24496	35639	42	Delta Timing Error S1G1 -2.3 ms
21:52	24498	35641	42	Delta Timing Error S1G1 2.3 ms
22:01	24527	35670	42	Delta Timing Error S1G1 -2.8 ms
22:13	24567	35710	42	Delta Timing Error S1G1 -2.2 ms
22:16	24578	35721	42	Delta Timing Error S1G1 -2.3 ms
22:19	24588	35730	42	Delta Timing Error S1G1 -2.5 ms
22:21	24593	35736	42	Delta Timing Error S1G1 -2.5 ms
22:22	24598	35741	42	Delta Timing Error S1G1 -2.1 ms
22:28	24615	35758	42	Delta Timing Error S1G1 -2.2 ms
22:40	24654	35797	42	Delta Timing Error S1G1 -2.8 ms
22:40	24656	35799	42	Delta Timing Error S1G1 2.3 ms
22:42	24660	35803	42	Delta Timing Error S1G1 2.3 ms
00:00	24856	35999	42	Midnight shot
00:40	24957	36100	42	EOT # 42
00:41	24958	36101	43	BOT # 43
03:00	25327	36470	43	EOL; EOT. LGSP Line Complete