

Seq# 001		Line Name: MGL1801M1196		<b>NAVIGATION</b>		DATE: 2018-01-09		Lamont-Doherty Earth Observatory													
		Line Brg : 121.8 °		<b>LINE LOGS</b>		JULIAN DAY: 009		COLUMBIA UNIVERSITY   EARTH INSTITUTE													
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D			AREA: New Zealand															
DC SOL: 126.1 m		DEPTH SOL : 59.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																	
DC EOL: 39.0 m		DEPTH EOL : 3519.8 m		NAVIGATION SYSTEM USED: SeaPath 330																	
BSP SOL: 4.6 kts		FEATHER SOL: -42.0 °		NAVIGATION SYSTEM USED: C-Nav2000																	
BSP EOL: 4.7 kts		FEATHER EOL: 01.5 °		NAVIGATION SYSTEM USED: POSMV																	
WEATHER		MAX FEATHER: -42.0 °		GRAVITY METER: BMG-II: used, SN223																	
WIND SOL: W 8 kts				MAGNETOMETER: None																	
WIND EOL: NE 8.1 kts		shift hours		shift leaders		shift hours		watch personnel													
SEAS SOL: 1.0 m		12:00 - 24:00		Gilles Guerin		00:00 - 12:00		Todd Jensvold													
SEAS EOL: 1.0 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		David Martinson													
SP	UTC	EVENT	COMMENTS																		
3634	18:23	SOL	Start of line																		
1740	00:00	Midnight																			
879	02:32	EOL	End of line																		
			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3634</td> <td>38° 38' 44.199"</td> <td>178° 25' 11.485"</td> </tr> <tr> <td>LSP 879</td> <td>38° 57' 44.396"</td> <td>179° 06' 06.335"</td> </tr> </tbody> </table>							VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 3634	38° 38' 44.199"	178° 25' 11.485"	LSP 879	38° 57' 44.396"	179° 06' 06.335"
VESSEL POSITION																					
Shotpoints	Latitude (S)	Longitude (E)																			
FSP 3634	38° 38' 44.199"	178° 25' 11.485"																			
LSP 879	38° 57' 44.396"	179° 06' 06.335"																			
			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>265.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>465.00m</td> </tr> <tr> <td>COS - CNG</td> <td>200.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>365.00m</td> </tr> </tbody> </table>							NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	265.0m	NRP - CNG	465.00m	COS - CNG	200.00m	NRP - CMP	365.00m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	265.0m																				
NRP - CNG	465.00m																				
COS - CNG	200.00m																				
NRP - CMP	365.00m																				
Posnet locations & remarks: good - none - intermittent																					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good																	
Tailbuoy #2	Good	Gun string #2	GOOD	Acoustic good																	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good																	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good																	
				SP spacing: 25.0m																	
				line status:		Complete															

<b>Seq# 002</b>		<b>Line Name: MGL1801M1020</b>		<b>NAVIGATION</b>		DATE: 2018-01-10		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE													
		<b>Line Brg : 301.869 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 10															
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand																
DC SOL: -30.5 m	DEPTH SOL : 3495.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																		
DC EOL: -12.7 m	DEPTH EOL : 90.2 m		NAVIGATION SYSTEM USED: SeaPath 330																		
BSP SOL: 4.7 kts	FEATHER SOL: 04.4 °		NAVIGATION SYSTEM USED: C-Nav2000																		
BSP EOL: 4.3 kts	FEATHER EOL: -07.3 °		NAVIGATION SYSTEM USED: POSMV																		
WEATHER		MAX FEATHER: -07.3 °		GRAVITY METER: BMG-II: used, SN223																	
WIND SOL: ENE 6.7 kts	MAGNETOMETER: None																				
WIND EOL: ENE 6.7 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold																	
SEAS EOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	David Martinson																	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						<b>VESSEL POSITION</b>												
936	04:42	SOL	Start of line - line aquired with shot layback of 265, COS is 290						<b>Shotpoints</b>	<b>Latitude (S)</b>	<b>Longitude (E)</b>										
								FSP	936	-39° 00' 16.428"	179° 02' 37.605"										
								LSP	3524	-38° 42' 21.852"	178° 24' 12.476"										
								NAVIGATION OFFSET APPLIED <table border="1"> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>290.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>465.00m</td> </tr> <tr> <td>COS - CNG</td> <td>175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>377.00m</td> </tr> </table>				NRP - Stern	29.5m	NRP - COS	290.0m	NRP - CNG	465.00m	COS - CNG	175.00m	NRP - CMP	377.00m
NRP - Stern	29.5m																				
NRP - COS	290.0m																				
NRP - CNG	465.00m																				
COS - CNG	175.00m																				
NRP - CMP	377.00m																				
3524	12:19	EOL	End of line																		

<b>Posnet locations &amp; remarks: good - none - intermittent</b>				Acoustic good	SP spacing: 25.0m
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>		
<b>Tailbuoy #2</b>	<b>Good</b>	<b>Gun string #2</b>	<b>GOOD</b>		
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>GOOD</b>		
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>		
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 003</b>	<b>Line Name: MGL1801M1204</b>		<b>NAVIGATION</b>		DATE: 2018-01-10		Lamont-Doherty Earth Observatory	
	<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 010		COLUMBIA UNIVERSITY   EARTH INSTITUTE	
<b>CLIENT: NSF - Nathan Bangs, ShouShou Han</b>			<b>SURVEY: Bangs 3D</b>		<b>AREA: New Zealand</b>			
DC SOL: 9.5 m	DEPTH SOL : 124.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -0.8 m	DEPTH EOL : 3523.3 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.6 kts	FEATHER SOL: 15.2 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.6 kts	FEATHER EOL: -00.1 °		NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER: 15.6 °		GRAVITY METER: BMG-II: used, SN223				
WIND SOL: W 8 kts					MAGNETOMETER: None			
WIND EOL: SW 10 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold				
SEAS EOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	David Martinson				

SP	UTC	EVENT	COMMENTS	VESSEL POSITION												
3491	14:21	SOL	Start of line	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Shotpoints</th> <th style="width: 10%;">Latitude (S)</th> <th style="width: 10%;">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3491</td> <td>-38° 38' 44.199"</td> <td>178° 25' 11.485"</td> </tr> <tr> <td>LSP 879</td> <td>-38° 57' 35.312"</td> <td>179° 06' 14.391"</td> </tr> </tbody> </table>	Shotpoints	Latitude (S)	Longitude (E)	FSP 3491	-38° 38' 44.199"	178° 25' 11.485"	LSP 879	-38° 57' 35.312"	179° 06' 14.391"			
Shotpoints	Latitude (S)	Longitude (E)														
FSP 3491	-38° 38' 44.199"	178° 25' 11.485"														
LSP 879	-38° 57' 35.312"	179° 06' 14.391"														
879	21:52	EOL	End of line	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td style="text-align: right;">29.5m</td> </tr> <tr> <td>NRP - COS</td> <td style="text-align: right;">290.0m</td> </tr> <tr> <td>NRP - CNG</td> <td style="text-align: right;">465.00m</td> </tr> <tr> <td>COS - CNG</td> <td style="text-align: right;">175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td style="text-align: right;">377.00m</td> </tr> </tbody> </table>	NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	290.0m	NRP - CNG	465.00m	COS - CNG	175.00m	NRP - CMP	377.00m
NAVIGATION OFFSET APPLIED																
NRP - Stern	29.5m															
NRP - COS	290.0m															
NRP - CNG	465.00m															
COS - CNG	175.00m															
NRP - CMP	377.00m															

Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good
Tailbuoy #2	Good	Gun string #2	GOOD	Acoustic good
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good

SP spacing: 25.0m		<b>line status:</b> Complete
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<b>Seq# 004</b>		<b>Line Name: MGL1801M1028</b>		<b>NAVIGATION</b>		DATE: 2018-01-11		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.869 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 11			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -30.9 m		DEPTH SOL : 3496.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 4.5 m		DEPTH EOL : 94.4 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.7 kts		FEATHER SOL: 05.8 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.5 kts		FEATHER EOL: -05.2 °		NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER: -10.0 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: SW 9 kts				MAGNETOMETER: None					
WIND EOL: NNE 4.2 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 1.0 m		12:00 - 24:00		Gilles Guerin		00:00 - 12:00		Todd Jensvold	
SEAS EOL: 1.0 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		David Martinson	
SP	UTC	EVENT	COMMENTS						
924	00:05	SOL	Start of line						
						VESSEL POSITION			
				Shotpoints		Latitude (S)		Longitude (E)	
				FSP		924		39° 00' 12.618"	
				LSP		3525		38° 42' 12.203"	
								179° 03' 04.813"	
								178° 24' 17.491"	
								NAVIGATION OFFSET APPLIED	
								NRP - Stern	
								29.5m	
								NRP - COS	
								290.0m	
								NRP - CNG	
								465.00m	
								COS - CNG	
								175.00m	
								NRP - CMP	
								377.00m	
3525	07:46	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Good</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete

<b>Seq# 005</b>		<b>Line Name: MGL1801M1212</b>		<b>NAVIGATION</b>		DATE: 2018-01-11		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 11			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: 19.8 m	DEPTH SOL : 272.8 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 3.8 m	DEPTH EOL : 3525.0 m			NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.7 kts	FEATHER SOL: -02.7 °			NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.6 kts	FEATHER EOL: 00.8 °			NAVIGATION SYSTEM USED: POSMV					
WEATHER			MAX FEATHER: 07.2 °			GRAVITY METER: BMG-II: used, SN223			
WIND SOL: N 5.9 kts						MAGNETOMETER: None			
WIND EOL: S 4 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>	<u>shift hours</u>	<u>watch personnel</u>			
SEAS SOL: 1.0 m	12:00 - 24:00	Gilles Guerin	00:00 - 12:00	Todd Jensvold					
SEAS EOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	David Martinson					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3415	10:02	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	3415	38° 39' 56.330"		178° 28' 41.598"					
LSP	878	-38° 57' 27.463"		179° 06' 21.518"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		290.0m							
NRP - CNG		455.00m							
COS - CNG		172.00m							
NRP - CMP		372.50m							
878	17:25	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Good</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete



<b>Seq# 006</b>		<b>Line Name: MGL1801M1036</b>		<b>NAVIGATION</b>		DATE: 2018-01-11		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE																
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 11																		
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand																			
DC SOL: -57.0 m	DEPTH SOL : 3497.6 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: 2.6 m	DEPTH EOL : 95.2 m		NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 4.7 kts	FEATHER SOL: 12.4 °		NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 4.3 kts	FEATHER EOL: -04.8 °		NAVIGATION SYSTEM USED: POSMV																					
WEATHER		MAX FEATHER: 12.4 °		GRAVITY METER: BMG-II: used, SN223																				
WIND SOL: ESE 8 kts	MAGNETOMETER: GeoMetrics: used																							
WIND EOL: E 12.1 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin																				
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold																				
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>							<b>VESSEL POSITION</b>														
851	19:31	SOL	Start of line							<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>											
										FSP	851	39° 00' 33.388"		179° 04' 12.533"										
										LSP	3525	38° 42' 03.945"		178° 24' 23.901"										
2411	00:00	Midnight								NAVIGATION OFFSET APPLIED <table border="1"> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>290.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>455.00m</td> </tr> <tr> <td>COS - CNG</td> <td>172.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>372.50m</td> </tr> </table>					NRP - Stern	29.5m	NRP - COS	290.0m	NRP - CNG	455.00m	COS - CNG	172.00m	NRP - CMP	372.50m
NRP - Stern	29.5m																							
NRP - COS	290.0m																							
NRP - CNG	455.00m																							
COS - CNG	172.00m																							
NRP - CMP	372.50m																							
3525	03:15	EOL	End of line																					

<div style="border: 1px dashed black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	Good	Gun string #2	GOOD	Acoustic good			
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good			
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good			
					SP spacing:	25.0m	
					<b>line status:</b>	<b>Complete</b>	

<b>Seq# 007</b>		<b>Line Name: MGL1801M1220</b>		<b>NAVIGATION</b>		DATE: 2018-01-12		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 12			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 6.4 m	DEPTH SOL : 133.2 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 33.0 m	DEPTH EOL : 3523.0 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.2 kts	FEATHER SOL: 12.7 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.3 kts	FEATHER EOL: -00.1 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 09.0 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: ENE 10.5 kts		MAGNETOMETER: None							
WIND EOL: ENE 9 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>					
SEAS SOL: 0.5 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3480	5:13	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	3480	38° 39' 20.485"		178° 27' 50.563"					
LSP	878	38° 57' 19.947"		179° 06' 27.303"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		290.0m							
NRP - CNG		455.00m							
COS - CNG		172.00m							
NRP - CMP		372.50m							
878	12:46	EOL	End of line						

Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	Good	Gun string #2	GOOD	Acoustic good		
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	SP spacing:	25.0m
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	line status:	Complete

<b>Seq# 008</b>		<b>Line Name: MGL1801M1044</b>		<b>NAVIGATION</b>		DATE: 2018-01-12		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 12			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -81.8 m	DEPTH SOL : 3503.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -13.0 m	DEPTH EOL : 93.2 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.7 kts	FEATHER SOL: 43.5 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.7 kts	FEATHER EOL: -06.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 43.5 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: ENE 9 kts		MAGNETOMETER: None							
WIND EOL: NNE 15 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
774	14:41	SOL	Start of line						
				<b>VESSEL POSITION</b>					
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>		
				FSP	774	39° 00' 59.103"	179° 05' 19.602"		
				LSP	3524	38° 41' 56.442"	178° 24' 30.822"		
				<b>NAVIGATION OFFSET APPLIED</b>					
				NRP - Stern	29.5m				
				NRP - COS	290.0m				
				NRP - CNG	455.00m				
				COS - CNG	172.00m				
				NRP - CMP	372.50m				
3524	22:50	EOL	End of line						

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 009</b>		<b>Line Name: MGL1801M1228</b>		<b>NAVIGATION</b>		DATE: 2018-01-13		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 13				
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand					
DC SOL: 14.8 m	DEPTH SOL : 126.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: 13.9 m	DEPTH EOL : 3523.4 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.5 kts	FEATHER SOL: 06.7 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.5 kts	FEATHER EOL: 02.9 °		NAVIGATION SYSTEM USED: POSMV							
WEATHER		MAX FEATHER: 07.9 °		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: NE 15 kts		MAGNETOMETER: None								
WIND EOL: NNE 16 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>			
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin						
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold						
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>							
3502	00:58	SOL	Start of line							
				<b>VESSEL POSITION</b>						
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>			
				FSP	3502	38° 39' 03.223"		178° 27' 37.315"		
				LSP	878	38° 57' 10.994"		179° 06' 33.952"		
				<b>NAVIGATION OFFSET APPLIED</b>						
				NRP - Stern		29.5m				
				NRP - COS		290.0m				
				NRP - CNG		455.00m				
				COS - CNG		172.00m				
				NRP - CMP		372.50m				
878	08:34	EOL	End of line							

<b>Posnet locations &amp; remarks: good - none - intermittent</b>				
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>GOOD</b>	Acoustic good
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good
			<b>SP spacing:</b>	25.0m
			<b>line status:</b>	<b>Complete</b>



<b>Seq# 010</b>		<b>Line Name: MGL1801M1052</b>		<b>NAVIGATION</b>		DATE: 2018-01-13		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 13				
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand					
DC SOL: -40.6 m	DEPTH SOL : 3501.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: -50.3 m	DEPTH EOL : 92.6 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.7 kts	FEATHER SOL: 02.1 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.6 kts	FEATHER EOL: -05.6 °		NAVIGATION SYSTEM USED: POSMV							
WEATHER		MAX FEATHER: 09.0 °		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: NNE 17.4 kts		MAGNETOMETER: None								
WIND EOL: NNE 11 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>			
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin						
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold						
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>							
908	10:46	SOL	Start of line							
				VESSEL POSITION						
				Shotpoints	Latitude (S)		Longitude (E)			
				FSP	909	38° 59' 53.936"		179° 03' 26.039"		
				LSP	3524	38° 41' 49.148"		178° 24' 36.434"		
				NAVIGATION OFFSET APPLIED						
				NRP - Stern		29.5m				
				NRP - COS		285.0m				
				NRP - CNG		455.00m				
				COS - CNG		170.00m				
				NRP - CMP		370.00m				
3524	18:21	EOL	End of line							

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 011</b>		<b>Line Name: MGL1801M1236</b>		<b>NAVIGATION</b>		DATE: 2018-01-13		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE																	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 13																			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand																				
DC SOL: 11.4 m	DEPTH SOL : 108.7 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																						
DC EOL: 41.7 m	DEPTH EOL : 3526.9 m		NAVIGATION SYSTEM USED: SeaPath 330																						
BSP SOL: 4.5 kts	FEATHER SOL: 30.7 °		NAVIGATION SYSTEM USED: C-Nav2000																						
BSP EOL: 4.3 kts	FEATHER EOL: 05.2 °		NAVIGATION SYSTEM USED: POSMV																						
WEATHER		MAX FEATHER: 30.7 °		GRAVITY METER: BMG-II: used, SN223																					
WIND SOL: NNE 11 kts		MAGNETOMETER: None																							
WIND EOL: NE 16.3 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin																					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold																					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																						
3562	20:07	SOL	Start of line																						
2215	0000	MIDNIGHT																							
879	04:03	EOL	End of line																						
				<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3562</td> <td>38° 38' 30.161"</td> <td colspan="2">178° 26' 51.425"</td> </tr> <tr> <td>LSP 879</td> <td>38° 57' 03.393"</td> <td colspan="2">179° 06' 39.668"</td> </tr> </tbody> </table>						VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)		FSP 3562	38° 38' 30.161"	178° 26' 51.425"		LSP 879	38° 57' 03.393"	179° 06' 39.668"	
VESSEL POSITION																									
Shotpoints	Latitude (S)	Longitude (E)																							
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LSP 879	38° 57' 03.393"	179° 06' 39.668"																							
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NRP - CMP	370.00m																								

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 012</b>		<b>Line Name: MGL180111052</b>		<b>NAVIGATION</b>		DATE: 2018-01-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 14			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 0.2 m	DEPTH SOL : 3499.6 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 272.0 m	DEPTH EOL :		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.7 kts	FEATHER SOL: -08.7 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.7 kts	FEATHER EOL: -11.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: -11.4 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: ENE12.5 kts		MAGNETOMETER: None							
WIND EOL: NNE 16 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
942	06:40	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	942	38° 59' 39.348"		179° 02' 57.731"					
LSP	3524	38° 41' 40.295"		178° 24' 43.617"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3524	14:17	EOL	End of line						

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete



<b>Seq# 013</b>		<b>Line Name: MGL1801M1244</b>		<b>NAVIGATION</b>		DATE: 2018-01-14		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 14			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: 38.5 m	DEPTH SOL : 111.8 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 30.9 m	DEPTH EOL : 3523.8 m			NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.8 kts	FEATHER SOL: 23.9 °			NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.3 kts	FEATHER EOL: 08.0 °			NAVIGATION SYSTEM USED: POSMV					
WEATHER			MAX FEATHER: 23.9 °			GRAVITY METER: BMG-II: used, SN223			
WIND SOL: NNE 15 kts			MAGNETOMETER: None						
WIND EOL: NE 18.9 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3548	16:05	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	3548	38° 38' 27.832"		178° 27' 08.430"					
LSP	829	38° 56' 54.152"		179° 06' 45.032"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
829	23:59	EOL	End of line						

<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; height: 20px;"> </td><td style="width: 10%;"> </td><td style="width: 10%;"> </td><td style="width: 10%;"> </td><td style="width: 60%;"> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td style="height: 20px;"> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																																								
Posnet locations & remarks: good - none - intermittent					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: right;">SP spacing:</td> <td style="width: 15%;">25.0m</td> </tr> <tr> <td style="text-align: right;"><b>line status:</b></td> <td style="text-align: center;">Complete</td> </tr> </table>		SP spacing:	25.0m	<b>line status:</b>	Complete																																														
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Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good																																																				



<b>Seq# 014</b>		<b>Line Name: MGL1801M1060</b>		<b>NAVIGATION</b>		DATE: 2018-01-15		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE																	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 15																			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand																			
DC SOL: -8.2 m		DEPTH SOL : 3503.5 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: 231.1 m		DEPTH EOL : 91.1 m		NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 4.6 kts		FEATHER SOL: -04.3 °		NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 4.7 kts		FEATHER EOL: -12.9 °		NAVIGATION SYSTEM USED: POSMV																					
WEATHER		MAX FEATHER: -12.9 °		GRAVITY METER: BMG-II: used, SN223																					
WIND SOL: ENE 15.2 kts		MAGNETOMETER: None																							
WIND EOL: NE 17.4 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		Gilles Guerin																	
SEAS EOL: 1.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold																	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																						
943	02:20	SOL	Start of line																						
			<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>943</td> <td>38° 59' 30.811"</td> <td>179° 03' 03.021"</td> </tr> <tr> <td>LSP</td> <td>3524</td> <td>38° 41' 33.144"</td> <td>178° 24' 49.189"</td> </tr> </tbody> </table>							VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)		FSP	943	38° 59' 30.811"	179° 03' 03.021"	LSP	3524	38° 41' 33.144"	178° 24' 49.189"
VESSEL POSITION																									
Shotpoints	Latitude (S)	Longitude (E)																							
FSP	943	38° 59' 30.811"	179° 03' 03.021"																						
LSP	3524	38° 41' 33.144"	178° 24' 49.189"																						
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COS - CNG	175.00m																								
NRP - CMP	367.40m																								
3524	10:00	EOL	End of line																						

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
				SP spacing:	25.0m
				line status:	Complete

<b>Seq# 015</b>		<b>Line Name: MGL1801M1252</b>		<b>NAVIGATION</b>		<b>DATE: 2018-01-15</b>		 	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		<b>JULIAN DAY: 15</b>			
<b>CLIENT: NSF - Nathan Bangs, ShouShou Han</b>			<b>SURVEY: Bangs 3D</b>		<b>AREA: New Zealand</b>				
DC SOL: 0.9 m		DEPTH SOL : 118.7 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 0.5 m		DEPTH EOL : 3527.0 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.5 kts		FEATHER SOL: 28.4 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.8 kts		FEATHER EOL: 06.4 °		NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER: 28.4 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: NE 19 kts		MAGNETOMETER: None							
WIND EOL: NE 19 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 1.0 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		Gilles Guerin	
SEAS EOL: 1.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3548	11:49	SOL	Start of line						
						<b>VESSEL POSITION</b>			
				<b>Shotpoints</b>		<b>Latitude (S)</b>		<b>Longitude (E)</b>	
				FSP	3548	38° 38' 18.438"	178° 27' 15.612"		
				LSP	878	38° 56' 45.200"	179° 06' 52.878"		
				<b>NAVIGATION OFFSET APPLIED</b>					
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
878	19:39	EOL	End of line						

Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good

SP spacing: 25.0m

<b>line status:</b>	Complete
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<b>Seq# 016</b>		<b>Line Name:</b> MGL1801M1068	<b>NAVIGATION</b>	<b>DATE:</b> 2018-01-15	<b>Lamont-Doherty Earth Observatory</b>	
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 15	<b>COLUMBIA UNIVERSITY   EARTH INSTITUTE</b>	
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand			
<b>DC SOL:</b> -17.5 m	<b>DEPTH SOL :</b> 3505.0 m	<b>NAVIGATION SYSTEM USED:</b> C-Nav3050 - Primary				
<b>DC EOL:</b> 158.7 m	<b>DEPTH EOL :</b> 92.6 m	<b>NAVIGATION SYSTEM USED:</b> SeaPath 330				
<b>BSP SOL:</b> 4.7 kts	<b>FEATHER SOL:</b> 00.6 °	<b>NAVIGATION SYSTEM USED:</b> C-Nav2000				
<b>BSP EOL:</b> 4.4 kts	<b>FEATHER EOL:</b> -05.7 °	<b>NAVIGATION SYSTEM USED:</b> POSMV				
<b>WEATHER</b>	<b>MAX FEATHER:</b> -08.2 °	<b>GRAVITY METER: BMG-II: used, SN223</b>				
<b>WIND SOL:</b> NE 21 kts	<b>MAGNETOMETER: None</b>					
<b>WIND EOL:</b> NE 21.1 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>		
<b>SEAS SOL:</b> 1.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin		
<b>SEAS EOL:</b> 1.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>			
903	22:18	SOL	Start of line			
<b>VESSEL POSITION</b>						
		<b>Shotpoints</b>	<b>Latitude (S)</b>	<b>Longitude (E)</b>		
FSP	903	38° 59' 39.186"	179° 03' 44.952"			
LSP	3525	38° 41' 26.383"	178° 24' 53.133"			
1477	00:00	Midnight				
<b>NAVIGATION OFFSET APPLIED</b>						
		<b>NRP - Stern</b>	29.5m			
		<b>NRP - COS</b>	280.0m			
		<b>NRP - CNG</b>	455.00m			
		<b>COS - CNG</b>	175.00m			
		<b>NRP - CMP</b>	367.40m			
3525	06:09	EOL	End of line			

Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good		
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good		
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good		
					SP spacing: 25.0m	
					line status: Complete	

<b>Seq# 017</b>		<b>Line Name: MGL1801M1260</b>		<b>NAVIGATION</b>		DATE: 2018-01-16		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 16			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: 43.9 m	DEPTH SOL : 137.2 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 37.1 m	DEPTH EOL : 3523.0 m			NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.7 kts	FEATHER SOL: 20.4 °			NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.6 kts	FEATHER EOL: 06.2 °			NAVIGATION SYSTEM USED: POSMV					
WEATHER			MAX FEATHER: 20.4 °			GRAVITY METER: BMG-II: used, SN223			
WIND SOL: NNE 28.1 kts			MAGNETOMETER: None						
WIND EOL: NNE 25 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.5 m	12:00 - 24:00		Alan Thompson		00:00 - 12:00		Gilles Guerin		
SEAS EOL: 1.5 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3459	08:13	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	3459	38° 38' 48.420"		178° 28' 40.008"					
LSP	879	38° 56' 37.588"		179° 06' 57.633"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
879	15:47	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
					<b>line status: Complete</b>



<b>Seq# 018</b>		<b>Line Name: MGL1801M1076</b>		<b>NAVIGATION</b>		DATE: 2018-01-16		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 16			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: 5.1 m		DEPTH SOL : 3508.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 104.2 m		DEPTH EOL : 91.6 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.4 kts		FEATHER SOL: 12.0 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.5 kts		FEATHER EOL: -09.8 °		NAVIGATION SYSTEM USED: POSMV					
WEATHER		MAX FEATHER: 12.0 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: NNE 24 kts		MAGNETOMETER: None							
WIND EOL: NNE 32 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 1.5 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		Gilles Guerin	
SEAS EOL: 2.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold	
SP	UTC	EVENT	COMMENTS						
850	17:52	SOL	Start of line						
						VESSEL POSITION			
				Shotpoints		Latitude (S)		Longitude (E)	
				FSP 850		38° 59' 52.033"		179° 04' 39.197"	
				LSP 3524		38° 41' 19.969"		178° 24' 59.224"	
2992	0000	MIDNIGHT							
						NAVIGATION OFFSET APPLIED			
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
3524	01:49	EOL	End of line						

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good			
Tailbuoy #3	Failed	Gun string #3	GOOD	Acoustic good			
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good			
					SP spacing: 25.0m		
					line status: Complete		

<b>Seq# 019</b>		<b>Line Name: MGL1801M1268</b>		<b>NAVIGATION</b>		DATE: 2018-01-17		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 17			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 57.6 m	DEPTH SOL : 132.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 51.0 m	DEPTH EOL : 206.5 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.8 kts	FEATHER SOL: 22.3 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.7 kts	FEATHER EOL: 15.1 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: NNE 37.1 kts		MAGNETOMETER: None							
WIND EOL: N 35.2 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>					
SEAS SOL: 2M	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 2.5M	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3485	4:02	SOL	Start of line						
				<b>VESSEL POSITION</b>					
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>		
				FSP	3485	38 38 29.605	178 28 23.026		
				LSP	3350	38 39 25.702	178 30 22.901		
				<b>NAVIGATION OFFSET APPLIED</b>					
				NRP - Stern	29.5m				
				NRP - COS	280.0m				
				NRP - CNG	455.00m				
				COS - CNG	175.00m				
				NRP - CMP	367.40m				
3350	4:26	EOL	End of line, Line aborted d/t weather conditions						

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Incomplete</b>



<b>Seq# 020</b>		<b>Line Name: MGL1801M1268A</b>		<b>NAVIGATION</b>		DATE: 2018-01-18		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 18			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: 76.9 m	DEPTH SOL : 128.8 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 73.2 m	DEPTH EOL : 3526.2 m			NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 5.1 kts	FEATHER SOL: -02.0 °			NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.7 kts	FEATHER EOL: -00.3 °			NAVIGATION SYSTEM USED: POSMV					
WEATHER			MAX FEATHER: 08.6 °			GRAVITY METER: BMG-II: used, SN223			
WIND SOL: N 23.9 kts			MAGNETOMETER: None						
WIND EOL: N 25 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.5 m	12:00 - 24:00		Alan Thompson		00:00 - 12:00		Gilles Guerin		
SEAS EOL: 2.0 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3494	04:53	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	3494	38° 38' 26.395"		178° 28' 14.650"					
LSP	879	38° 56' 30.219"		179° 07' 03.203"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
879	12:25	EOL	End of line						

Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD			Acoustic good
Tailbuoy #2	Failed	Gun string #2	GOOD			Acoustic good
Tailbuoy #3	Failed	Gun string #3	None			Acoustic good
Tailbuoy #4	Good	Gun string #4	GOOD			Acoustic good
				SP spacing:	25.0m	
				<b>line status:</b>	<b>Complete</b>	

<b>Seq# 021</b>		<b>Line Name: MGL1801M1084</b>		<b>NAVIGATION</b>		DATE: 2018-01-18		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 18			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -13.7 m	DEPTH SOL : 3506.9 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -22.8 m	DEPTH EOL : 97.3 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.9 kts	FEATHER SOL: 08.5 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: -11.8 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 12.0 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 25 kts		MAGNETOMETER: None							
WIND EOL: N 15 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 2.0 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 1.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
885	14:35	SOL	Start of line						
VESSEL POSITION									
		Shotpoints	Latitude (S)		Longitude (E)				
FSP	885	38° 59' 29.735"		179° 04' 13.783"					
LSP	3524	38° 41' 15.172"		178° 25' 02.932"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3524	22:10	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>				Acoustic good
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	
				SP spacing: 25.0m
				<b>line status:</b> Complete



<b>Seq# 022</b>		<b>Line Name: MGL1801M1276</b>		<b>NAVIGATION</b>		<b>DATE: 2018-01-18</b>		 																	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		<b>JULIAN DAY: 18</b>																			
<b>CLIENT: NSF - Nathan Bangs, ShouShou Han</b>			<b>SURVEY: Bangs 3D</b>		<b>AREA: New Zealand</b>																				
DC SOL: 78.7 m		DEPTH SOL : 141.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: 28.3 m		DEPTH EOL : 3525.3 m		NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 4.9 kts		FEATHER SOL: 14.6 °		NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 4.8 kts		FEATHER EOL: 02.3 °		NAVIGATION SYSTEM USED: POSMV																					
<b>WEATHER</b>		MAX FEATHER: 14.6 °		GRAVITY METER: BMG-II: used, SN223																					
WIND SOL: N 15 kts		MAGNETOMETER: None																							
WIND EOL: N 24.6 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0 m		12:00 - 24:00		Alan Thompson		00:00 - 12:00		Gilles Guerin																	
SEAS EOL: 1.5 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold																	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																						
3453	00:22	SOL	Start of line																						
<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3453</td> <td>38° 38' 35.194"</td> <td colspan="2">178° 28' 57.336"</td> </tr> <tr> <td>LSP 879</td> <td>38° 56' 20.557"</td> <td colspan="2">179° 07' 10.395"</td> </tr> </tbody> </table>										VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)		FSP 3453	38° 38' 35.194"	178° 28' 57.336"		LSP 879	38° 56' 20.557"	179° 07' 10.395"	
VESSEL POSITION																									
Shotpoints	Latitude (S)	Longitude (E)																							
FSP 3453	38° 38' 35.194"	178° 28' 57.336"																							
LSP 879	38° 56' 20.557"	179° 07' 10.395"																							
<table border="1"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>280.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>455.00m</td> </tr> <tr> <td>COS - CNG</td> <td>175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>367.40m</td> </tr> </tbody> </table>										NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	280.0m	NRP - CNG	455.00m	COS - CNG	175.00m	NRP - CMP	367.40m				
NAVIGATION OFFSET APPLIED																									
NRP - Stern	29.5m																								
NRP - COS	280.0m																								
NRP - CNG	455.00m																								
COS - CNG	175.00m																								
NRP - CMP	367.40m																								
879	07:44	EOL	End of line																						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete

<b>Seq# 023</b>		<b>Line Name: MGL1801M1092</b>		<b>NAVIGATION</b>		DATE: 2018-01-19		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 19			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 6.3 m	DEPTH SOL : 3506.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -98.4 m	DEPTH EOL : 103.1 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts	FEATHER SOL: -01.3 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.6 kts	FEATHER EOL: -06.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 23.1 kts				MAGNETOMETER: None					
WIND EOL: N 10 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.5 m	12:00 - 24:00	Alan Thompson	00:00 - 12:00	Gilles Guerin					
SEAS EOL: 1.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
936	10:03	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	936	38° 58' 59.790"		179° 03' 34.956"					
LSP	3525	38 41 08.513		178 25 06.829					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3525	17:38	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 024</b>		<b>Line Name: MGL1801M1284</b>		<b>NAVIGATION</b>		DATE: 2018-01-19		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 19				
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand					
DC SOL: 0.5 m	DEPTH SOL : 135.9 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: 121.5 m	DEPTH EOL : 3523.5 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.6 kts	FEATHER SOL: 16.6 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.8 kts	FEATHER EOL: -01.6 °		NAVIGATION SYSTEM USED: POSMV							
WEATHER		MAX FEATHER: 16.6 °		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: N 11 kts		MAGNETOMETER: None								
WIND EOL: N 14.1 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>			
SEAS SOL: 1.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin						
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold						
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>							
3486	19:43	SOL	Start of line							
				<b>VESSEL POSITION</b>						
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>			
				FSP	3486	38° 38' 10.915"		178° 28' 36.113"		
1990	00:00	MIDNIGHT								
				LSP	879	38° 56' 14.781"		179° 07' 14.763"		
				<b>NAVIGATION OFFSET APPLIED</b>						
				NRP - Stern		29.5m				
				NRP - COS		280.0m				
				NRP - CNG		455.00m				
				COS - CNG		175.00m				
				NRP - CMP		367.40m				
879	03:08	EOL	End of line							

<b>Posnet locations &amp; remarks: good - none - intermittent</b>						
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>		Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>		Acoustic good	SP spacing: 25.0m
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>		Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>		Acoustic good	
					<b>line status:</b>	<b>Complete</b>

<b>Seq# 025</b>		<b>Line Name: MGL1801M1100</b>		<b>NAVIGATION</b>		DATE: 2018-01-20		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 20				
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand					
DC SOL: -35.2 m		DEPTH SOL : 3504.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL:		DEPTH EOL :		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts		FEATHER SOL: 04.6 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL:		FEATHER EOL:		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: N 17.1 kts				MAGNETOMETER: None						
WIND EOL:		<u>shift hours</u> <u>shift leaders</u> <u>shift hours</u> <u>watch personnel</u>								
SEAS SOL: 1M		12:00 - 24:00      Alan Thompson      12:00 - 24:00      Gilles Guerin								
SEAS EOL:		0:00-12:00      David Martinson      00:00 - 12:00      Todd Jensvold								
SP	UTC	EVENT	COMMENTS							
924	05:26	SOL	Start of line							
				VESSEL POSITION						
				Shotpoints	Latitude (S)		Longitude (E)			
				FSP	924	38° 58' 57.516"		179° 03' 51.144"		
				LSP						
				NAVIGATION OFFSET APPLIED						
				NRP - Stern		29.5m				
				NRP - COS		280.0m				
				NRP - CNG		455.00m				
				COS - CNG		175.00m				
				NRP - CMP		367.40m				
		EOL		End of line						

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	SP spacing: 25.0m
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	<b>line status:</b> Complete



<b>Seq# 026</b>		<b>Line Name: MGL1801M1292</b>		<b>NAVIGATION</b>		<b>DATE: 2018-01-20</b>		<b>Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE</b>	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		<b>JULIAN DAY: 20</b>			
<b>CLIENT: NSF - Nathan Bangs, ShouShou Han</b>			<b>SURVEY: Bangs 3D</b>		<b>AREA: New Zealand</b>				
DC SOL: 18.8 m		DEPTH SOL : 119.9 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 71.6 m		DEPTH EOL : 3526.0 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.6 kts		FEATHER SOL: 22.4 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.8 kts		FEATHER EOL: 02.4 °		NAVIGATION SYSTEM USED: POSMV					
<b>WEATHER</b>		MAX FEATHER: 22.4 °		<b>GRAVITY METER: BMG-II: used, SN223</b>					
WIND SOL: WNW 8 kts		<b>MAGNETOMETER: None</b>							
WIND EOL: W 10 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 1.0 m		12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin	
SEAS EOL: 1.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3532	15:03	SOL	Start of line						
						<b>VESEL POSITION</b>			
				<b>Shotpoints</b>		<b>Latitude (S)</b>		<b>Longitude (E)</b>	
				FSP 3532		38° 37' 44.307"		178° 28' 02.210"	
				LSP 879		38° 56' 05.417"		179° 07' 23.049"	
				<b>NAVIGATION OFFSET APPLIED</b>					
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
879	22:45	EOL	End of line						

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Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
					line status: Complete

<b>Seq# 027</b>		<b>Line Name: MGL1801M1108</b>		<b>NAVIGATION</b>		DATE: 2018-01-21		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 21			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -61.2 m	DEPTH SOL : 3506.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -94.8 m	DEPTH EOL : 104.6 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.7 kts	FEATHER SOL: 00.7 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: -02.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: -02.9 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: S 2.9 kts	MAGNETOMETER: None								
WIND EOL: N 8.7 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 0.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 0.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
923	02:08	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	923	38° 58' 50.267"		179° 03' 57.817"					
LSP	3524	38° 40' 52.135"		178° 25' 20.558"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3524	09:49	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>							
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good			
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good			
					SP spacing:	25.0m	
					<b>line status:</b>	<b>Complete</b>	

<b>Line Name:</b> MGL1801M1300		<b>NAVIGATION</b>		<b>DATE:</b> 2018-01-21		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
<b>Seq# 028</b>		<b>Line Brg :</b> 121.8 °		<b>LINE LOGS</b>			
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han			<b>SURVEY:</b> Bangs 3D		<b>AREA:</b> New Zealand		
DC SOL: 0.4 m	DEPTH SOL : 143.5 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL: 117.3 m	DEPTH EOL : 3528.0 m		NAVIGATION SYSTEM USED: SeaPath 330				
BSP SOL: 4.8 kts	FEATHER SOL: 16.5 °		NAVIGATION SYSTEM USED: C-Nav2000				
BSP EOL: 4.8 kts	FEATHER EOL: 00.3 °		NAVIGATION SYSTEM USED: POSMV				
<b>WEATHER</b>		MAX FEATHER: 16.5 °		GRAVITY METER: BMG-II: used, SN223			
WIND SOL: W 6 kts	MAGNETOMETER: None						
WIND EOL: N 15 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>			
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin			
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold			
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>				
3463	12:06	SOL	Start of line				
				<b>VESSEL POSITION</b>			
				<b>Shotpoints</b>	<b>Latitude (S)</b>	<b>Longitude (E)</b>	
				FSP 3463	38° 38' 04.843"	178° 29' 09.340"	
				LSP 879	38° 55' 57.907"	179° 07' 27.534"	
				<b>NAVIGATION OFFSET APPLIED</b>			
				NRP - Stern	29.5m		
				NRP - COS	280.0m		
				NRP - CNG	455.00m		
				COS - CNG	175.00m		
				NRP - CMP	367.40m		
879	19:26	EOL	End of line				

Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good		
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good		
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good		
					SP spacing:	25.0m
					line status:	Complete

Line Name: MGL1801M1116      **NAVIGATION**      DATE: 2018-01-21  
 Seq# 029      Line Brg : 301.8 °      **LINE LOGS**      JULIAN DAY: 21

CLIENT: NSF - Nathan Bangs, ShouShou Han      SURVEY: Bangs 3D      AREA: New Zealand

DC SOL: -13.0 m      DEPTH SOL : 3507.0 m      NAVIGATION SYSTEM USED: C-Nav3050 - Primary  
 DC EOL: -106.2 m      DEPTH EOL : 102.3 m      NAVIGATION SYSTEM USED: SeaPath 330  
 BSP SOL: 4.6 kts      FEATHER SOL: 14.3 °      NAVIGATION SYSTEM USED: C-Nav2000  
 BSP EOL: 4.4 kts      FEATHER EOL: -03.9 °      NAVIGATION SYSTEM USED: POSMV  
 WEATHER      MAX FEATHER: 14.3 °      GRAVITY METER: BMG-II: used, SN223  
 WIND SOL: N 12 kts      MAGNETOMETER: None  
 WIND EOL: N 13.6 kts      shift hours      shift leaders      shift hours      watch personnel  
 SEAS SOL: 1.0 m      12:00 - 24:00      Alan Thompson      12:00 - 24:00      Gilles Guerin  
 SEAS EOL: 1.0 m      0:00-12:00      David Martinson      00:00 - 12:00      Todd Jensvold

SP	UTC	EVENT	COMMENTS	VESSEL POSITION			
886	21:54	SOL	Start of line	Shotpoints	Latitude (S)	Longitude (E)	
				FSP	886	38° 58' 55.805"	179° 04' 28.264"
				LSP	3525	38° 40' 43.700"	178° 25' 25.819"
				NAVIGATION OFFSET APPLIED NRP - Stern      29.5m NRP - COS      280.0m NRP - CNG      455.00m COS - CNG      175.00m NRP - CMP      367.40m			
1584	00:00	MIDNIGHT					
3525	05:43	EOL	End of line				

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
<b>Posnet locations &amp; remarks: good - none - intermittent</b>							
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good			
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good			
					SP spacing: 25.0m		
					<b>line status:</b> Complete		



<b>Seq# 030</b>		<b>Line Name: MGL1801M1308</b>		<b>NAVIGATION</b>		DATE: 2018-01-22		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 22			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 33.5 m	DEPTH SOL : 137.9 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 147.9 m	DEPTH EOL : 3529.0 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.7 kts	FEATHER SOL: 09.4 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.7 kts	FEATHER EOL: -03.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 09.4 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: WNW 8.1 kts		MAGNETOMETER: None							
WIND EOL: N 9 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
3462	07:58	SOL	Start of line						
				VESSEL POSITION					
				Shotpoints	Latitude (S)		Longitude (E)		
				FSP	3462	38° 37' 57.216"		178° 29' 16.723"	
				LSP	879	38° 55' 50.773"		179° 07' 34.054"	
				NAVIGATION OFFSET APPLIED					
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
879	15:21	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 031</b>		<b>Line Name: MGL1801M1012</b>		<b>NAVIGATION</b>		DATE: 2018-01-22		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.9 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 22			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -42.4 m	DEPTH SOL : 3497.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -25.6 m	DEPTH EOL : 98.0 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.9 kts	FEATHER SOL: 16.9 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.2 kts	FEATHER EOL: -06.8 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 16.9 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 9 kts		MAGNETOMETER: None							
WIND EOL: N 9 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
871	18:30	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	871	39° 00' 52.096"		179° 03' 29.520"					
LSP	3525	38° 42' 30.326"		178° 24' 05.336"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
2796	00:00	MIDNIGHT							
3525	02:12	EOL	End of line						

Posnet locations & remarks: good - none - intermittent						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good		
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good		
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good		
					SP spacing:	25.0m
					line status:	Complete

<b>Seq# 032</b>		<b>Line Name: MGL1801M1188</b>		<b>NAVIGATION</b>		DATE: 2018-01-23		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 23			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 6.2 m	DEPTH SOL : 129.2 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 53.5 m	DEPTH EOL : 3521.0 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.8 kts	FEATHER SOL: 15.6 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.6 kts	FEATHER EOL: -02.6 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 15.6 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: NE 15.4 kts		MAGNETOMETER: None							
WIND EOL: N 13 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
3474	04:19	SOL	Start of line						
				VESSEL POSITION					
				Shotpoints	Latitude (S)		Longitude (E)		
				FSP	3474	38° 39' 56.626"		178° 27' 30.919"	
				LSP	879	38° 57' 53.866"		179° 06' 01.192"	
				NAVIGATION OFFSET APPLIED					
				NRP - Stern	29.5m				
				NRP - COS	280.0m				
				NRP - CNG	455.00m				
				COS - CNG	175.00m				
				NRP - CMP	367.40m				
879	11:47	EOL	End of line						

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Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good			
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good			
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good			
					SP spacing: 25.0m		
					line status: Complete		

<b>Seq# 033</b>		<b>Line Name: MGL1801M1004</b>		<b>NAVIGATION</b>		DATE: 2018-01-23		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 23			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -70.5 m	DEPTH SOL : 3494.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -18.6 m	DEPTH EOL : 102.9 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.5 kts	FEATHER SOL: 29.2 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.2 kts	FEATHER EOL: -03.6 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 29.2 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 10 kts		MAGNETOMETER: None							
WIND EOL: N 10 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
709	13:46	SOL	Start of line						
VESSEL POSITION									
		Shotpoints	Latitude (S)		Longitude (E)				
FSP	709	39° 01' 30.546"		179° 04' 26.122"					
LSP	3524	38° 42' 38.472"		178° 23' 59.068"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3524	21:57	EOL	End of line						

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
<b>Posnet locations &amp; remarks: good - none - intermittent</b>							
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good			
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good			
					SP spacing: 25.0m		
					<b>line status:</b> Complete		





<b>Seq# 034</b>		<b>Line Name: MGL1801M1316</b>		<b>NAVIGATION</b>		<b>DATE: 2018-01-24</b>		<b>Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE</b>	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		<b>JULIAN DAY: 24</b>			
<b>CLIENT: NSF - Nathan Bangs, ShouShou Han</b>			<b>SURVEY: Bangs 3D</b>		<b>AREA: New Zealand</b>				
DC SOL: 13.4 m		DEPTH SOL : 151.7 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: 34.9 m		DEPTH EOL : 3532.7 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.8 kts		FEATHER SOL: 10.6 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.5 kts		FEATHER EOL: -02.7 °		NAVIGATION SYSTEM USED: POSMV					
<b>WEATHER</b>		MAX FEATHER: 10.6 °		<b>GRAVITY METER: BMG-II: used, SN223</b>					
WIND SOL: NE 11.9 kts		<b>MAGNETOMETER: None</b>							
WIND EOL: NE 11.4 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 0.5 m		12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin	
SEAS EOL: 1.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3419	00:45	SOL	Start of line						
				<b>VESSEL POSITION</b>					
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>		
				FSP	3419	38° 38' 06.239"		178° 30' 01.672"	
				LSP	879	38° 55' 39.252"		179° 07' 42.797"	
				<b>NAVIGATION OFFSET APPLIED</b>					
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
879	08:05	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
				SP spacing:	25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 035</b>		<b>Line Name: MGL1801M1124</b>		<b>NAVIGATION</b>		DATE: 2018-01-24		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 24			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: -49.2 m	DEPTH SOL : 3505.2 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -11.3 m	DEPTH EOL : 101.7 m			NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.6 kts	FEATHER SOL: 04.3 °			NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.5 kts	FEATHER EOL: 06.8 °			NAVIGATION SYSTEM USED: POSMV					
WEATHER			MAX FEATHER: 08.4 °			GRAVITY METER: BMG-II: used, SN223			
WIND SOL: ENE 6 kts			MAGNETOMETER: None						
WIND EOL: N 9 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin		
SEAS EOL: 1.0 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
989	10:41	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	989	38° 58' 05.967"		179° 03' 11.735"					
LSP	3524	38° 40' 32.697"		178° 25' 34.200"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3524	18:17	EOL	End of line						

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
Posnet locations & remarks: good - none - intermittent							
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good			
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good			
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good			
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good			
					SP spacing: 25.0m		
					line status: Complete		

<b>Seq# 036</b>		Line Name: <b>MGL1801M1324</b>		<b>NAVIGATION</b>		DATE: 2018-01-24		 																	
		Line Brg : 121.8 °		<b>LINE LOGS</b>		JULIAN DAY: 24																			
		CLIENT: NSF - Nathan Bangs, ShouShou Han		SURVEY: Bangs 3D		AREA: New Zealand																			
DC SOL: 0.4 m		DEPTH SOL : 150.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																					
DC EOL: 20.9 m		DEPTH EOL : 3532.6 m		NAVIGATION SYSTEM USED: SeaPath 330																					
BSP SOL: 4.8 kts		FEATHER SOL: 06.6 °		NAVIGATION SYSTEM USED: C-Nav2000																					
BSP EOL: 4.6 kts		FEATHER EOL: -00.1 °		NAVIGATION SYSTEM USED: POSMV																					
WEATHER		MAX FEATHER: 06.6 °		GRAVITY METER: BMG-II: used, SN223																					
WIND SOL: N 10 kts								MAGNETOMETER: None																	
WIND EOL: N 19.5 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>																	
SEAS SOL: 1.0 m		12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin																	
SEAS EOL: 1.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold																	
<b>SP</b>		<b>UTC</b>		<b>EVENT</b>		<b>COMMENTS</b>																			
3413		20:43		SOL		Start of line																			
						<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">VESSEL POSITION</th> </tr> <tr> <th style="width: 15%;">Shotpoints</th> <th style="width: 15%;">Latitude (S)</th> <th colspan="2" style="width: 70%;">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3413</td> <td>38° 38' 00.231"</td> <td colspan="2">176° 30' 13.626"</td> </tr> <tr> <td>LSP 879</td> <td>38° 55' 30.488"</td> <td colspan="2">179° 07' 49.440"</td> </tr> </tbody> </table>				VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)		FSP 3413	38° 38' 00.231"	176° 30' 13.626"		LSP 879	38° 55' 30.488"	179° 07' 49.440"	
VESSEL POSITION																									
Shotpoints	Latitude (S)	Longitude (E)																							
FSP 3413	38° 38' 00.231"	176° 30' 13.626"																							
LSP 879	38° 55' 30.488"	179° 07' 49.440"																							
2282		0:00		MIDNIGHT		JD25																			
879		04:02		EOL		End of line																			
						<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td style="text-align: right;">29.5m</td> </tr> <tr> <td>NRP - COS</td> <td style="text-align: right;">280.0m</td> </tr> <tr> <td>NRP - CNG</td> <td style="text-align: right;">455.00m</td> </tr> <tr> <td>COS - CNG</td> <td style="text-align: right;">175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td style="text-align: right;">367.40m</td> </tr> </tbody> </table>				NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	280.0m	NRP - CNG	455.00m	COS - CNG	175.00m	NRP - CMP	367.40m				
NAVIGATION OFFSET APPLIED																									
NRP - Stern	29.5m																								
NRP - COS	280.0m																								
NRP - CNG	455.00m																								
COS - CNG	175.00m																								
NRP - CMP	367.40m																								

Posnet locations & remarks: good - none - intermittent				Acoustic good	
Tailbuoy #1	Good	Gun string #1	GOOD		
Tailbuoy #2	Failed	Gun string #2	GOOD		
Tailbuoy #3	Failed	Gun string #3	None		
Tailbuoy #4	Good	Gun string #4	GOOD		
				SP spacing:	25.0m
				line status:	Complete



<b>Seq# 037</b>		<b>Line Name: MGL1801M1132</b>		<b>NAVIGATION</b>		DATE: 2018-01-25		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 25			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -51.0 m	DEPTH SOL : 3504.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -60.4 m	DEPTH EOL : 103.1 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts	FEATHER SOL: 04.5 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: -03.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 25.8 kts			-8		MAGNETOMETER: None				
WIND EOL: N 10 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.5M	12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin		
SEAS EOL: 1.5 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
991	06:39	SOL	Start of line						
VESSEL POSITION									
		<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>				
FSP	991	38° 57' 56.806"		179° 03' 16.214"					
LSP	3525	38° 40' 25.734"		178° 25' 39.571"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
3525	14:13	EOL	End of line						

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
				SP spacing:	25.0m
				line status:	Complete



<b>Seq# 038</b>		<b>Line Name: MGL1801M1332</b>		<b>NAVIGATION</b>		DATE: 2018-01-25		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 25			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -51.0 m	DEPTH SOL : 3504.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -60.4 m	DEPTH EOL : 103.1 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts	FEATHER SOL: 04.5 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: -03.4 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER:		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: N 25.8 kts			-8		MAGNETOMETER: None				
WIND EOL: N 10 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.5M	12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin		
SEAS EOL: 1.5 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
3411	16:40	SOL	Start of line						
				<b>VESSEL POSITION</b>					
				<b>Shotpoints</b>		<b>Latitude (S)</b>		<b>Longitude (E)</b>	
				FSP	991	38° 57' 56.806"		179° 03' 16.214"	
				LSP	3525	38° 40' 25.734"		178° 25' 39.571"	
				<b>NAVIGATION OFFSET APPLIED</b>					
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
3398	16:42	EOL	DO NOT PROCESS, ARRAY 3 failure						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete

<b>Line Name:</b> MGL1801A1332		<b>NAVIGATION</b>		<b>DATE:</b> 2018-01-25		 													
<b>Seq# 039</b>		<b>Line Brg :</b> 121.8 °		<b>LINE LOGS</b>				<b>JULIAN DAY:</b> 25											
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han			<b>SURVEY:</b> Bangs 3D		<b>AREA:</b> New Zealand														
DC SOL: 0.6 m	DEPTH SOL : 144.5 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary																
DC EOL: 2.7 m	DEPTH EOL : 3533.7 m		NAVIGATION SYSTEM USED: SeaPath 330																
BSP SOL: 4.7 kts	FEATHER SOL: 02.3 °		NAVIGATION SYSTEM USED: C-Nav2000																
BSP EOL: 4.8 kts	FEATHER EOL: 04.2 °		NAVIGATION SYSTEM USED: POSMV																
<b>WEATHER</b>		MAX FEATHER: 08.7 °		GRAVITY METER: BMG-II: used, SN223															
WIND SOL: N 7 kts							MAGNETOMETER: None												
WIND EOL: W 3.77 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>															
SEAS SOL: 1.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin															
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold															
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																
3423	20:55	SOL	Start of line																
3423-3412	20:55	Prime																	
3411-3398	20:57	Reshoot																	
3397-EOL	20:59	Prime																	
2472	00:00	Midnight																	
879	04:46	EOL																	
			<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3423</td> <td>38° 37' 47.134"</td> <td>178° 30' 10.311"</td> </tr> <tr> <td>LSP 879</td> <td>38° 55' 21.187"</td> <td>179° 07' 55.247"</td> </tr> </tbody> </table>					VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 3423	38° 37' 47.134"	178° 30' 10.311"	LSP 879	38° 55' 21.187"	179° 07' 55.247"
VESSEL POSITION																			
Shotpoints	Latitude (S)	Longitude (E)																	
FSP 3423	38° 37' 47.134"	178° 30' 10.311"																	
LSP 879	38° 55' 21.187"	179° 07' 55.247"																	
			<table border="1"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>280.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>455.00m</td> </tr> <tr> <td>COS - CNG</td> <td>175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>367.40m</td> </tr> </tbody> </table>					NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	280.0m	NRP - CNG	455.00m	COS - CNG	175.00m	NRP - CMP	367.40m
NAVIGATION OFFSET APPLIED																			
NRP - Stern	29.5m																		
NRP - COS	280.0m																		
NRP - CNG	455.00m																		
COS - CNG	175.00m																		
NRP - CMP	367.40m																		

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete

<b>Seq# 040</b>		<b>Line Name: MGL1801M1140</b>		<b>NAVIGATION</b>		DATE: 2018-01-26		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 26			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -48.1 m	DEPTH SOL : 3505.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -105.3 m	DEPTH EOL : 104.2 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.5 kts	FEATHER SOL: 04.7 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: 00.0 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 04.7 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: 0 kts	MAGNETOMETER: None								
WIND EOL: N 20 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
986	07:25	SOL	Start of line						
				VESSEL POSITION					
				Shotpoints	Latitude (S)		Longitude (E)		
				FSP	986	38° 57' 50.385"		179° 03' 27.036"	
				LSP	3525	38° 40' 18.605"		178.2544.934	
				NAVIGATION OFFSET APPLIED					
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
3525	14:57	EOL							

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

Line Name: **MGL1801M1340**      **NAVIGATION**      DATE: 2018-01-26  
 Seq# **041**      Line Brg : **121.8 °**      **LINE LOGS**      JULIAN DAY: 26

CLIENT: NSF - Nathan Bangs, ShouShou Han      SURVEY: **Bangs 3D**      AREA: New Zealand

DC SOL: -7.0 m      DEPTH SOL : 140.4 m      NAVIGATION SYSTEM USED: C-Nav3050 - Primary  
 DC EOL: 28.6 m      DEPTH EOL : 3534.0 m      NAVIGATION SYSTEM USED: SeaPath 330  
 BSP SOL: 4.5 kts      FEATHER SOL: 07.3 °      NAVIGATION SYSTEM USED: C-Nav2000  
 BSP EOL: 4.6 kts      FEATHER EOL: 01.2 °      NAVIGATION SYSTEM USED: POSMV  
 WEATHER      MAX FEATHER: 10.2 °      GRAVITY METER: BMG-II: used, SN223  
 WIND SOL: S 12 kts      MAGNETOMETER: None

WIND EOL: NE 9.5 kts      shift hours      shift leaders      shift hours      watch personnel  
 SEAS SOL: 1.0 m      12:00 - 24:00      Alan Thompson      12:00 - 24:00      Gilles Guerin  
 SEAS EOL: 1.0 m      0:00-12:00      David Martinson      00:00 - 12:00      Todd Jensvold

SP	UTC	EVENT	COMMENTS	VESSEL POSITION		
3437	17:22	SOL	Start of line	Shotpoints	Latitude (S)	Longitude (E)
	23:10	Fishing	Fishing gear confirmed stuck ahead of head-float to streamer 1	FSP 3437	38° 37' 32.744"	178° 30' 04.444"
	1202 00:00	Midnight	1-27-18	LSP 879	38° 55' 13.539"	179° 08' 01.047"
				NAVIGATION OFFSET APPLIED NRP - Stern      29.5m NRP - COS      280.0m NRP - CNG      455.00m COS - CNG      175.00m NRP - CMP      367.40m		
	879 00:56	EOL	End of line			

<div style="border: 1px dotted black; height: 100px; width: 100%;"></div>							
<b>Posnet locations &amp; remarks: good - none - intermittent</b>							
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good			
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good			
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good			
					SP spacing: 25.0m		
					<b>line status:</b> Complete		



Seq# 042

Line Name: MGL1801M1148

NAVIGATION

DATE: 2018-01-27

Line Brg : 301.8 °

LINE LOGS

JULIAN DAY: 27

CLIENT: NSF - Nathan Bangs, ShouShou Han SURVEY: Bangs 3D AREA: New Zealand

DC SOL: -41.3 m DEPTH SOL : 3507.6 m NAVIGATION SYSTEM USED: C-Nav3050 - Primary  
 DC EOL: -125.0 m DEPTH EOL : 104.1 m NAVIGATION SYSTEM USED: SeaPath 330  
 BSP SOL: 3.4 kts FEATHER SOL: 01.8 ° NAVIGATION SYSTEM USED: C-Nav2000  
 BSP EOL: 4.6 kts FEATHER EOL: 03.8 ° NAVIGATION SYSTEM USED: POSMV  
 WEATHER MAX FEATHER: GRAVITY METER: BMG-II: used, SN223  
 WIND SOL: NE 7.8 kts MAGNETOMETER: None  
 WIND EOL: NNE 10 kts shift hours shift leaders shift hours watch personnel  
 SEAS SOL: 1.0 m 12:00 - 24:00 Alan Thompson 12:00 - 24:00 Gilles Guerin  
 SEAS EOL: 1.0 m 0:00-12:00 David Martinson 00:00 - 12:00 Todd Jensvold

SP	UTC	EVENT	COMMENTS	VESSEL POSITION		
989	03:50	SOL	Start of line	Shotpoints	Latitude (S)	Longitude (E)
989	03:50	SOL	@ SOL tails of streamers deep d/t streamer 1 and 2 crossed from removing fishing gear.	FSP 989	38° 57' 40.624"	179° 03' 30.940"
1030	04:00	SOL	1 and 2 uncrossed, all birds set to 8m	LSP 3524	38° 40' 11.622"	178° 25' 51.402"
NAVIGATION OFFSET APPLIED						
				NRP - Stern	29.5m	
				NRP - COS	280.0m	
				NRP - CNG	455.00m	
				COS - CNG	175.00m	
				NRP - CMP	367.40m	
3524	11:20	EOL	End of line			

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete

<b>Seq# 043</b>		<b>Line Name: MGL1801M1348</b>		<b>NAVIGATION</b>		DATE: 2018-01-27		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 27				
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand					
DC SOL: 4.1 m	DEPTH SOL : 142.9 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: 30.6 m	DEPTH EOL : 3532.0 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.6 kts	FEATHER SOL: 07.3 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.8 kts	FEATHER EOL: 01.2 °		NAVIGATION SYSTEM USED: POSMV							
WEATHER		MAX FEATHER: 09.1 °		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: NNE 7 kts		MAGNETOMETER: None								
WIND EOL: E 5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>						
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin						
SEAS EOL: 1.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold						
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>							
3437	13:48	SOL	Start of line							
				<b>VESSEL POSITION</b>						
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>			
				FSP	3437	38° 37' 25.118"		178° 30' 11.470"		
				LSP	879	38° 55' 05.647"		179° 08' 08.256"		
				<b>NAVIGATION OFFSET APPLIED</b>						
				NRP - Stern		29.5m				
				NRP - COS		280.0m				
				NRP - CNG		455.00m				
				COS - CNG		175.00m				
				NRP - CMP		367.40m				
879	21:15	EOL	End of line							

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 044</b>		<b>Line Name: MGL1801M1156</b>		<b>NAVIGATION</b>		DATE: 2018-01-27		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 27				
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand					
DC SOL: -53.4 m	DEPTH SOL : 3508.4 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary							
DC EOL: -50.4 m	DEPTH EOL : 102.1 m		NAVIGATION SYSTEM USED: SeaPath 330							
BSP SOL: 4.3 kts	FEATHER SOL: 08.9 °		NAVIGATION SYSTEM USED: C-Nav2000							
BSP EOL: 4.9 kts	FEATHER EOL: 00.5 °		NAVIGATION SYSTEM USED: POSMV							
WEATHER		MAX FEATHER: 09.6 °		GRAVITY METER: BMG-II: used, SN223						
WIND SOL: SE 4.3 kts		MAGNETOMETER: None								
WIND EOL: E 6.0 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>						
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin						
SEAS EOL: 0.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold						
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>							
984	11:56	SOL	Start of line							
1006	00:00	Midnight	1-28-18							
				<b>VESSEL POSITION</b>						
				<b>Shotpoints</b>	<b>Latitude (S)</b>		<b>Longitude (E)</b>			
				FSP	984	38° 57' 34.635"		179° 03' 41.443"		
				LSP	3524	38° 40' 00.842"		178° 25' 59.849"		
				<b>NAVIGATION OFFSET APPLIED</b>						
				NRP - Stern		29.5m				
				NRP - COS		280.0m				
				NRP - CNG		455.00m				
				COS - CNG		175.00m				
				NRP - CMP		367.40m				
3524	07:30	EOL	End of line							

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 045</b>		<b>Line Name: MGL1801M1356</b>		<b>NAVIGATION</b>		DATE: 2018-01-28		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE		
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 28				
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -4.1 m	DEPTH SOL : 142.2 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 25.0 m	DEPTH EOL : 3523.0 m			NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts	FEATHER SOL: 06.2 °			NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: 00.2 °			NAVIGATION SYSTEM USED: POSMV						
WEATHER			MAX FEATHER: 06.2 °			GRAVITY METER: BMG-II: used, SN223				
WIND SOL: SSE 5.9 kts			MAGNETOMETER: None							
WIND EOL: S 11 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>			
SEAS SOL: 0.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin						
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold						
SP	UTC	EVENT	COMMENTS							
3413	09:59	SOL	Start of line							
				VESSEL POSITION						
				Shotpoints	Latitude (S)		Longitude (E)			
				FSP	3413	38° 37' 26.527"		178° 30' 39.240"		
				LSP	879	38° 54' 57.108"		179° 08' 14.625"		
				NAVIGATION OFFSET APPLIED						
				NRP - Stern		29.5m				
				NRP - COS		280.0m				
				NRP - CNG		455.00m				
				COS - CNG		175.00m				
				NRP - CMP		367.40m				
879	17:22	EOL	End of line							

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>



<b>Seq# 046</b>		<b>Line Name: MGL1801M1164</b>		<b>NAVIGATION</b>		DATE: 2018-01-28		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE													
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 28															
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand															
DC SOL: 21.3 m	DEPTH SOL : 3513.0 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary																	
DC EOL: -106.5 m	DEPTH EOL : 103.2 m			NAVIGATION SYSTEM USED: SeaPath 330																	
BSP SOL: 4.3 kts	FEATHER SOL: 03.7 °			NAVIGATION SYSTEM USED: C-Nav2000																	
BSP EOL: 4.6 kts	FEATHER EOL: 03.5 °			NAVIGATION SYSTEM USED: POSMV																	
WEATHER			MAX FEATHER: -06.3 °			GRAVITY METER: BMG-II: used, SN223															
WIND SOL: SSE 15 kts			MAGNETOMETER: None																		
WIND EOL: kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>														
SEAS SOL: 1.0 m	12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin														
SEAS EOL: 1.0 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold														
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																		
960	19:55	SOL	Start of line																		
2267	00:00	Midnight	1-29-18																		
3524	03:40	EOL	End of line																		
				<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 960</td> <td>38° 57' 34.059"</td> <td>179° 04' 10.807"</td> </tr> <tr> <td>LSP 3524</td> <td>38° 39' 54.055"</td> <td>178° 26' 05.016"</td> </tr> </tbody> </table>						VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 960	38° 57' 34.059"	179° 04' 10.807"	LSP 3524	38° 39' 54.055"	178° 26' 05.016"
VESSEL POSITION																					
Shotpoints	Latitude (S)	Longitude (E)																			
FSP 960	38° 57' 34.059"	179° 04' 10.807"																			
LSP 3524	38° 39' 54.055"	178° 26' 05.016"																			
				<table border="1"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>280.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>455.00m</td> </tr> <tr> <td>COS - CNG</td> <td>175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>367.40m</td> </tr> </tbody> </table>						NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	280.0m	NRP - CNG	455.00m	COS - CNG	175.00m	NRP - CMP	367.40m
NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	280.0m																				
NRP - CNG	455.00m																				
COS - CNG	175.00m																				
NRP - CMP	367.40m																				

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	SP spacing: 25.0m
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	<b>line status:</b> Complete

<b>Seq# 047</b>		<b>Line Name: MGL1801M1364</b>		<b>NAVIGATION</b>		DATE: 2018-01-29		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 29			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: -22.9 m	DEPTH SOL : 143.2 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 13.6 m	DEPTH EOL : 3532.6 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts	FEATHER SOL: 04.7 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.8 kts	FEATHER EOL: 01.2 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 10.4 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: ENE 7.2 kts		MAGNETOMETER: None							
WIND EOL: NE 10 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
3423	06:05	SOL	Start of line						
VESSEL POSITION									
		Shotpoints	Latitude (S)		Longitude (E)				
FSP	3423	38° 37' 13.471"		178° 30' 37.125"					
LSP	879	38° 54' 48.385"		179° 08' 21.220"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
879	13:20	EOL	End of line						

Posnet locations & remarks: good - none - intermittent				
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good
				SP spacing: 25.0m
				<b>line status:</b> Complete

<b>Seq# 048</b>		<b>Line Name:</b> MGL1801M1172	<b>NAVIGATION</b>	<b>DATE:</b> 2018-01-29	 COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 29		
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han			<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand		
DC SOL: -12.6 m	DEPTH SOL : 3515.0 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary			
DC EOL: -19.3 m	DEPTH EOL : 272.2 m		NAVIGATION SYSTEM USED: SeaPath 330			
BSP SOL: 4.1 kts	FEATHER SOL: 05.7 °		NAVIGATION SYSTEM USED: C-Nav2000			
BSP EOL: 4.4 kts	FEATHER EOL: -02.4 °		NAVIGATION SYSTEM USED: POSMV			
WEATHER		MAX FEATHER: -11.3 °	GRAVITY METER: BMG-II: used, SN223			
WIND SOL: NNE 12 kts			MAGNETOMETER: None			
WIND EOL: NNE 22.7 kts	<b>shift hours</b>	<b>shift leaders</b>	<b>shift hours</b>	<b>watch personnel</b>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin		
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>			
971	15:57	SOL	Start of line			
3393	0:00	Midnight	VESEL POSITION			
			<b>Shotpoints</b>	<b>Latitude (S)</b>	<b>Longitude (E)</b>	
			FSP	971	38° 57' 22.079"	179° 04' 06.549"
			LSP	3525	38° 39' 42.843"	178° 26' 12.332"
3525	0:24	EOL	NAVIGATION OFFSET APPLIED			
				NRP - Stern		29.5m
				NRP - COS		280.0m
				NRP - CNG		455.00m
				COS - CNG		175.00m
				NRP - CMP		367.40m
			End of line			

Posnet locations & remarks: good - none - intermittent					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 049</b>		<b>Line Name: MGL1801M1372</b>		<b>NAVIGATION</b>		DATE: 2018-01-30		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 30			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 2.0 m	DEPTH SOL : 141.7 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 33.7 m	DEPTH EOL : 3534.7 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 5.0 kts	FEATHER SOL: 06.0 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.7 kts	FEATHER EOL: -00.8 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: 09.8 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: NNE 22 kts	MAGNETOMETER: None								
WIND EOL: N 28.7 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 2.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
3418	02:53	SOL	Start of line						
				VESSEL POSITION					
				Shotpoints	Latitude (S)		Longitude (E)		
				FSP	3418	38° 37' 07.493"		178° 30' 46.534"	
				LSP	879	38° 54' 40.151"		179° 08' 26.209"	
				NAVIGATION OFFSET APPLIED					
				NRP - Stern	29.5m				
				NRP - COS	280.0m				
				NRP - CNG	455.00m				
				COS - CNG	175.00m				
				NRP - CMP	367.40m				
879	10:08	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>



<b>Seq# 050</b>		<b>Line Name: MGL1801M1180</b>		<b>NAVIGATION</b>		<b>DATE: 2018-01-30</b>		<b>Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE</b>	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		<b>JULIAN DAY: 30</b>			
<b>CLIENT: NSF - Nathan Bangs, ShouShou Han</b>			<b>SURVEY: Bangs 3D</b>		<b>AREA: New Zealand</b>				
DC SOL: -26.7 m		DEPTH SOL : 3514.8 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -10.8 m		DEPTH EOL : 104.0 m		NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 3.8 kts		FEATHER SOL: 07.7 °		NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.6 kts		FEATHER EOL: -04.6 °		NAVIGATION SYSTEM USED: POSMV					
<b>WEATHER</b>		MAX FEATHER: 11.0 °		<b>GRAVITY METER: BMG-II: used, SN223</b>					
WIND SOL: N 26 kts		<b>MAGNETOMETER: None</b>							
WIND EOL: N 26 kts		<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>	
SEAS SOL: 2.0 m		12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin	
SEAS EOL: 2.0 m		0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
933	12:46	SOL	Start of line						
								<b>VESSEL POSITION</b>	
				<b>Shotpoints</b>		<b>Latitude (S)</b>		<b>Longitude (E)</b>	
				FSP 933		38° 57' 29.757"		179° 04' 46.565"	
				LSP 3525		38° 39' 34.292"		178° 26' 18.940"	
								<b>NAVIGATION OFFSET APPLIED</b>	
				NRP - Stern		29.5m			
				NRP - COS		280.0m			
				NRP - CNG		455.00m			
				COS - CNG		175.00m			
				NRP - CMP		367.40m			
3525	21:10	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>						
Tailbuoy #1	Good	Gun string #1	GOOD	Acoustic good		
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good		
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good		
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good		
					SP spacing:	25.0m
<b>line status:</b>					<b>Complete</b>	

<b>Seq# 051</b>		<b>Line Name: MGL1801R1268</b>		<b>NAVIGATION</b>		DATE: 2018-01-30		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 30			
CLIENT: NSF - Nathan Bangs, ShouShou Han				SURVEY: Bangs 3D		AREA: New Zealand			
DC SOL: 84.6 m	DEPTH SOL : 151.5 m			NAVIGATION SYSTEM USED: C-Nav3050 - Primary					
DC EOL: -16.3 m	DEPTH EOL : 943.7 m			NAVIGATION SYSTEM USED: SeaPath 330					
BSP SOL: 4.8 kts	FEATHER SOL: 11.5 °			NAVIGATION SYSTEM USED: C-Nav2000					
BSP EOL: 4.7 kts	FEATHER EOL: 13.3 °			NAVIGATION SYSTEM USED: POSMV					
WEATHER			MAX FEATHER: 13.3 °			GRAVITY METER: BMG-II: used, SN223			
WIND SOL: NNE 29 kts			MAGNETOMETER: None						
WIND EOL: N 30 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 2.0 m	12:00 - 24:00		Alan Thompson		12:00 - 24:00		Gilles Guerin		
SEAS EOL: 2.0 m	0:00-12:00		David Martinson		00:00 - 12:00		Todd Jensvold		
SP	UTC	EVENT	COMMENTS						
3422	23:38	SOL	Start of line						
VESSEL POSITION									
		Shotpoints	Latitude (S)		Longitude (E)				
FSP	3422	38° 38' 56.623"		178° 29' 18.323"					
LSP	2933	38° 42' 17.479"		178° 36' 34.568"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
2933	01:01	EOL	End of line						

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Good</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete



<b>Seq# 052</b>		<b>Line Name: MGL1801T1084</b>		<b>NAVIGATION</b>		DATE: 2018-02-02		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 301.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 32			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 11.2 m	DEPTH SOL : 1036.3 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: 0.2 m	DEPTH EOL : 963.0 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.3 kts	FEATHER SOL: 03.3 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.5 kts	FEATHER EOL: -06.3 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: -06.3 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: S 30 kts	MAGNETOMETER: None								
WIND EOL: S 30 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 2.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 2.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>						
2665	18:57	SOL	Start of line						
VESSEL POSITION									
		Shotpoints	Latitude (S)		Longitude (E)				
FSP	2665	38° 47' 12.078"		178° 37' 46.613"					
LSP	2799	38° 46' 16.647"		178° 35' 47.213"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
2799	19:21	EOL	End of line						
Line DNP - testing recording system and sea noise									





<b>Seq# 053</b>		<b>Line Name: MGL18011276</b>		<b>NAVIGATION</b>		DATE: 2018-02-03		Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg : 121.8 °</b>		<b>LINE LOGS</b>		JULIAN DAY: 34			
CLIENT: NSF - Nathan Bangs, ShouShou Han			SURVEY: Bangs 3D		AREA: New Zealand				
DC SOL: 15.1 m	DEPTH SOL : 133.1 m		NAVIGATION SYSTEM USED: C-Nav3050 - Primary						
DC EOL: -296.0 m	DEPTH EOL : 974.7 m		NAVIGATION SYSTEM USED: SeaPath 330						
BSP SOL: 4.6 kts	FEATHER SOL: -39.6 °		NAVIGATION SYSTEM USED: C-Nav2000						
BSP EOL: 4.1 kts	FEATHER EOL: 01.7 °		NAVIGATION SYSTEM USED: POSMV						
WEATHER		MAX FEATHER: -39.6 °		GRAVITY METER: BMG-II: used, SN223					
WIND SOL: S 10 kts		MAGNETOMETER: None							
WIND EOL: S 10 kts	<u>shift hours</u>		<u>shift leaders</u>		<u>shift hours</u>		<u>watch personnel</u>		
SEAS SOL: 2.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin					
SEAS EOL: 2.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold					
SP	UTC	EVENT	COMMENTS						
3473	14:34	SOL	Start of line - Multi-line infill						
VESSEL POSITION									
		Shotpoints	Latitude (S)		Longitude (E)				
FSP	3473	38° 38' 25.083"		178° 28' 40.293"					
LSP	2309	38° 46' 20.485"		178° 46' 01.661"					
NAVIGATION OFFSET APPLIED									
NRP - Stern		29.5m							
NRP - COS		280.0m							
NRP - CNG		455.00m							
COS - CNG		175.00m							
NRP - CMP		367.40m							
2309	18:11	EOL	End of line						
Early end of line due to Streamer 4 failure									

<b>Posnet locations &amp; remarks: good - none - intermittent</b>								
<b>Tailbuoy #1</b>	Failed	<b>Gun string #1</b>	GOOD	Acoustic good				
<b>Tailbuoy #2</b>	Failed	<b>Gun string #2</b>	GOOD	Acoustic good				
<b>Tailbuoy #3</b>	Failed	<b>Gun string #3</b>	None	Acoustic good	SP spacing: 25.0m			
<b>Tailbuoy #4</b>	Good	<b>Gun string #4</b>	GOOD	Acoustic good	<b>line status:</b>	Complete		





<b>Seq# 054</b>		<b>Line Name:</b> MGL1801A1276	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-03	 																									
		<b>Line Brg :</b> 121.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 34																										
		<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han	<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand																										
DC SOL:	-296.0 m	DEPTH SOL :	855.7 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																										
DC EOL:	-1300.0 m	DEPTH EOL :	3529.1 m	NAVIGATION SYSTEM USED: SeaPath 330																										
BSP SOL:	4.1 kts	FEATHER SOL:	01.7 °	NAVIGATION SYSTEM USED: C-Nav2000																										
BSP EOL:	4.1 kts	FEATHER EOL:	01.6 °	NAVIGATION SYSTEM USED: POSMV																										
<b>WEATHER</b>		MAX FEATHER:	04.5 °	GRAVITY METER: BMG-II: used, SN223																										
WIND SOL:	S 10 kts			MAGNETOMETER: None																										
WIND EOL:	S 10 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>																									
SEAS SOL:	2.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin																									
SEAS EOL:	2.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold																									
SP	UTC	EVENT	COMMENTS																											
2243	18:25	SOL	Start of line - Multi-line infill																											
<table border="1"> <thead> <tr> <th colspan="3"></th> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th></th> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="3">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP</td> <td>2243</td> <td>38° 46' 47.792"</td> <td colspan="3">178° 47' 00.440"</td> </tr> <tr> <td>LSP</td> <td>879</td> <td>38° 55' 43.484"</td> <td colspan="3">179° 07' 38.479"</td> </tr> </tbody> </table>										VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)			FSP	2243	38° 46' 47.792"	178° 47' 00.440"			LSP	879	38° 55' 43.484"	179° 07' 38.479"		
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NRP - CMP	367.40m																													
879	23:08	EOL	End of line																											



<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
Tailbuoy #1	Failed	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete

<b>Seq# 055</b>		<b>Line Name:</b> MGL1801R1076	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-04	 																
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 35																	
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand																		
DC SOL: -51.9 m	DEPTH SOL : 3499.8 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: 16.2 m	DEPTH EOL : 94.0 m	NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 4.5 kts	FEATHER SOL: 00.0 °	NAVIGATION SYSTEM USED: C-Nav2000																			
BSP EOL: 4.5 kts	FEATHER EOL: -08.7 °	NAVIGATION SYSTEM USED: POSMV																			
<b>WEATHER</b>	<b>MAX FEATHER:</b> -08.8 °	<b>GRAVITY METER:</b> BMG-II: used, SN223																			
WIND SOL: ENE 5.2 kts	<b>MAGNETOMETER:</b> None																				
WIND EOL: N 24.4 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>																	
SEAS SOL: 2.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin																	
SEAS EOL: 1.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold																	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																		
968	01:57	SOL	Start of line																		
1000	02:03	Noise	Due to swell noise, streamer set to 9m																		
2662	06:48	Streamer	Seal recording failure on streamer 4																		
2689	06:52	Streamer	Seal stopped to troubleshoot streamer 4																		
2732	07:00	Streamer	Seal recording again																		
	07:00	Steering	Strong currents affecting steering control																		
3524	09:24	EOL	End of line																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 968</td> <td>38° 59' 04.953"</td> <td colspan="2">179° 02' 52.416"</td> </tr> <tr> <td>LSP 3524</td> <td>38° 41' 22.385"</td> <td colspan="2">178° 24' 57.283"</td> </tr> </tbody> </table>						VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)		FSP 968	38° 59' 04.953"	179° 02' 52.416"		LSP 3524	38° 41' 22.385"	178° 24' 57.283"	
VESSEL POSITION																					
Shotpoints	Latitude (S)	Longitude (E)																			
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LSP 3524	38° 41' 22.385"	178° 24' 57.283"																			
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NRP - CMP	367.40m																				

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 056</b>		<b>Line Name:</b> MGL1801B1268	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-04	 																
		<b>Line Brg :</b> 121.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 35																	
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand																		
DC SOL: -50.1 m	DEPTH SOL : 174.9 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary																			
DC EOL: 130.0 m	DEPTH EOL : 3526.3 m	NAVIGATION SYSTEM USED: SeaPath 330																			
BSP SOL: 5.1 kts	FEATHER SOL: 39.8 °	NAVIGATION SYSTEM USED: C-Nav2000																			
BSP EOL: 4.1 kts	FEATHER EOL: -01.2 °	NAVIGATION SYSTEM USED: POSMV																			
<b>WEATHER</b>	<b>MAX FEATHER:</b>	<b>GRAVITY METER: BMG-II: used, SN223</b>																			
WIND SOL: N 20.5 kts		<b>MAGNETOMETER: None</b>																			
WIND EOL: N 16 kts kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>																	
SEAS SOL: 1.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin																	
SEAS EOL: 1.5m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold																	
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>																		
3383	10:45	SOL	Start of line																		
<table border="1"> <thead> <tr> <th colspan="4">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th colspan="2">Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3383</td> <td>38° 39' 09.139"</td> <td colspan="2">178° 29' 55.792"</td> </tr> <tr> <td>LSP 879</td> <td>38° 56' 31.807"</td> <td colspan="2">179° 07' 02.005"</td> </tr> </tbody> </table>						VESSEL POSITION				Shotpoints	Latitude (S)	Longitude (E)		FSP 3383	38° 39' 09.139"	178° 29' 55.792"		LSP 879	38° 56' 31.807"	179° 07' 02.005"	
VESSEL POSITION																					
Shotpoints	Latitude (S)	Longitude (E)																			
FSP 3383	38° 39' 09.139"	178° 29' 55.792"																			
LSP 879	38° 56' 31.807"	179° 07' 02.005"																			
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NAVIGATION OFFSET APPLIED																					
NRP - Stern	29.5m																				
NRP - COS	280.0m																				
NRP - CNG	455.00m																				
COS - CNG	175.00m																				
NRP - CMP	367.40m																				
879	18:34	EOL	End of line																		

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete



<b>Seq# 057</b>		<b>Line Name:</b> MGL180111116	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-04	 												
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 35													
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand														
DC SOL: -24.6 m	DEPTH SOL : 3506.3 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary															
DC EOL: 13.6 m	DEPTH EOL : 103.2 m	NAVIGATION SYSTEM USED: SeaPath 330															
BSP SOL: 4.9 kts	FEATHER SOL: 03.7 °	NAVIGATION SYSTEM USED: C-Nav2000															
BSP EOL: 4.4 kts	FEATHER EOL: -14.4 °	NAVIGATION SYSTEM USED: POSMV															
<b>WEATHER</b>	<b>MAX FEATHER:</b> -14.9 °	<b>GRAVITY METER:</b> BMG-II: used, SN223															
WIND SOL: N 14 kts	<b>MAGNETOMETER:</b> None																
WIND EOL: N 34.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>													
SEAS SOL: 1.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin													
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold													
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>														
967	20:54	SOL	Start of line														
<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 967</td> <td>38° 58' 22.736"</td> <td>179° 03' 25.590"</td> </tr> <tr> <td>LSP 3525</td> <td>38° 40' 40.369"</td> <td>178° 25' 28.371"</td> </tr> </tbody> </table>						VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 967	38° 58' 22.736"	179° 03' 25.590"	LSP 3525	38° 40' 40.369"	178° 25' 28.371"
VESSEL POSITION																	
Shotpoints	Latitude (S)	Longitude (E)															
FSP 967	38° 58' 22.736"	179° 03' 25.590"															
LSP 3525	38° 40' 40.369"	178° 25' 28.371"															
2068	00:00	Midnight															
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NAVIGATION OFFSET APPLIED																	
NRP - Stern	29.5m																
NRP - COS	280.0m																
NRP - CNG	455.00m																
COS - CNG	175.00m																
NRP - CMP	367.40m																
3525	4:16	EOL	End of line														

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
Tailbuoy #1	Failed	Gun string #1	GOOD	Acoustic good	
Tailbuoy #2	Failed	Gun string #2	GOOD	Acoustic good	
Tailbuoy #3	Failed	Gun string #3	None	Acoustic good	
Tailbuoy #4	Good	Gun string #4	GOOD	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	Complete





<b>Seq# 058</b>		<b>Line Name:</b> MGL180111244	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-05	Lamont-Doherty Earth Observatory COLUMBIA UNIVERSITY   EARTH INSTITUTE	
		<b>Line Brg :</b> 121.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 36		
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand			
DC SOL: -2.3 m	DEPTH SOL : 432.3 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary				
DC EOL: -40.1 m	DEPTH EOL : 3524.0 m	NAVIGATION SYSTEM USED: SeaPath 330				
BSP SOL: 4.2 kts	FEATHER SOL: 14.2 °	NAVIGATION SYSTEM USED: C-Nav2000				
BSP EOL: 4.7 kts	FEATHER EOL: 01.1 °	NAVIGATION SYSTEM USED: POSMV				
<b>WEATHER</b>	<b>MAX FEATHER:</b> 14.2 °	<b>GRAVITY METER:</b> BMG-II: used, SN223				
WIND SOL: N 27 kts	<b>MAGNETOMETER:</b> None					
WIND EOL: N 27 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>		
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin		
SEAS EOL: 1.5 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold		
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>			
3169	06:11	SOL	Start of line			
VESSEL POSITION						
		<b>Shotpoints</b>	<b>Latitude (S)</b>	<b>Longitude (E)</b>		
FSP	3169	38° 41' 04.678"	178° 32' 45.538"			
LSP	879	38° 56' 52.484"	179° 06' 46.353"			
NAVIGATION OFFSET APPLIED						
NRP - Stern	29.5m					
NRP - COS	280.0m					
NRP - CNG	455.00m					
COS - CNG	175.00m					
NRP - CMP	367.40m					
879	12:52	EOL	End of line			



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<b>Posnet locations &amp; remarks: good - none - intermittent</b>				
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good
				SP spacing: 25.0m
				<b>line status:</b> Complete

<b>Seq# 059</b>		<b>Line Name:</b> MGL180111004	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-05	 												
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 36													
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand														
DC SOL: -5.7 m	DEPTH SOL : 3494.0 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary															
DC EOL: 2385.6 m	DEPTH EOL : 93.5 m	NAVIGATION SYSTEM USED: SeaPath 330															
BSP SOL: 4.7 kts	FEATHER SOL: 06.1 °	NAVIGATION SYSTEM USED: C-Nav2000															
BSP EOL: 4.7 kts	FEATHER EOL: -09.2 °	NAVIGATION SYSTEM USED: POSMV															
<b>WEATHER</b>	<b>MAX FEATHER:</b> -09.5 °	<b>GRAVITY METER:</b> BMG-II: used, SN223															
WIND SOL: N 20 kts	<b>MAGNETOMETER:</b> None																
WIND EOL: SE 3 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>													
SEAS SOL: 1.5 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin													
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold													
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>														
963	15:33	SOL	Start of line														
<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 963</td> <td>39° 00' 22.502"</td> <td>179° 01' 59.597"</td> </tr> <tr> <td>LSP 3524</td> <td>38° 41' 31.618"</td> <td>178° 24' 50.302"</td> </tr> </tbody> </table>						VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 963	39° 00' 22.502"	179° 01' 59.597"	LSP 3524	38° 41' 31.618"	178° 24' 50.302"
VESSEL POSITION																	
Shotpoints	Latitude (S)	Longitude (E)															
FSP 963	39° 00' 22.502"	179° 01' 59.597"															
LSP 3524	38° 41' 31.618"	178° 24' 50.302"															
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NAVIGATION OFFSET APPLIED																	
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NRP - COS	280.0m																
NRP - CNG	455.00m																
COS - CNG	175.00m																
NRP - CMP	367.40m																
3524	22:55	EOL	End of line														

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>



<b>Seq# 060</b>		<b>Line Name:</b> MGL180111188	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-06	 												
		<b>Line Brg :</b> 121.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 37													
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand														
DC SOL: 74.2 m	DEPTH SOL : 365.9 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary															
DC EOL: -2.5 m	DEPTH EOL : 3521.9 m	NAVIGATION SYSTEM USED: SeaPath 330															
BSP SOL: 3.8 kts	FEATHER SOL: 23.4 °	NAVIGATION SYSTEM USED: C-Nav2000															
BSP EOL: 4.5 kts	FEATHER EOL: 03.6 °	NAVIGATION SYSTEM USED: POSMV															
<b>WEATHER</b>	<b>MAX FEATHER:</b> 23.4 °	<b>GRAVITY METER:</b> BMG-II: used, SN223															
WIND SOL: SE 7.2 kts	<b>MAGNETOMETER:</b> None																
WIND EOL: SSE 16.1 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>													
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin													
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold													
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>														
3379	0:42	SOL	Start of line														
<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 3379</td> <td>38° 40' 38.153"</td> <td>178° 28' 53.783"</td> </tr> <tr> <td>LSP 879</td> <td>38° 57' 52.296"</td> <td>179° 06' 02.367"</td> </tr> </tbody> </table>						VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 3379	38° 40' 38.153"	178° 28' 53.783"	LSP 879	38° 57' 52.296"	179° 06' 02.367"
VESSEL POSITION																	
Shotpoints	Latitude (S)	Longitude (E)															
FSP 3379	38° 40' 38.153"	178° 28' 53.783"															
LSP 879	38° 57' 52.296"	179° 06' 02.367"															
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NAVIGATION OFFSET APPLIED																	
NRP - Stern	29.5m																
NRP - COS	280.0m																
NRP - CNG	455.00m																
COS - CNG	175.00m																
NRP - CMP	367.40m																
879	08:18	EOL	End of line														

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
				<b>line status:</b>	<b>Complete</b>

<b>Seq# 061</b>		<b>Line Name:</b> MGL1801A1004	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-06	 												
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 37													
<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han		<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand														
DC SOL: -225.0 m	DEPTH SOL : 3492.8 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary															
DC EOL: -217.0 m	DEPTH EOL : 102.0 m	NAVIGATION SYSTEM USED: SeaPath 330															
BSP SOL: 4.7 kts	FEATHER SOL: 01.8 °	NAVIGATION SYSTEM USED: C-Nav2000															
BSP EOL: 4.5 kts	FEATHER EOL: -10.0 °	NAVIGATION SYSTEM USED: POSMV															
<b>WEATHER</b>	<b>MAX FEATHER:</b> -10.0 °	<b>GRAVITY METER:</b> BMG-II: used, SN223															
WIND SOL: SSE 18.5 kts		<b>MAGNETOMETER:</b> None															
WIND EOL: SSE 18.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>													
SEAS SOL: 1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin													
SEAS EOL: 1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold													
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>														
974	10:42	SOL	Start of line														
<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 974</td> <td>39° 00' 22.703"</td> <td>179° 01' 46.314"</td> </tr> <tr> <td>LSP 3524</td> <td>38° 42' 38.472"</td> <td>178° 23' 59.068"</td> </tr> </tbody> </table>						VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 974	39° 00' 22.703"	179° 01' 46.314"	LSP 3524	38° 42' 38.472"	178° 23' 59.068"
VESSEL POSITION																	
Shotpoints	Latitude (S)	Longitude (E)															
FSP 974	39° 00' 22.703"	179° 01' 46.314"															
LSP 3524	38° 42' 38.472"	178° 23' 59.068"															
<table border="1"> <thead> <tr> <th colspan="2">NAVIGATION OFFSET APPLIED</th> </tr> </thead> <tbody> <tr> <td>NRP - Stern</td> <td>29.5m</td> </tr> <tr> <td>NRP - COS</td> <td>280.0m</td> </tr> <tr> <td>NRP - CNG</td> <td>455.00m</td> </tr> <tr> <td>COS - CNG</td> <td>175.00m</td> </tr> <tr> <td>NRP - CMP</td> <td>367.40m</td> </tr> </tbody> </table>						NAVIGATION OFFSET APPLIED		NRP - Stern	29.5m	NRP - COS	280.0m	NRP - CNG	455.00m	COS - CNG	175.00m	NRP - CMP	367.40m
NAVIGATION OFFSET APPLIED																	
NRP - Stern	29.5m																
NRP - COS	280.0m																
NRP - CNG	455.00m																
COS - CNG	175.00m																
NRP - CMP	367.40m																
3524	18:02	EOL	End of line														

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete



<b>Seq# 062</b>		<b>Line Name:</b> MGL1801B1276	<b>NAVIGATION</b>	<b>DATE:</b> 2018-02-06	 													
		<b>Line Brg :</b> 301.8 °	<b>LINE LOGS</b>	<b>JULIAN DAY:</b> 37														
		<b>CLIENT:</b> NSF - Nathan Bangs, ShouShou Han	<b>SURVEY:</b> Bangs 3D	<b>AREA:</b> New Zealand														
DC SOL:	-225.0 m	DEPTH SOL :	3492.8 m	NAVIGATION SYSTEM USED: C-Nav3050 - Primary														
DC EOL:	-217.0 m	DEPTH EOL :	102.0 m	NAVIGATION SYSTEM USED: SeaPath 330														
BSP SOL:	4.7 kts	FEATHER SOL:	01.8 °	NAVIGATION SYSTEM USED: C-Nav2000														
BSP EOL:	4.5 kts	FEATHER EOL:	-10.0 °	NAVIGATION SYSTEM USED: POSMV														
<b>WEATHER</b>		<b>MAX FEATHER:</b> -10.0 °		<b>GRAVITY METER:</b> BMG-II: used, SN223														
WIND SOL:	SSE 18.5 kts			<b>MAGNETOMETER:</b> None														
WIND EOL:	SSE 18.5 kts	<u>shift hours</u>	<u>shift leaders</u>	<u>shift hours</u>	<u>watch personnel</u>													
SEAS SOL:	1.0 m	12:00 - 24:00	Alan Thompson	12:00 - 24:00	Gilles Guerin													
SEAS EOL:	1.0 m	0:00-12:00	David Martinson	00:00 - 12:00	Todd Jensvold													
<b>SP</b>	<b>UTC</b>	<b>EVENT</b>	<b>COMMENTS</b>															
974	10:42	SOL	Start of line															
<table border="1"> <thead> <tr> <th colspan="3">VESSEL POSITION</th> </tr> <tr> <th>Shotpoints</th> <th>Latitude (S)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>FSP 974</td> <td>39° 00' 22.703"</td> <td>179° 01' 46.314"</td> </tr> <tr> <td>LSP 3524</td> <td>38° 42' 44.007"</td> <td>178° 23' 54.870"</td> </tr> </tbody> </table>							VESSEL POSITION			Shotpoints	Latitude (S)	Longitude (E)	FSP 974	39° 00' 22.703"	179° 01' 46.314"	LSP 3524	38° 42' 44.007"	178° 23' 54.870"
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3524	18:02	EOL	End of line															

<b>Posnet locations &amp; remarks: good - none - intermittent</b>					
<b>Tailbuoy #1</b>	<b>Failed</b>	<b>Gun string #1</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #2</b>	<b>Failed</b>	<b>Gun string #2</b>	<b>GOOD</b>	Acoustic good	
<b>Tailbuoy #3</b>	<b>Failed</b>	<b>Gun string #3</b>	<b>None</b>	Acoustic good	
<b>Tailbuoy #4</b>	<b>Good</b>	<b>Gun string #4</b>	<b>GOOD</b>	Acoustic good	
					SP spacing: 25.0m
					<b>line status:</b> Complete