

## NOTICE TO MARINERS

### Moyle Survey – Geophysical and ROV Survey Cable Route Survey

Mariners are advised that a Geophysical survey will be conducted at the landfalls of Scotland (approx 3.5km south of Ballantrae) and Ireland (5km east of Larne). Landfall coordinates can be found below. The nearshore element of these surveys will reach from the 5m – 15m water mark.

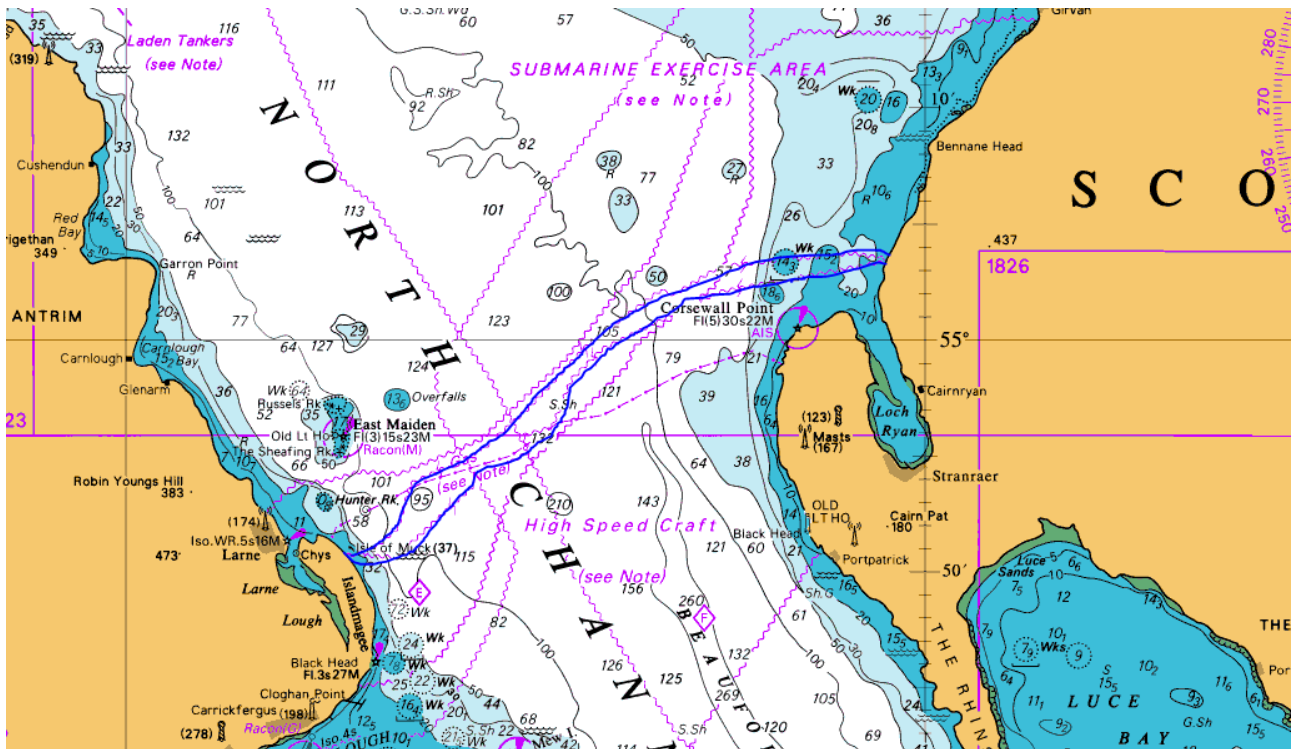
Landfall Ireland	Landfall Scotland	Approximate Route length (km)
5° 43.231244 W 54° 50.760877 N	5° 2.573132 W 55° 3.558638 N	53

#### Nature of operations:

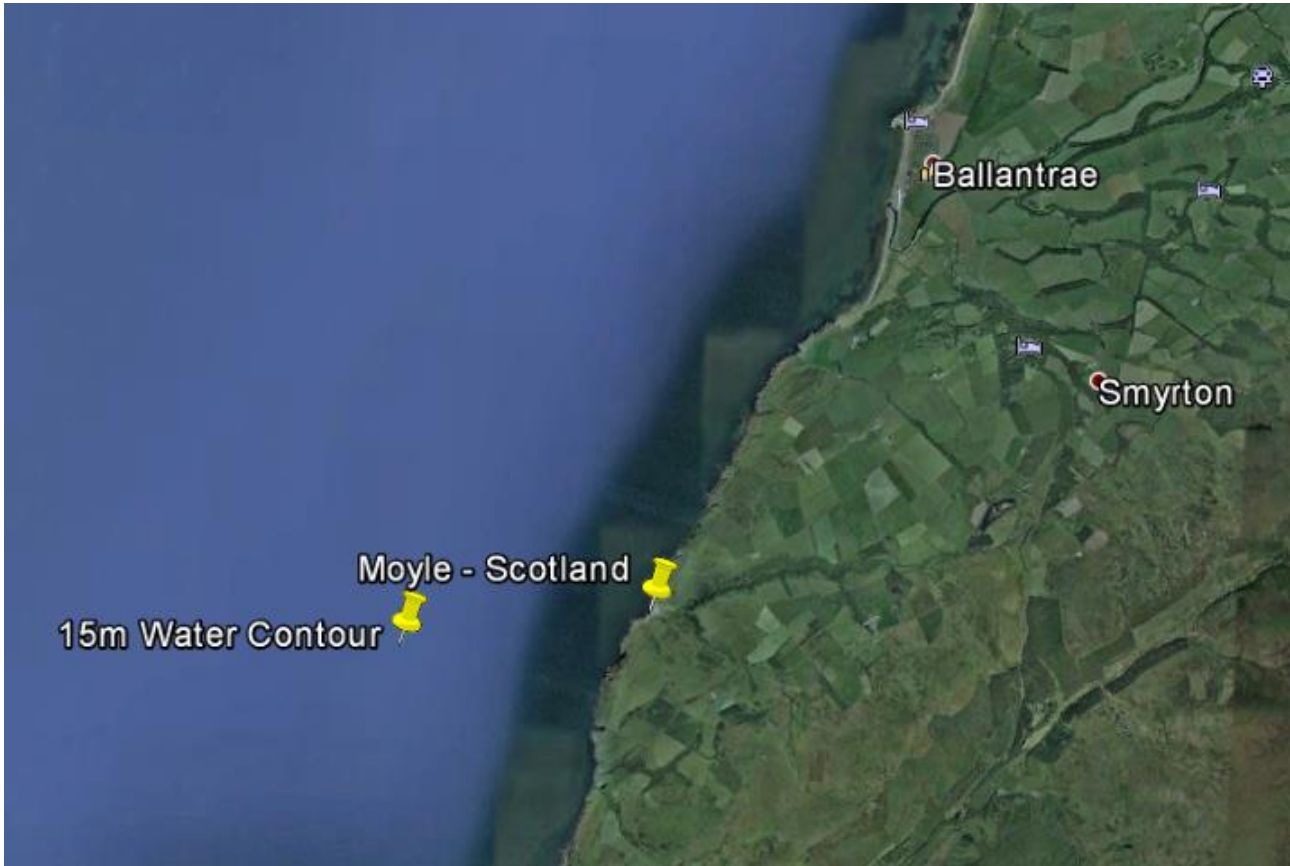
Survey operations shall be conducted on behalf of Nexans Norway AS using the Gardline vessel MV Titan Explorer. The project is expected to commence on **23<sup>rd</sup> March 2015** with an operational duration of c.6 days at each landfall, excluding delays due to weather.

#### Survey Area:

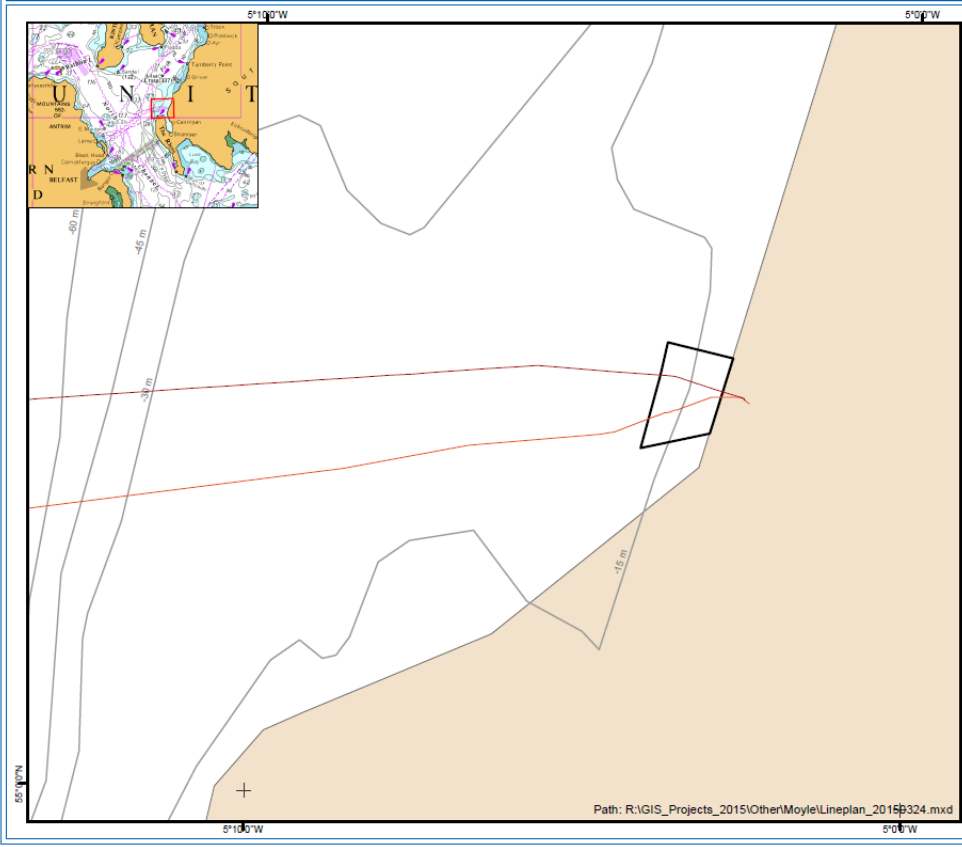
The survey areas are shown below:



Scottish Landfall



Moyle 2015 RPL Lineplan - 25 March 2015



**Legend**

- RPL\_Moyle\_2015\_1\_3
- RPL\_Moyle\_2015\_2\_3
- 500m Box
- 15m Contours

500m Box Coordinates (Western Landfall)

54° 50' 24.562"N 005° 41' 47.021"W  
 54° 50' 16.680"N 005° 43' 05.479"W  
 54° 50' 48.172"N 005° 43' 49.846"W  
 54° 51' 01.752"N 005° 42' 34.204"W  
 54° 50' 49.233"N 005° 42' 14.130"W

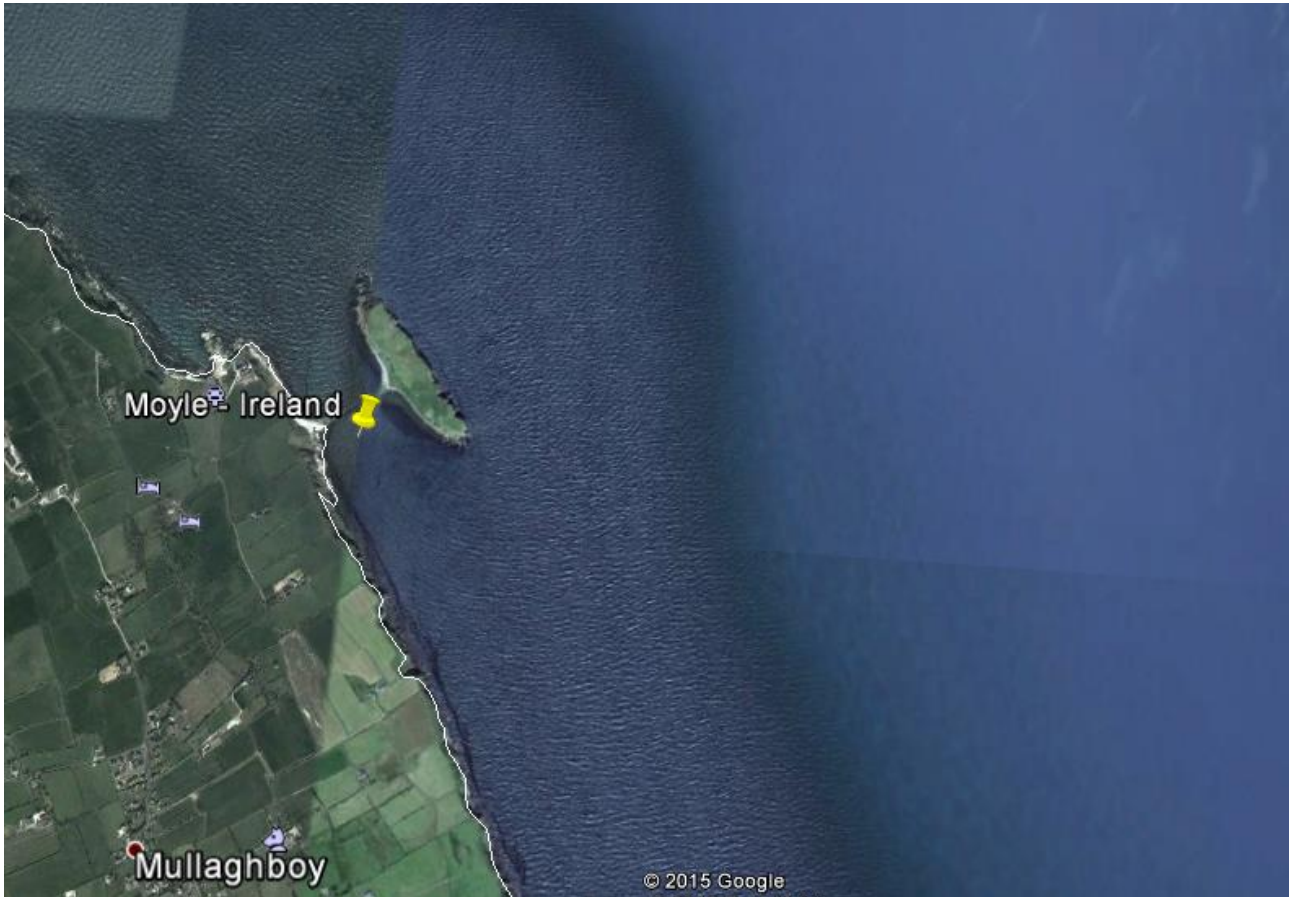
500m Box Coordinates (Eastern Landfall)

55° 03' 05.886"N 005° 04' 06.497"W  
 55° 03' 06.194"N 005° 03' 49.372"W  
 55° 04' 01.668"N 005° 03' 44.368"W  
 55° 03' 54.348"N 005° 02' 44.314"W  
 55° 03' 14.546"N 005° 03' 03.651"W

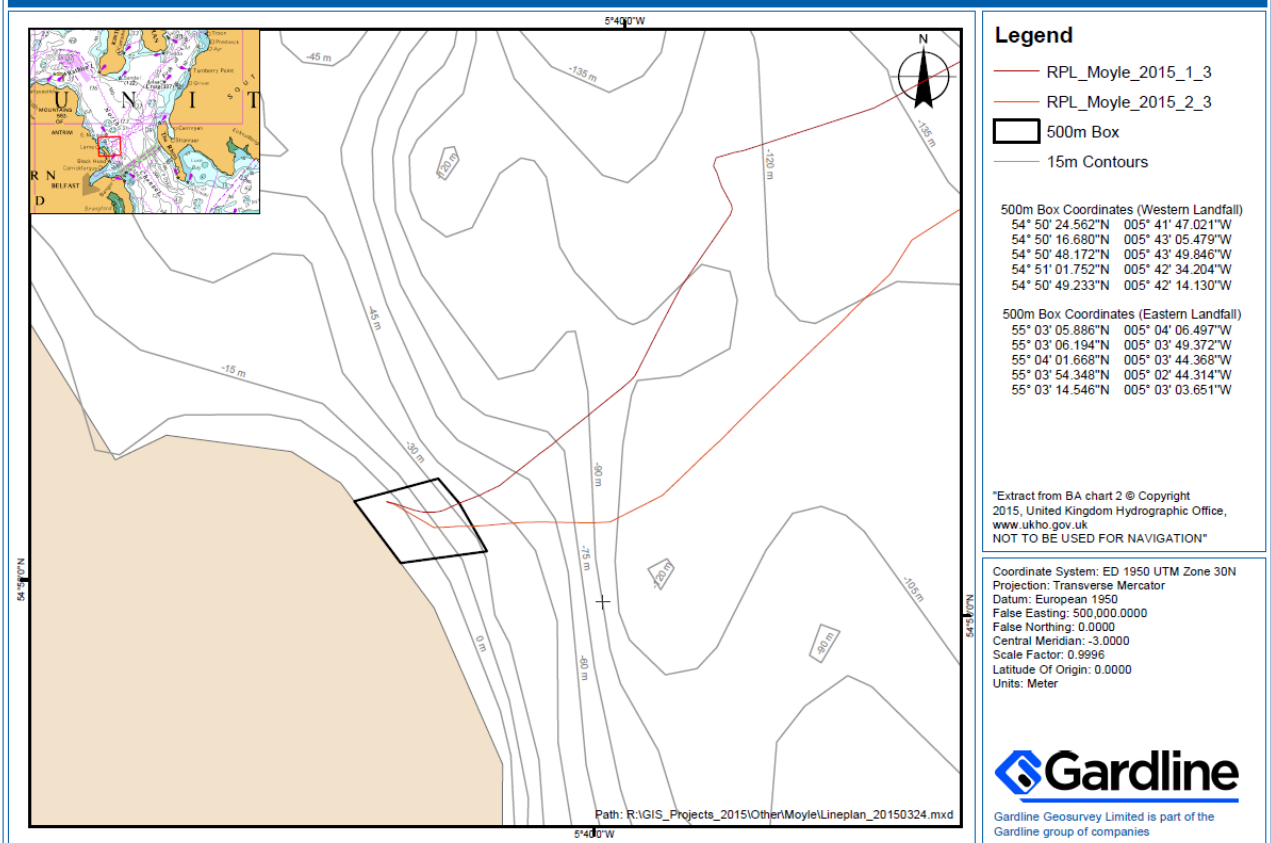
\*Extract from BA chart 2 © Copyright 2015, United Kingdom Hydrographic Office, www.ukho.gov.uk  
 NOT TO BE USED FOR NAVIGATION\*

Coordinate System: ED 1950 UTM Zone 30N  
 Projection: Transverse Mercator  
 Datum: European 1950  
 False Easting: 500,000.0000  
 False Northing: 0.0000  
 Central Meridian: -3.0000  
 Scale Factor: 0.9996  
 Latitude Of Origin: 0.0000  
 Units: Meter

### Irish Landfall



### Moyle 2015 RPL Lineplan - 25 March 2015



Path: R:\GIS\_Projects\_2015\Other\MoyleLineplan\_20150324.mxd

**Box Coordinates (for the above)**

<b>Western Landfall (Ireland)</b>			
Deg	Decimal minutes	Deg	Decimal minutes
54	50.4094	-5	41.7837
54	50.3911	-5	42.2495
54	50.6071	-5	42.2640
54	50.7293	-5	42.7226
54	50.9333	-5	43.0070
54	51.0292	-5	42.5701
54	50.8206	-5	42.2355
<b>Eastern Landfall (Scotland)</b>			
55	3.1625	-5	3.6794
55	3.0981	-5	4.1083
55	3.1032	-5	3.8229
55	4.0278	-5	3.7395
55	3.9702	-5	3.2821
55	3.6923	-5	3.3701
55	3.6256	-5	3.3912
55	3.4574	-5	3.4959

The coordinates for the survey corridor have been provided in the RPLs attached with this document. A line plan has also been produced as is attached with this document as well (Appendix A). Please note these give an entire project overview. The Titan Explorer will be working up to a water depth of **15m**. **Each survey corridor is 100m across.**

**The above boxes are to be kept clear at all times during survey operations.**

The vessel will be surveying across the two corridors throughout the job.. This survey will involve the use of pole-mounted echo sounders and a towed side-scan sonar / magnetometer array that will be towed up to 45m behind the vessel dependent on environmental conditions.

The survey vessel will conduct the survey operations on a 12-hour basis being operational during daylight hours. However transits may occur at times of dusk and dawn. During survey operations with Titan Explorer will be **restricted in the ability to manoeuvre**. All marine traffic are requested to remain is kept clear at all times.

During the survey, the vessel(s) will display the prescribed lights and signals for underwater operations and will be monitoring VHF Channels 12 and 16.

Issued by Gardline  
25th March 2015

Vessel:



# Titan Environmental Surveys Limited

A GARDLINE COMPANY

## 'MV Titan Explorer'



### Cheetah Marine Catamaran

#### Specifications

MCA Coding	Category 2:60miles from Safe Haven
Length	9.7 meters
Beam	2.9 meters
Draught	0.8 meters
Engines	Twin 150hp Honda V-Tech Outboard Engine Marinised diesel 6Kw Lombardini Generator
Speed	Up to 23 knots dependent on load
Fuel Capacity	300 litres

#### Safety Equipment

- 6 Man life raft Solas Pack B with hydrostatic release
- 2 MCA approved life rings, one with line, one with light
- 8 lifejackets all with lights fitted
- 4 x Parachute flares, 6x Red hand flares, 2x Smoke signals
- 2 x Fixed VHF GMDSS Radios & 1 x Portable Handheld VHF, 406Mhz EPIRB
- Hand Operated Searchlight and Signal Light
- Integrated Chart Plotter and AIS Class B receiver
- First aid kits category C
- Nautical publications (local charts/pilotage & tide tables, or equivalent)
- 2x fire buckets and lanyards, 1x fire blanket, Portable Fire extinguishers

#### Survey Equipment

- Trimble *HydroPro* Navigation software
- Odom Hydrotrac Single Frequency (210kHz) echosounder (hull mounted)
- Geoswath Plus (250kHz) Swathe Bathymetry System with central moon pool
- Hemisphere Crescent VS110 DGPS System & Trimble SPS751 RTK system utilising Trimble VRS Now
- Fixed 'A' frame with extendable davits for towed sensors (SSS, Magnetometer, Surface Tow Boomer) and over the side port and starboard mounts for ADCP, Pinger and Horizontal CTD

### M/V Titan Explorer

GSM	+44 (0) 7884068448
e-mail	Titan.explorer@titansurveys.co.uk
VHF	CH 16
Call Sign	MZU22
MMSI	232004757

**Radio Navigation Warnings:**

tbc

**Distribution List:**

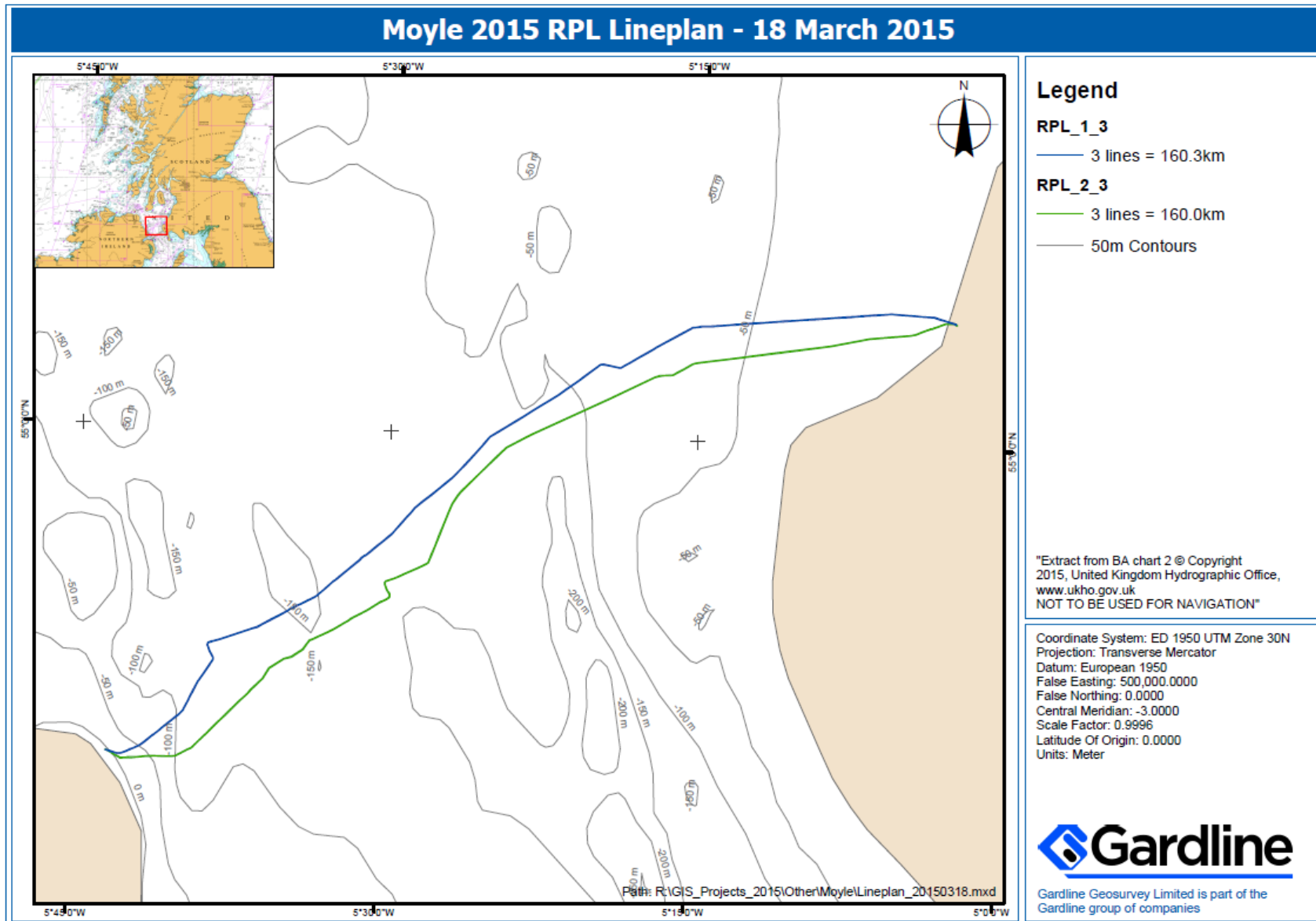
tbc

**Project Contact Details:**

Name: Oyvind Haug  
Role: Project Engineer  
Company: Nexans Norway AS  
Tel: +47 22 88 65 09 / +47 916 27 674  
E-mail: oyvind.haug@nexans.com

Name: Alex Overstall  
Role: Project Manager  
Company: Gardline Geosurvey Limited  
Tel: +44 1493 845 600  
E-mail: alexander.overstall@gardline.co.uk

Appendix A: Line plan for Ocean Reliance



Appendix A: RPL List

North Cable Route				South Cable Route			
LAT degree	LAT Decimal minutes	LON degrees	LON Decimal minutes	LAT degrees	LAT Decimal Minutes	LON degrees	LON Decimal Minutes
55	3.542433	-5	2.4887	55	3.516667	-5	2.466667
55	3.558583	-5	2.4887	55	3.516667	-5	2.476717
55	3.631833	-5	3.4887	55	3.533333	-5	2.534117
55	3.710533	-5	3.4887	55	3.55	-5	2.563883
55	3.710833	-5	3.4887	55	3.566667	-5	2.574617
55	3.71735	-5	3.4887	55	3.566667	-5	2.6258
55	3.721033	-5	3.4887	55	3.566667	-5	3.048217
55	3.733683	-5	3.4887	55	3.433333	-5	3.580783
55	3.73745	-5	3.4887	55	3.433333	-5	3.597283
55	3.739167	-5	3.4887	55	3.433333	-5	3.618117
55	3.744933	-5	3.4887	55	3.433333	-5	3.634
55	3.751867	-5	4.4887	55	3.433333	-5	3.653783
55	3.7573	-5	4.4887	55	3.416667	-5	3.664
55	3.772367	-5	4.4887	55	3.416667	-5	3.676983
55	3.7874	-5	5.4887	55	3.416667	-5	3.68405
55	3.794567	-5	5.4887	55	3.416667	-5	3.691333
55	3.779783	-5	5.4887	55	3.416667	-5	3.698783
55	3.751467	-5	6.4887	55	3.416667	-5	3.707317
55	3.723133	-5	6.4887	55	3.416667	-5	3.73415
55	3.71695	-5	7.4887	55	3.416667	-5	3.755067
55	3.694283	-5	7.4887	55	3.416667	-5	3.7644
55	3.687	-5	7.4887	55	3.416667	-5	3.7707
55	3.667033	-5	7.4887	55	3.416667	-5	3.7751
55	3.64035	-5	8.4887	55	3.4	-5	3.781117
55	3.6141	-5	8.4887	55	3.4	-5	3.787033
55	3.6136	-5	8.4887	55	3.4	-5	3.79365
55	3.585533	-5	9.4887	55	3.4	-5	3.802067
55	3.557433	-5	9.4887	55	3.4	-5	3.809767
55	3.5293	-5	10.4887	55	3.4	-5	3.817617
55	3.501133	-5	10.4887	55	3.4	-5	3.830817
55	3.472933	-5	11.4887	55	3.383333	-5	3.849117
55	3.444683	-5	11.4887	55	3.383333	-5	3.8526
55	3.416417	-5	12.4887	55	3.383333	-5	3.8886
55	3.388117	-5	12.4887	55	3.383333	-5	3.90635
55	3.3667	-5	13.4887	55	3.383333	-5	3.925017
55	3.359317	-5	13.4887	55	3.366667	-5	3.941033
55	3.329117	-5	13.4887	55	3.366667	-5	3.954217
55	3.298883	-5	14.4887	55	3.333333	-5	4.124567
55	3.29285	-5	14.4887	55	3.233333	-5	4.5169
55	3.2847	-5	14.4887	55	3.2	-5	4.754017
55	3.28215	-5	14.4887	55	3.083333	-5	6.739117
55	3.277867	-5	15.4887	55	2.85	-5	8.6371



55	3.25915	-5	15.4887	55	2.583333	-5	11.40223
55	3.24085	-5	15.4887	55	2.416667	-5	13.3315
55	3.23345	-5	15.4887	55	2.266667	-5	14.98932
55	3.0864	-5	15.4887	55	2.25	-5	15.23518
55	2.939333	-5	16.4887	55	2.216667	-5	15.36492
55	2.79225	-5	16.4887	55	2.083333	-5	15.76885
55	2.645117	-5	17.4887	55	1.983333	-5	16.0363
55	2.615667	-5	17.4887	55	1.883333	-5	16.31325
55	2.494683	-5	17.4887	55	1.866667	-5	16.82223
55	2.343383	-5	18.4887	55	1.866667	-5	16.93172
55	2.19205	-5	18.4887	55	1.816667	-5	17.18152
55	2.139167	-5	18.4887	55	1.166667	-5	19.36038
55	2.048433	-5	18.4887	55	0.116667	-5	23.03993
55	2.0476	-5	18.4887	54	60	-5	23.42785
55	2.045417	-5	18.4887	54	59.83333	-5	23.91025
55	2.091717	-5	19.4887	54	59.7	-5	24.3225
55	2.127867	-5	19.4887	54	59.4	-5	24.84783
55	2.118683	-5	19.4887	54	58.93333	-5	25.62743
55	2.115967	-5	19.4887	54	58.41667	-5	26.48308
55	2.066283	-5	19.4887	54	58.3	-5	26.6346
55	1.939317	-5	20.4887	54	58.06667	-5	26.86988
55	1.761017	-5	20.4887	54	57.83333	-5	27.03755
55	1.6701	-5	20.4887	54	57.46667	-5	27.27328
55	1.585517	-5	21.4887	54	57.18333	-5	27.44402
55	1.412967	-5	21.4887	54	56.85	-5	27.65888
55	1.240367	-5	21.4887	54	56.61667	-5	27.80782
55	1.17405	-5	22.4887	54	56.38333	-5	27.9521
55	1.076867	-5	22.4887	54	56.31667	-5	28.13003
55	0.919033	-5	22.4887	54	56.23333	-5	28.4523
55	0.761167	-5	23.4887	54	56.05	-5	29.08805
55	0.603267	-5	23.4887	54	55.96667	-5	29.37467
55	0.480933	-5	23.4887	54	55.9	-5	29.6191
55	0.44535	-5	23.4887	54	55.85	-5	29.9286
55	0.287417	-5	24.4887	54	55.83333	-5	29.98132
55	0.129467	-5	24.4887	54	55.81667	-5	30.00023
54	59.98983	-5	25.4887	54	55.8	-5	30.01802
54	59.96377	-5	25.4887	54	55.76667	-5	30.03007
54	59.77408	-5	25.4887	54	55.75	-5	30.02675
54	59.74028	-5	25.4887	54	55.61667	-5	29.93015
54	59.5211	-5	25.4887	54	55.56667	-5	29.89812
54	59.3019	-5	26.4887	54	55.55	-5	29.87182
54	59.13593	-5	26.4887	54	55.5	-5	29.82027
54	59.08412	-5	26.4887	54	55.46667	-5	29.77765
54	58.87082	-5	26.4887	54	55.4	-5	29.76595
54	58.79067	-5	26.4887	54	55.35	-5	29.83993
54	58.67362	-5	27.4887	54	55.3	-5	30.00673
54	58.4861	-5	27.4887	54	55.26667	-5	30.09957

54	58.29857	-5	27.4887	54	55.26667	-5	30.1507
54	58.11102	-5	28.4887	54	55.25	-5	30.1811
54	57.92345	-5	28.4887	54	55.2	-5	30.29602
54	57.91293	-5	28.4887	54	55	-5	30.82148
54	57.80468	-5	28.4887	54	54.86667	-5	31.22812
54	57.70097	-5	28.4887	54	54.86667	-5	31.22883
54	57.6013	-5	29.4887	54	54.78333	-5	31.49477
54	57.47993	-5	29.4887	54	54.75	-5	31.60728
54	57.25817	-5	29.4887	54	54.66667	-5	31.77952
54	57.1567	-5	29.4887	54	54.61667	-5	31.91418
54	57.05358	-5	29.4887	54	54.55	-5	32.10382
54	56.95813	-5	30.4887	54	54.43333	-5	32.43237
54	56.86637	-5	30.4887	54	54.33333	-5	32.7474
54	56.86197	-5	30.4887	54	54.26667	-5	32.99647
54	56.6822	-5	30.4887	54	54.21667	-5	33.17002
54	56.6755	-5	30.4887	54	54.15	-5	33.36505
54	56.54138	-5	31.4887	54	54.08333	-5	33.60562
54	56.52277	-5	31.4887	54	54.03333	-5	33.67218
54	56.499	-5	31.4887	54	53.98333	-5	33.73705
54	56.46602	-5	31.4887	54	53.83333	-5	33.90852
54	56.39937	-5	31.4887	54	53.61667	-5	34.45245
54	56.30102	-5	31.4887	54	53.55	-5	34.81818
54	56.11018	-5	31.4887	54	53.26667	-5	35.5126
54	55.91935	-5	32.4887	54	52.96667	-5	35.8203
54	55.82408	-5	32.4887	54	52.65	-5	36.3614
54	55.78067	-5	32.4887	54	52.53333	-5	36.52588
54	55.76957	-5	32.4887	54	52.43333	-5	36.70333
54	55.73622	-5	32.4887	54	52.33333	-5	36.87222
54	55.66872	-5	32.4887	54	52.25	-5	37.02667
54	55.5846	-5	32.4887	54	52.25	-5	37.02757
54	55.53632	-5	32.4887	54	52.16667	-5	37.15973
54	55.39403	-5	33.4887	54	52.05	-5	37.35585
54	55.36468	-5	33.4887	54	51.9	-5	37.60318
54	55.34452	-5	33.4887	54	51.78333	-5	37.77873
54	55.33615	-5	33.4887	54	51.66667	-5	37.98683
54	55.29277	-5	33.4887	54	51.46667	-5	38.30717
54	55.20158	-5	33.4887	54	51.4	-5	38.40598
54	55.12853	-5	34.4887	54	51.28333	-5	38.61645
54	55.0657	-5	34.4887	54	51.08333	-5	38.94982
54	54.97337	-5	34.4887	54	50.95	-5	39.15577
54	54.94192	-5	34.4887	54	50.88333	-5	39.3703
54	54.92983	-5	34.4887	54	50.7	-5	39.93408
54	54.92393	-5	34.4887	54	50.7	-5	40.18543
54	54.782	-5	35.4887	54	50.68333	-5	40.33427
54	54.63653	-5	35.4887	54	50.68333	-5	40.9797
54	54.49102	-5	35.4887	54	50.66667	-5	41.23825
54	54.41633	-5	36.4887	54	50.66667	-5	41.43555

54	54.36813	-5	36.4887	54	50.63333	-5	41.81968
54	54.26908	-5	36.4887	54	50.61667	-5	42.04408
54	54.17	-5	37.4887	54	50.61667	-5	42.12788
54	54.0709	-5	37.4887	54	50.61667	-5	42.2201
54	54.0176	-5	38.4887	54	50.61667	-5	42.27458
54	54.00162	-5	38.4887	54	50.61667	-5	42.30085
54	53.98012	-5	38.4887	54	50.61667	-5	42.31942
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54	53.81305	-5	38.4887	54	50.6	-5	42.41527
54	53.80677	-5	38.4887	54	50.6	-5	42.43185
54	53.70718	-5	38.4887	54	50.6	-5	42.4449
54	53.68837	-5	38.4887	54	50.6	-5	42.45507
54	53.67993	-5	38.4887	54	50.6	-5	42.46468
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54	53.48557	-5	38.4887	54	50.6	-5	42.51473
54	53.47302	-5	38.4887	54	50.6	-5	42.53092
54	53.4357	-5	38.4887	54	50.6	-5	42.54265
54	53.3379	-5	38.4887	54	50.6	-5	42.55672
54	53.30025	-5	38.4887	54	50.6	-5	42.56962
54	53.05703	-5	38.4887	54	50.6	-5	42.57895
54	52.81382	-5	38.4887	54	50.6	-5	42.58778
54	52.78707	-5	38.4887	54	50.6	-5	42.5983
54	52.55592	-5	39.4887	54	50.6	-5	42.60248
54	52.39583	-5	39.4887	54	50.6	-5	42.60717
54	52.2958	-5	39.4887	54	50.6	-5	42.61302
54	52.03505	-5	39.4887	54	50.6	-5	42.62003
54	52.0294	-5	39.4887	54	50.6	-5	42.62845
54	51.99445	-5	39.4887	54	50.61667	-5	42.63925
54	51.95343	-5	39.4887	54	50.61667	-5	42.64707
54	51.88057	-5	39.4887	54	50.61667	-5	42.65695
54	51.82577	-5	39.4887	54	50.61667	-5	42.6728
54	51.6625	-5	40.4887	54	50.61667	-5	42.67977
54	51.63772	-5	40.4887	54	50.61667	-5	42.68588
54	51.47633	-5	40.4887	54	50.63333	-5	42.69602
54	51.4499	-5	40.4887	54	50.63333	-5	42.70645
54	51.35687	-5	40.4887	54	50.63333	-5	42.71507
54	51.27007	-5	41.4887	54	50.65	-5	42.76927
54	51.26463	-5	41.4887	54	50.8	-5	43.2306
54	51.07722	-5	41.4887	54	50.8	-5	43.29838
54	50.98813	-5	41.4887	54	50.81667	-5	43.3346
54	50.91668	-5	41.4887	54	50.8	-5	43.33935
54	50.90682	-5	41.4887				
54	50.86487	-5	42.4887				

54	50.84802	-5	42.4887
54	50.82055	-5	42.4887
54	50.7974	-5	42.4887
54	50.75503	-5	42.4887
54	50.74035	-5	42.4887
54	50.73185	-5	42.4887
54	50.73167	-5	42.4887
54	50.73147	-5	42.4887
54	50.73122	-5	42.4887
54	50.73068	-5	42.4887
54	50.7304	-5	42.4887
54	50.73008	-5	42.4887
54	50.72893	-5	42.4887
54	50.74357	-5	42.4887
54	50.79992	-5	43.4887
54	50.80363	-5	43.4887
54	50.8106	-5	43.4887
54	50.81483	-5	43.4887