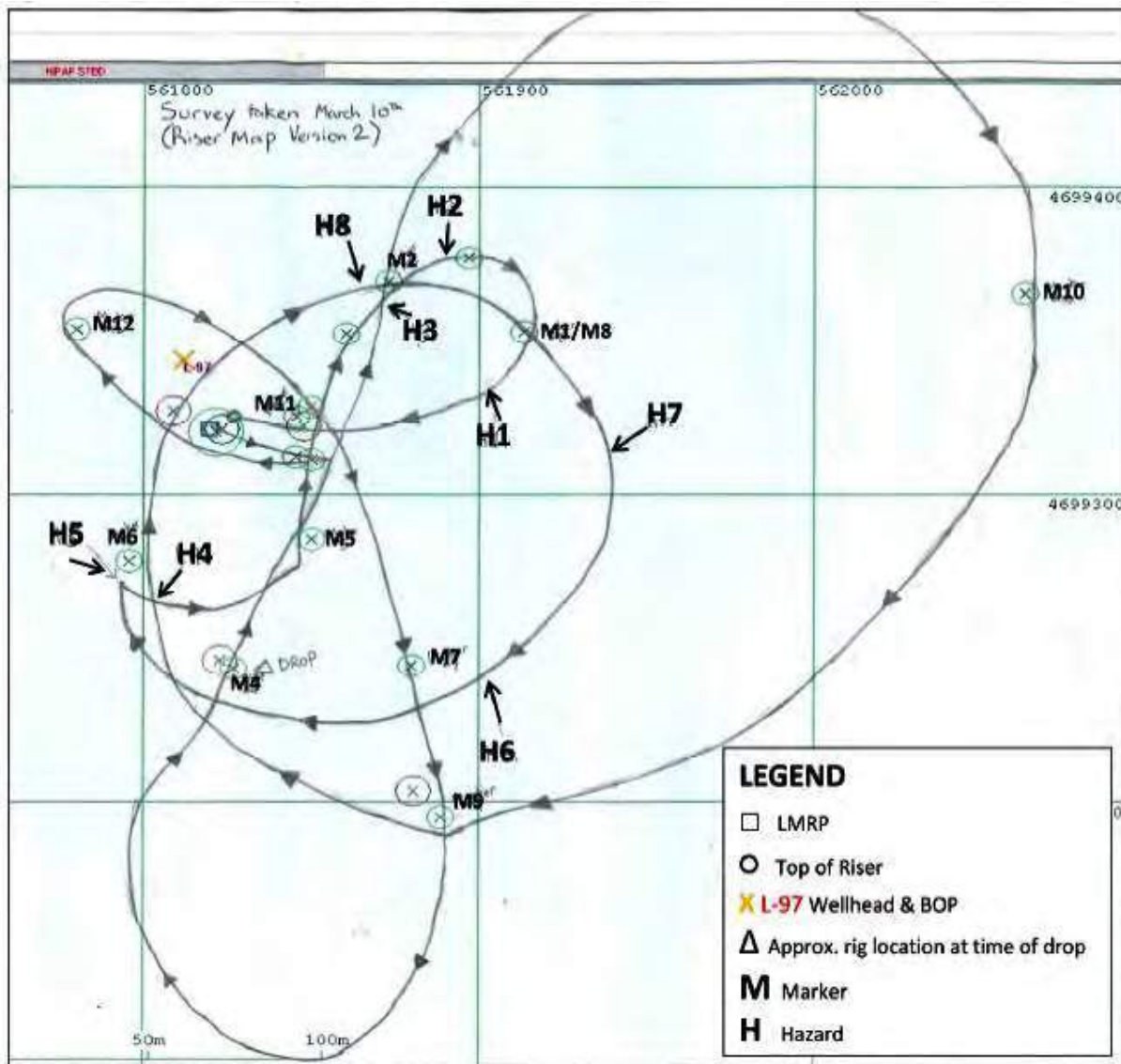


## APPENDIX G - RISER DEBRIS FIELD DIAGRAM



The above survey diagram of the Stena IceMax riser string on the seabed was taken by the ROV. This survey outlined potential hazards that may be associated with the riser string. The major concern is that broken or potentially broken modules/sections could become completely detached from the riser and ascend to the surface and either be lost at sea, or float into a thruster, resulting in possible damage.

An additional survey was requested and completed on March 10<sup>th</sup> and outlined in the Riser Mapping Survey dated March 12, 2016. In addition to the survey, Blade Offshore Services has created a riser recovery plan that has been submitted to the CNSOPB via Shell & Stena. For further details on the riser mapping or recovery efforts, refer to the above listed documents.



APPENDIX H - ICEMAX OPERATING LIMITS CHART

Operating Limitations for Weather based on Operations Manual Rev		<i>Note: Summary based on applicable operations manual for unit and subject to site risk analysis and OM final decision</i>											Amplitude		LFJ Angle	Heave Velocity	Vessel - Drillmax / Icemax Class		
Current	Kn	1	2	3	4	5	6	7	8	9	10	11	Full Heave (m)	Full Heave (ft)	Single Pitch (deg)	Single Roll (deg)	R/A (deg)	Vh (m/s)	Enclosure 3 - L2 DOC OPS 4834 ASSUMPTION - DP SYSTEM 100%
Operation / Weather State	Kn																		Additional Considerations
Open Water Operations	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red							
Run Drill String	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	4.0	4.0			Offset - Refer to WSOG
Run Conductor Casing	12	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	4.0	4.0			Offset - Refer to WSOG and Client's Riser/Conductor Analysis
Run Open Water Casing	12	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	4.0	4.0			Offset - Refer to WSOG and Client's Riser/Conductor Analysis
BOP Handling In	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	2.5	2.5			
BOP Handling Out	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	2.0	2.0			
Running Riser	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.5	11.5	2.5	2.5			Max Wellhead 1 deg - Report > 0.5 deg
BOP Landing		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	2.0	6.6	2.0	2.0			
<b>Well Operations</b>																			
Drilling		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.0	16.4	4.0	4.0	1.5		Max Heave EBT Connection 4.0m (Extreme caution above 3.5m)
Tripping		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.0	16.4	4.0	4.0	1.5		
Logging		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.5	14.8	4.0	4.0	1.5		
Running Casing < 13 3/4"	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	3.0	3.0	1.5		
Running Casing > 13 3/4"	12	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	2.0	2.0	0.5		Refer to Client's Riser and Conductor Analysis
Landing Casing		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	3.0	3.0	1.0		
Strip through Annular		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	3.0	3.0	1.5		
Cementing		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	4.0	4.0	1.5		
Manriding (Work in DHT)		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	6.0	19.7	3.0	3.0			HOD Additional RA > 35kts & Stop Work @ Wind 50kn
<b>General Deck Operations</b>																			
Crane Operations on Deck		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	4.0	4.0			Wind 40kn - Shut-down cranes
Handling Supply Vessels		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	4.0	4.0			R/A with vessel Captain: Wind > 25kts: No weather side working
Secure Cargo, containers etc		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.0	16.4	3.0	3.0			Forecast > 40 Knots Mean
Over the side work		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.0	9.8	2.0	2.0			30 Knot Wind / Daylight / RA @ 3.5MTR SIG SEA
Moonpool work		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.5	11.5	2.5	2.5			
Helicopter Operations		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.0	16.4	3.0	3.0		1.3	50 Knot wind at 10m level - Vis +/- 1km
Crane Work Basket (Inboard)		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.5	11.5					30 Kn 3.5m significant sea
Frog Personnel Transfer		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	3.5	11.5					30 Kn 3.5m significant sea. Refer to the vessel Risk Assessment for regional limit variances
<b>Harsh Weather Criteria</b>																			
Prepare to hang-off drill string		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.0	16.4	4.0	4.0	4.0		
Hang-off DP in BOP / WOW		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.5	18.0	5.0	5.0	5.0		Wind 50kn - Storm Planning
Disconnect		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	8.0	26.2	5.0	5.0	6.0	1.8	Disconnect on one or any combination of these triggers
Re-connect	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	2.5	8.2	2.0	2.0			Offset - Refer to WSOG/ROV Operational VX Ring
<b>Well Test Operations</b>																			
Flaring Activities		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red							Review < 10 Kn including direction
Running Completions		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	4.0	13.1	3.0	3.0	4.0		Adhere to 3rd Party Running Procedures / Limits
Land Completion String		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	2.5	8.2	3.0	3.0	1.0		
Disconnect SSTT (Weather)		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	2.5	8.2	4.0	4.0	1.5		Forecast > 50 Kn Mean conduct planned disconnect
Re-connect SSTT		Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	1.5	4.9	2.0	2.0	1.0		LFJ Angle < 1.6 deg
<b>DP Units</b>																			
Running Beacons (If applicable)	3	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Red	Red	5.0	16.4	3.0	3.0			
Operation / Weather State		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Limiting Factor			
Wind Speed (Knots mean)		3	5	9	13	19	24	30	37	44	51	59	67	76	85	Max Gust Speed +/- 50% > average			
Wave Height (m) Significant		-	-	0.5	1.2	2.1	3	5	6.7	8.5	10.5	13	15	17	20				
Wave Height (m) Max		-	-	1	2	4	5.5	9	12.5	16	20	24	28	-	-				
Wave Period (Sec)		-	-	-	<5	5-7	6-8	6-9	7-10	9-11	10-13	11-14	12-15	13-15	14-16				
Colour Key		Green	Yellow	Red	Vessel within operating limits for conducting operations. Weather state becoming hazardous. Risk Assessment may be required to proceed with operations. Operations suspended.														



**APPENDIX I - POSITION MAP OF PERSONNEL AT THE TIME OF THE INCIDENT**

