LEASK MARINE

METHOD STATEMENT

Alabama Wreck Survey

Prepared for:

Wallace Stone
Consulting Civil Engineers

Revision:	Date:	Project No:
R01	18-09-2019	11001

Document Type:
External

Document Number:
LSK-11001-OP01-MS01-R01 – Alabama Wreck Survey

Leask Marine Ltd.
6 Crowness Road
Hatston Industrial Estate
Kirkwall, Orkney,
KW15 1RG

Leask Marine Wales Office
2nd Floor, Pier House
Pembroke Dock
Pembrokeshire
SA72 6TR

Leask Marine (Ireland) Ltd
Unit 3
Olympic House
Pleasant Street
Dublin 8
D08 H67X

Raptor Anchoring Ltd
6 Crowness Road
Hatston Industrial Estate
Kirkwall, Orkney,
KW15 1RG

T: +44 1856 874 725
T: +44 1792 482 469
T: +353 (0) 196 85 955

E: info@leaskmarine.com
W: www.leaskmarine.com

Document History & Status

Revision	Author	Approved by (Internally)	Date Approved	Date Issued
1.0	S.Bremner/E. Ramirez	D. Leask	18-09-2019	18-09-2019
2.0				
3.0				

Document Distribution

Revision	Media	Distribution Allocation	Distribution Date	Company
1.0	E-Copy	J. Porteous	19-09-2019	Wallace Stone LLP
1.0				

References

All References and information contained in this document is related to information provided by the Client / Contractor:

1. LSK-MS01-Mooring Installation and Demobilisation
2. A6250_Glumaig Harbour MBES [PDF Sheet 1 of 3]
3. A6250_Glumaig_0-5m_CD_Imagery

Table of Content

1 INTRODUCTION

1.1 Project Overview

The SS Alabama was on passage from Copenhagen to Baltimore and was driven into Stornoway seeking shelter. She sank there, possibly after a fire.
Leask Marine has been contracted to carry out a reconnaissance survey and assessment of the wreck SS Alabama n ear Stornoway. The purpose of the operation is to assess how much of the wreck projects above -8m CD.

Figure 1 – Project Picture

1.2 Site Details

A position of 58 11 50N, 006 23 02W, is given and the site is marked by spherical buoy. The fore part of the wreck shows at low water, and the bridge and stern are awash at high water. The stern is marked by post which shows 1.2 metres at high water and is in a position bearing 297.5 degrees.

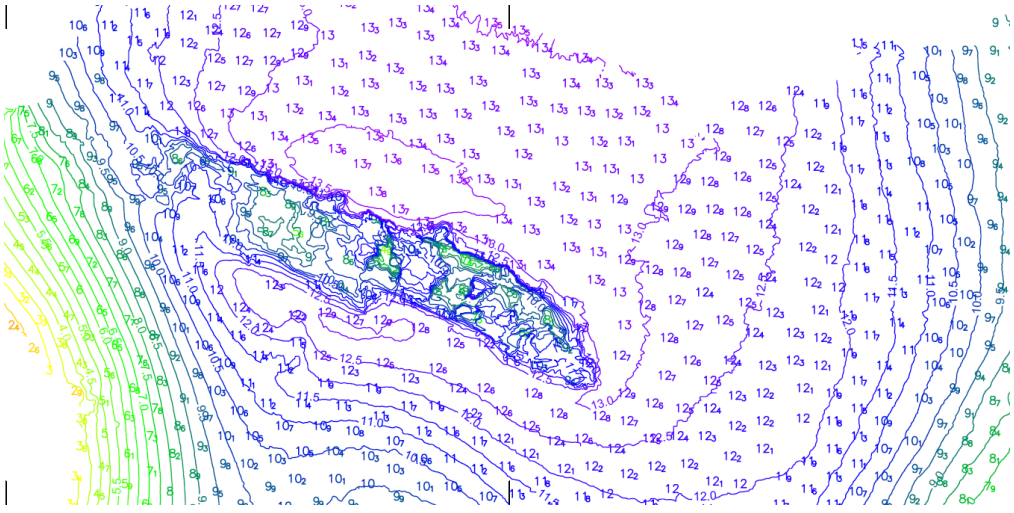


Figure 2 – Chart

1.3 Document Objective

This document outlines the methodology that Leask Marine will adopt undertake the diving survey of the SS Alabama

1.4 Task Summary

The following task summary does include the installation and demobilisation of Leask Marine multicat mooring clumps.

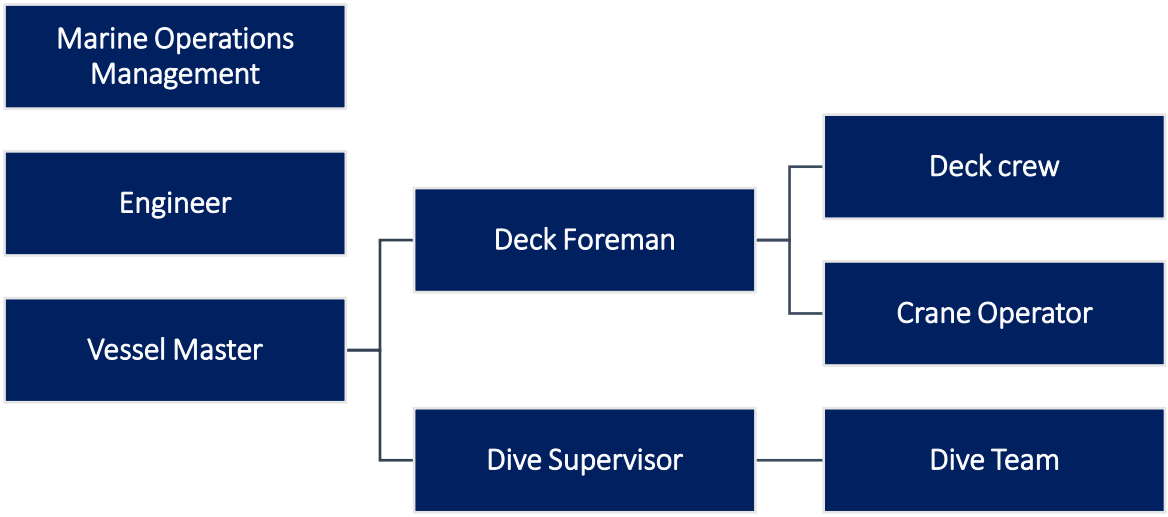
No.	TASKS
1.	Arrive on site, set up tide gauge and instal moorings
2.	Diving Survey Operation
3.	Remove moorings and tide gauge on completion
4.	Provide full report to client

All mooring operations can be found in the reference document:

- **LSK-MS01-Mooring Installation and Demobilisation**

2 OPERATION PARTICULARS

2.1 Operation Structure



2.2 Interfaces & Contacts

Client	Wallace Stone LLP
Marine Contractor	Leask Marine Ltd.

Wallace Stone LLP

TITLE	NAME	TELEPHONE	MOBILE
Director/Partner	John Porteous	01851-612454	
Project Manager	tbc		
Operations & Maintenance Manager	tbc		
Operation Engineer	tbc		
Duty Manager	tbc		

Leask Marine

TITLE	NAME	TELEPHONE	MOBILE
Director	Douglas Leask	+44 (0) 1856 874 725	+44 (0) 7889 651 680
Operation Manager	Oliver Bethwaite	+44 (0) 1856 874 725	+44 (0) 7966 228 830
Commercial Manager	John Macleod	+44 (0) 1856 874 725	-
C-Odyssey	-	-	+44 (0) 7718 424 491
Engineer	Sandy Bremner	+44 (0) 1856 874 725	+44 (0) 7840 856 900

2.3 Communications

Internal Communications will be carried out by VHF and UHF radio with the following channels:

- Emergency Channel – VHF Channel 16
- Leask Marine – VHF Channel 74
- VTS – VHF Channel 11

2.4 CLIENT Requirements

To undertake a reconnaissance survey and assessment of the wreck of SS Alabama, near Stornoway. The purpose of the operation is to assess how much of the wreck projects above -8m CD, and to make an estimate of the cost of removing these parts.

The wreck lies close in to the shore on the west side of Glumaig Bay, in water depth around 12 m below CD. Since the sinking of the vessel in 1904, there have been two attempts to blow it up and various attempts to disperse the wreckage by use of towed cables. As a result there is little resemblance to a vessel on viewing the remains.

Provided is a bathy survey and imaging which show the wreck in the NW corner of the views. The light green areas on the image are approximately the sections needing removed.

2.5 Permits / Notification

CONFIRMATION OF ISOLATION / PERMIT TO WORK

HOLD	**Permit Number** _____ Permit Holder _____ Company _____ Date Valid from _____ Date expiry _____

HOLD	All personnel onsite notified of operations	Signed _____ Date ____/_____/_____

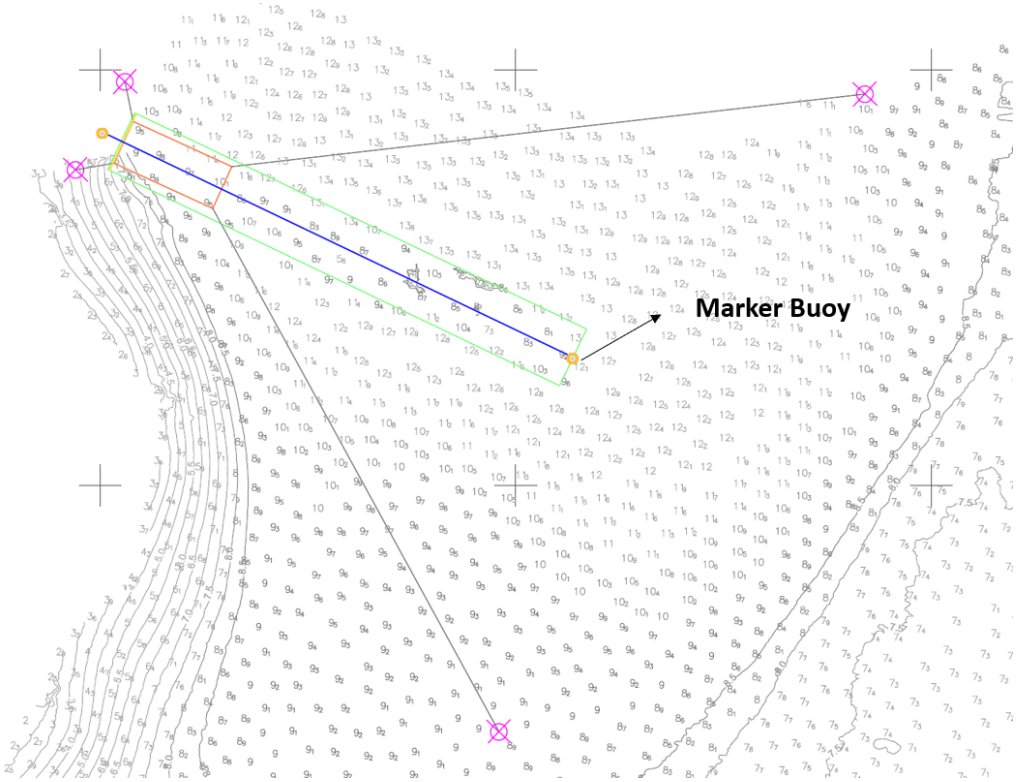
HOLD	**Communications check** Local marine services (P1) Crane Operator / Banksman (VHF 74) Vessel Master (VHF 74) Dive Supervisor (VHF 74)	Signed _____ Date ____/_____/_____

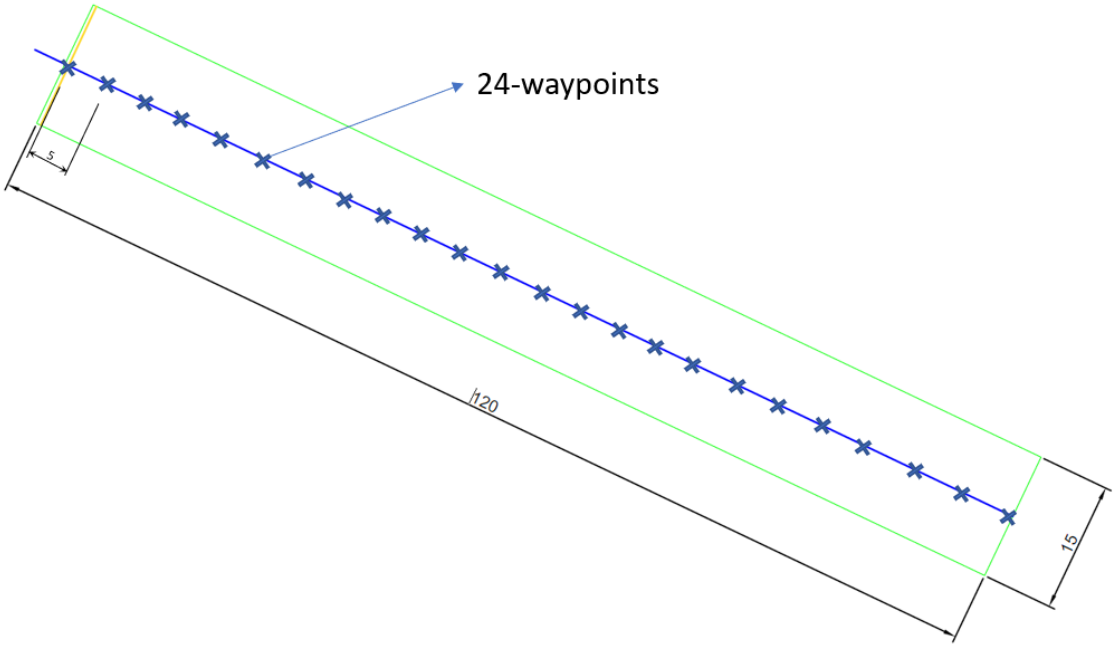
3 OPERATIONS PARTICULUARS

In order to obtain the best results during the survey Leask Marine has identified a sweep area of 120m long by 15m wide

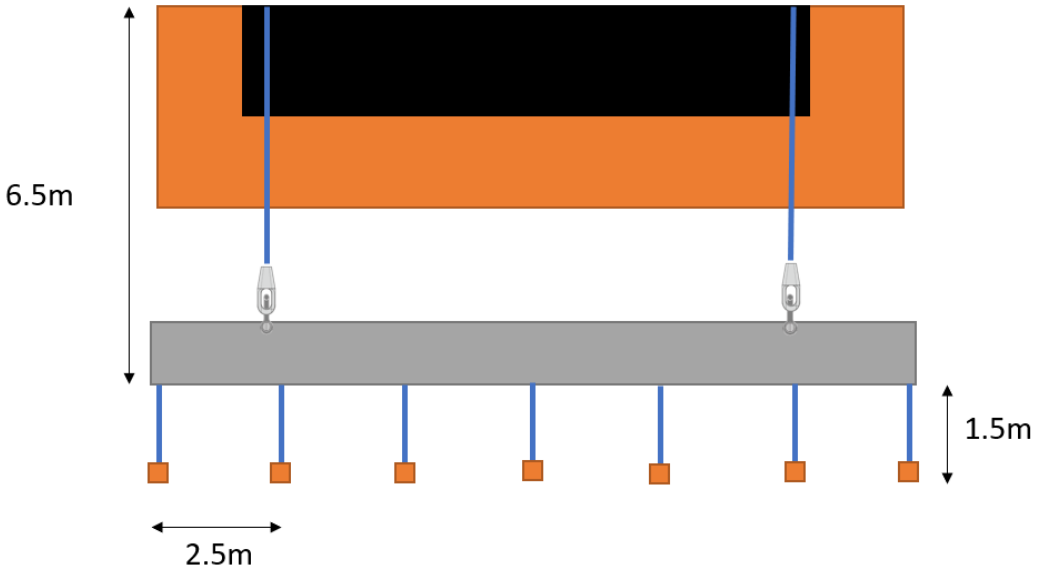
To ensure the vessel follows a straight line from beginning to the end two marker buoys will be installed at the centre of sweep area at both ends. We will also be using the EIVA NaviPac software survey spread for accurate readings of location.

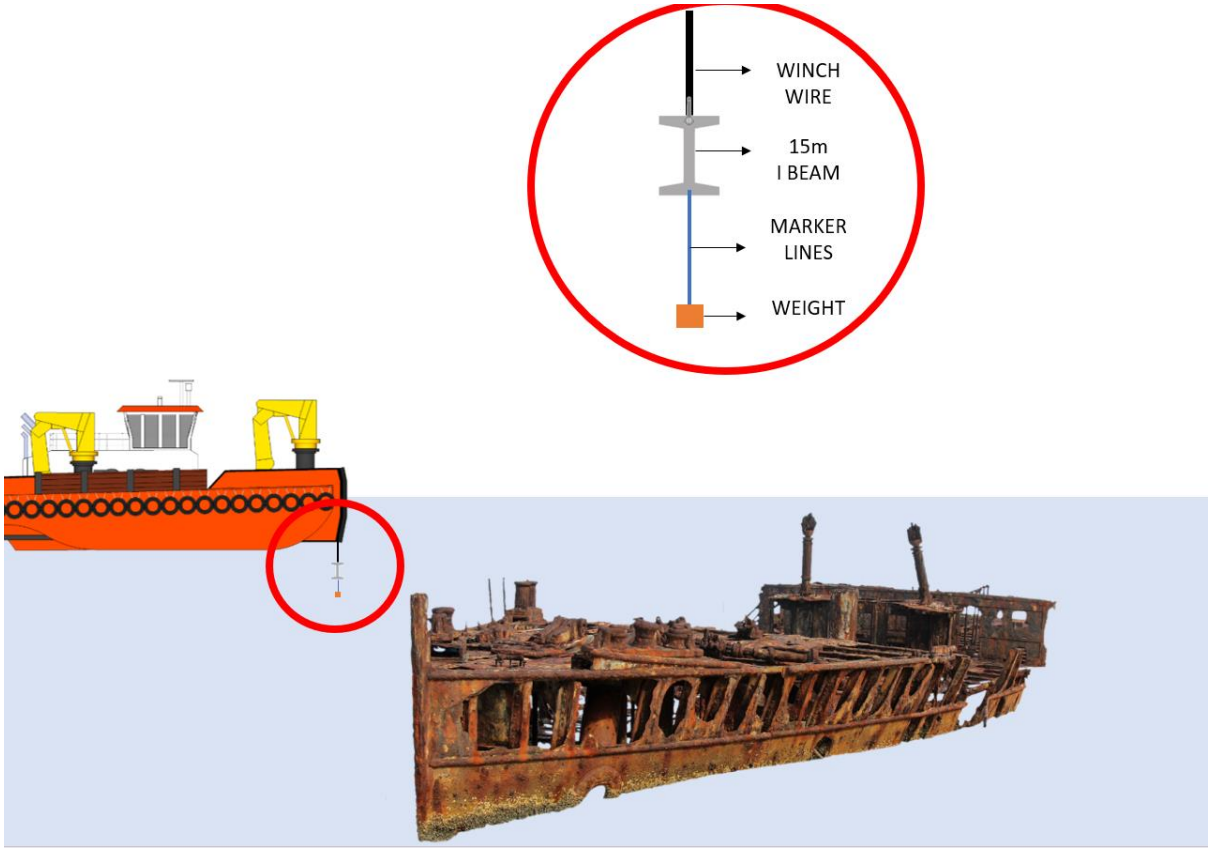
On addition the spread of the vessel has 24 waypoints; each point every 5m, to have more accurate recordings.





3.1 Rigging Arrangement




WINCH
WIRE
15m
I BEAM
MARKER
LINES
WEIGHT

3.2 Equipment List

All the equipment required for the operation is listed below.

Equipment	Quantity	Supplied
Moorings		
REF: • **LSK-MS01-Mooring Installation and Demobilisation**		
Equipment		
Survey beam 15m long	1	LM
Dive spread	1	LM
EIVA NaviPac survey spread software on vessel	1	LM

Table 1 – Equipment List

3.3 Deck Layout

The equipment mentioned before will be arranged onto deck as in the picture below.

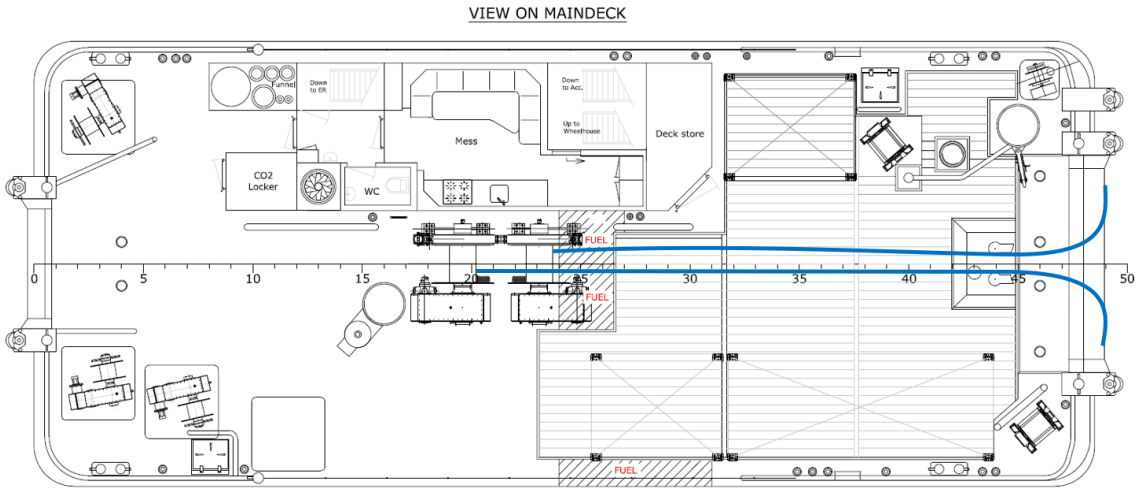


Figure 3 – Deck Layout

4 MOORING AND VESSEL POSITIONS

The mooring system suitable for the deployment is shown in

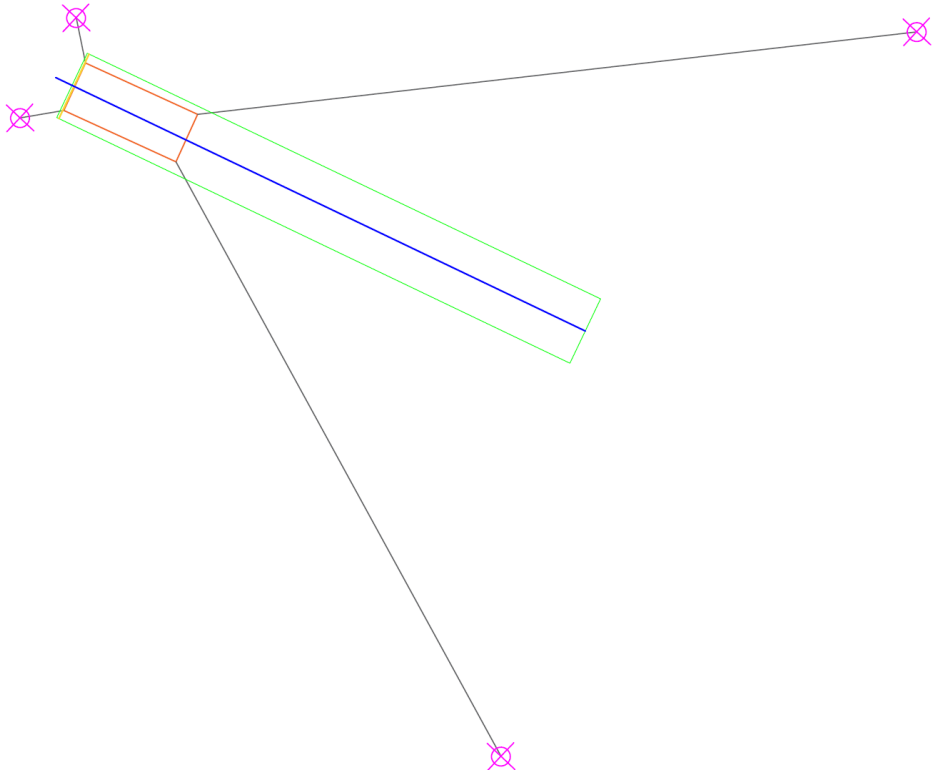


Figure 4.

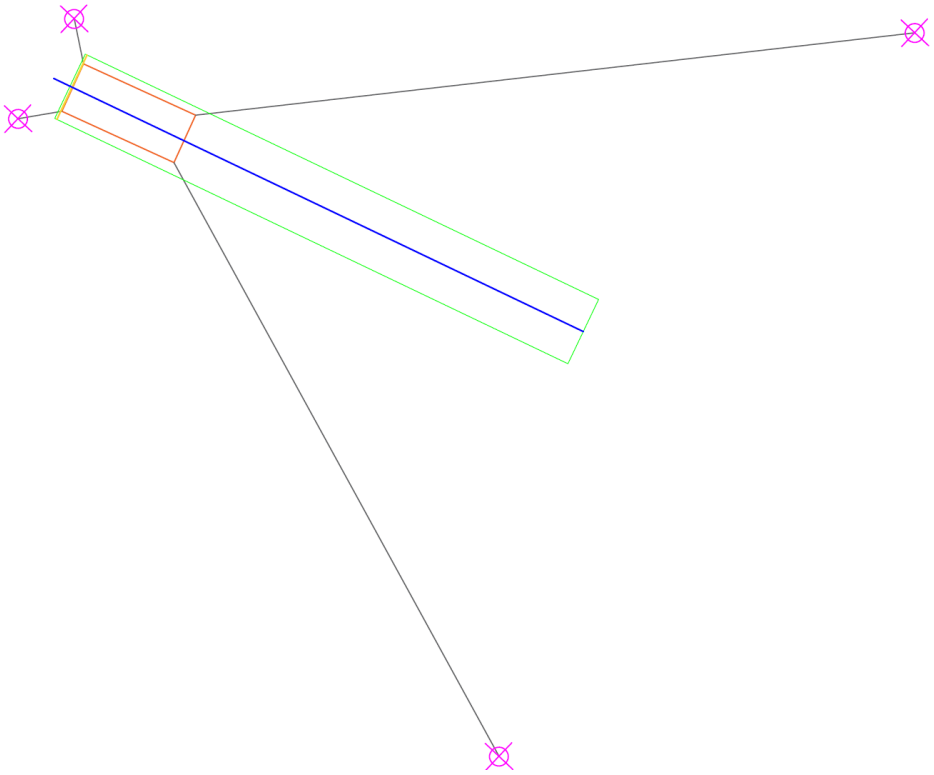


Figure 4 – Mooring and Vessel positions

CLUMP WEIGHT POSITION	EASTING	NORTHING
North Clump Weight	TBC	TBC
South Clump Weight	TBC	TBC
East Clump Weight	TBC	TBC
West Clump Weight	TBC	TBC

Table 2 – Mooring Position

5 METHODOLOGY

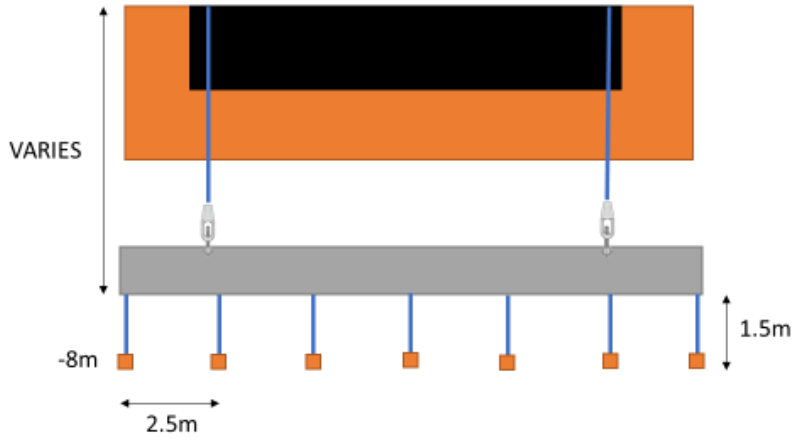
Task #1 Arrival on Site, Tide Gauge and Mooring Set-Up

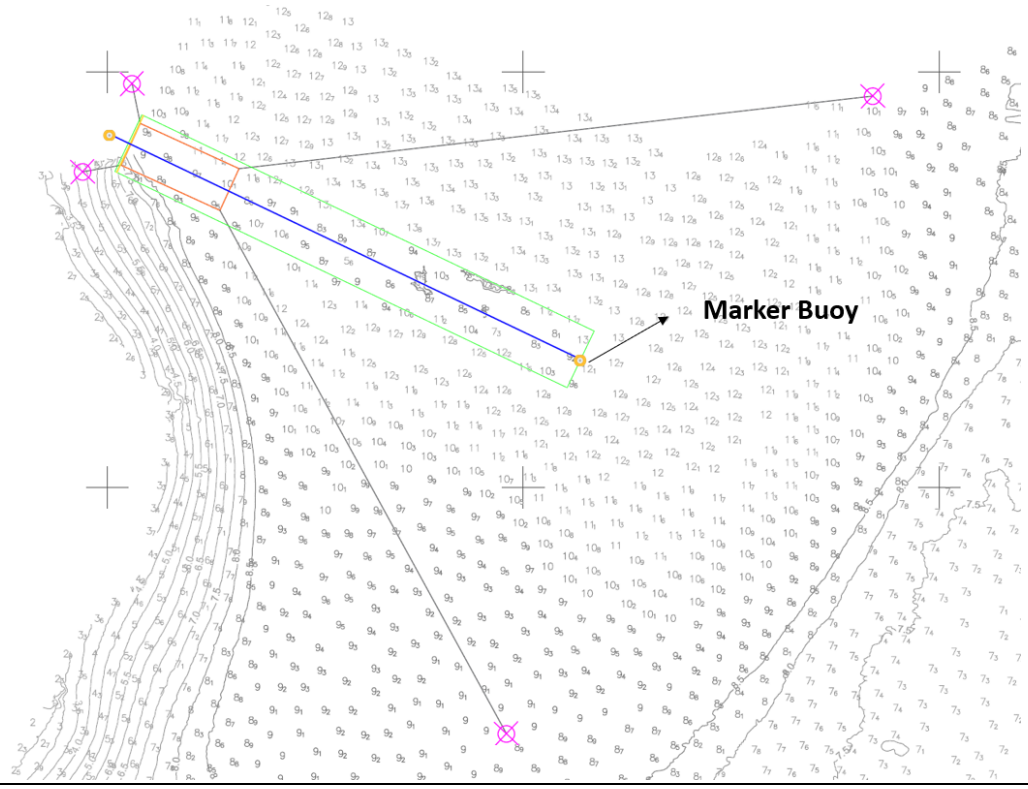
HOLD	Toolbox Talk	Supervisor Signature and Date
	1. PERMITS IN PLACE 2. TIDE GAUGE CHECK 3. MOORING INSTALLATION	

Task	Task Summary	Comments	Check
1.1	Arrive in Stornoway with vessel and meet client to discuss procedures and agree method to measure finished and cut off depth (-8m OD) on site. Have all permits in place for operations.		
1.2	Check for tide gauge at Arnish pier. If there isn't one transfer info from Stornoway to temp one erected for the works.		
1.3	Set up working gauge on shoreline next to survey area for reference.		
1.4	Vessel to sail to site and deploy 4 point moorings clear of survey area. This will allow the vessel to transverse the wreck site allowing the diver to record all required information. • **Refer to: LSK-MS01-Mooring Installation and Demobilisation**		

Task #2 Diving Survey Operation

HOLD	Toolbox Talk	Supervisor Signature and Date
	1. SURVEY BEAM PREPAPARETION 2. DIVING OPERATION 3. SURVEY OPERATION 4. PPE WEAR AT ALL TIMES	

Task 2	Task Summary	Comments	Check
2.1	Once in position vessel crane to lift survey beam over bow and lower to required level.		
HOLD	DIVE SUPERVISOR TO ENSURE CONDITIONS ARE SAFE FOR DIVING OPERATION		
2.2	Diver ready to enter water.		
2.3	Operative on-board vessel above diver to hold tape at correct height for diver to check survey beam settings. See survey beam drawing. 		
2.4	The survey beam will be set at -6.5m OD. There will be 1.5m long weighted marker lines hung below the survey beam. This will allow the diver to record the heights of the wreck structure and limit the number of times the survey beam has to be raised and lowered to pass the obstructions		
2.5	Diver to then record size of structure above the cut line (-8m CD) and relay to supervisor for recording. This will be done working from the survey beam as the vessel slowly moves ahead on the 4 point moorings. It will advance 5m at a time for the diver to record the wreckage. This will cover the approx 120m by 20m of the wreck area.		

	The beam will be adjusted for height to maintain working height as tide rises/drops. 	
2.6	There may be some points beyond this area to also be recorded due to the condition of the wreck. These will be picked up once main sweep is carried out.	

Task #3 Tide Gauge and Mooring Recovery

HOLD	Toolbox Talk	Supervisor Signature and Date
	1. MOORING RECOVERY 2. TIDE GAUGE RECOVERY 3. PPE WEAR AT ALL TIMES	

Task 3	Task Summary	Comments	Check
3.1	Once all parties satisfied with recordings vessel can remove moorings, marker buoys and all bits used for works before leaving the site. • **Refer to: LSK-MS01-Mooring Installation and Demobilisation**		
3.2	Remove tide gauge on completion of works		
3.3	Report written up by Engineer with dimensions and layout of areas of the wreck to be removed. This will be shown in a grid drawing with information of each piece of wreckage which needs to be removed. Width length and height of the obstruction will be recorded. Photos will be taken as required. • Detail as per agreed with client.		
3.4	Lessons learnt discussion to be carried out after a shift if required and at end of task.		

Task #4 Report

Task 4	Task Summary	Comments	Check
4.1	Report to be produce as per client requirements after survey completion		

6 RISK ASSESSMENT

To consult the Task Specific Risk Assessment, please see/refer to document
LSK- 11001-RA01- Wreck Survey

6.1 Generic Risk Assessment

In the following tables are summarized the Generic Risk Assessment and mitigation measures related to this project.

Assessment No	Activity / Process	Review Date
TRA DO - 003	Seabed Debris	Jan 2020
TRA DO - 030	Contaminated Water	Jan 2020
TRA DO - 032	Weather conditions for diving	Jan 2020
TRA DO - 033	Working in Tidal conditions	Jan 2020
TRA DO - 040	Crane Underwater	Jan 2020
TRA DO - 042	High pressure flexible hoses	Jan 2020
TRA DO - 048	Man basket	Jan 2020
TRA DO - 120	Diving ops surface supply	Jan 2020
TRA VO - 001	Vessel Access & Egress	Jan 2020
TRA VO - 002	Personnel Transfer	Jan 2020
TRA VO - 010	Working at height	Jan 2020
TRA VO - 012	Working Overboard	Jan 2020
TRA VO - 021	Sea state	Jan 2020
TRA VO - 031	Crane Operations	Jan 2020
TRA VO - 033	Drop camera	Jan 2020
TRA VO - 050	Anchoring Operations	Jan 2020
TRA VO - 054	Diving operations	Jan 2020
TRA VO - 081	Man Overboard	Jan 2020
TRA VO - 101	**Crew Health**	Jan 2020

7 TOOLBOX TALK BRIEFING

Date _____/_____/2019

Project Briefing	**Details of Project:**	
Safety: All PPE to be worn at all times		**RA No.**
Site Location	**Documentation Numbers:**	**Communications**

Generic Task Hazards		
☐ Slips, trips & falls	☐ Dropped Objects	☐ Manual handling
☐ Lifting operations	☐ Access on deck	☐ Restricted access
☐ Entrapment	☐ Hot works	☐ Flammable gases / liquids
☐ Man overboard	☐ Swinging loads	
☐ Working at height	☐ Wire / Chains under tension	☐ Deck operations
		☐ Visibility

Attendance Record

Name (print)	Job	Sign	Date

Briefing Feedback Remarks:	**Mitigation / additional requirements**
Induction / TBT conducted by :- **Signed:**	**Date:** **_____/_____/2019**

8 CHANGE OF RECORD (MANAGEMENT OF CHANGE)

01	Risk Assessment Review Update		
1.			
Date:	Name:	Why?	Sign:
2.			
Date:	Name:	Why?	Sign:
3.			
Date:	Name:	Why?	Sign:

02	Method Statement Revision		
1.			
Date:	Name:	Why?	Sign:
2.			
Date:	Name:	Why?	Sign:
3.			
Date:	Name:	Why?	Sign:

03	Emergency Plan Update		
1.			
Date:	Name:	Why?	Sign:
2.			
Date:	Name:	Why?	Sign:

9 SITE & WEATHER REQUIREMENTS

9.1 Site Controls

Suitable site controls will be put in place which will include but may not be limited to:

- Risk assessment
- Tool box talks
- Ensure all emergency equipment on site is ready for use
- Any additional hazards to be identified and added to change of records form
- Ensure permit to work system is in place
- Sea Swell to be monitored at all times
- Tide to be monitored at all times
- Surface conditions to be monitored at all times
- Leask Marine Permit to work system signed off by client

9.2 Project Hazard Identification

- Sea Swell
- Vessel Moorings (stability)
- Tide
- Moving Machinery
- Underwater Crane / Winch Movements
- Heavy Loads (pinch points)
- Structure Stability
- Diver ops
- Structure stability diver working on

All items listed above will have appropriate Risk Assessments

9.3 Weather & Current

- Dive supervisor and vessel skipper to agree on decisions if conditions are unsafe and not suitable for operations.
- Dive Supervisor and vessel skipper to monitor at all times.
- (Designated communication VHF channel 74 to be kept clear during diving operations)
- Dive working parameters as stated below:

Dive Method	Current (Knots)					
	0-0.5	0.5-0.8	0.8-1.0	1.0-1.2	1.2-1.5	Over 1.5
Surface supply – Mid water	(1)	(2)	(3) + (4)	(4)		
Surface supply – Bottom	(1)	(1) + (2)	(2) + (3)	(3)	(4)	
Basket / Bell – Mid water	(1)		(1) + (2)	(3)	(4)	
Basket / Bell – Bottom	(1)		(1) + (2)	(3)	(4)	

Description: (1) Suitable for working with local factors taken into account.
(2) Some restrictions will apply, observation should be workable.
(3) Probably unsuitable, but local factors may permit.
(4) Unsuitable without cofferdam protection

Source - ADC-CoP: 001 – 7.6

The weather limits are:

OPERATION	Sign. Wave Height	Wind Speed	Tidal Current
Vessel Operation	< 2.0 meters	<20 knots	-
Lifting Operation	< 1.0 meters	<10 knots	< 2.0 knots
Diving Operation	< 1.0 meters	<10	< 1.0 knots
Towing Operation	< 1.5 meters	<20 knots	< 5.0 knots

Vessel Master to monitor the weather condition all the times and make decision if site conditions are safe for operations and for personnel operating.

9.4 Access & Site Environment

All work sites are controlled for the duration of the operation:

- Secure site – All Leask Marine personnel to sign in/out
- Leask Marine permit to work required
- Works to be carried out from Vessel
- Crane / Man basket available

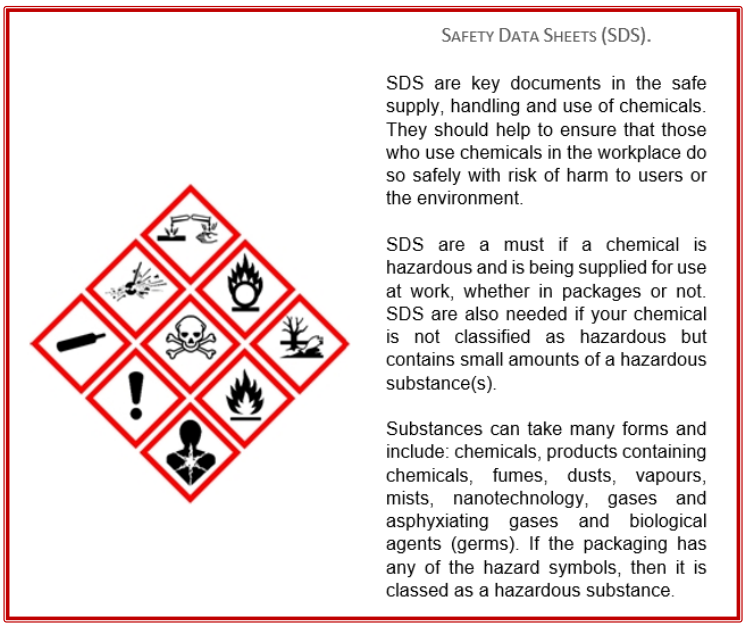
HOLD	**Daily Operations Meeting** Vessel Master / Project Operations Manager to confirm all vessel movements with other site parties and ensure all notifications are in place	Signed _____ Date ____/_____/_____

10 QHSE

10.1 Manual Handling

- Avoid hazardous manual handling operations so far as is reasonably practicable, for example by redesigning the task to avoid moving the load or by automating or mechanising the process.
- Make a suitable and sufficient assessment of any hazardous manual handling operations that cannot be avoided.
- Reduce the risk of injury from those operations so far as is reasonably practicable. Where possible, use mechanical assistance. Where this is not reasonably practicable, look at ways of changing the task, the load and working environment.
- Any amendments please add to change of records form found in this Method statement.
- For additional information please refer to the company handbook or the HSE website (www.hse.gov.uk)

10.2 COSHH



- Safety data sheets will be provided with any substance in use.
- For additional information please refer to company handbook or the HSE website (www.hse.gov.uk)

10.3 PPE Requirement

- Relevant PPE to be worn at all times.
- Additional PPE will be provided depending upon the activity being undertaken.

Leask Marine Ltd minimum requirement when working:

- Hard Hat
- Safety Glasses (weather / task dependent)
- Safety Gloves
- Deck Vest 275N with Lights and spread hood
- Safety clothing
- Steel toe safety footwear

Divers have own additional PPE for their operations but must wear above when on deck.

10.4 HSE Medical & First Aid Equipment

Equipment	Location
Mobile O2 Administration Kit	Dive Unit
First Aid Kit	Vessel Galley
Burns Kit	Vessel Galley
Eye Wash Kit	Vessel Galley

10.5 Personnel Qualifications

- Full equipment and vessel certification pack is available
- Senior Personnel CV's are made available on request

11 DIVING PARTICULARS

11.1 Diving Tables

- United States Navy dive tables Rev 7
- Company Procedure +1 safety margin on selected table for working depth.

11.2 Diving Team Size

Dive Team 5 Personnel:

- Dive Supervisor
- Diver 1
- Standby Diver
- + 1 Extra Diver
- Tender

Minimum team size 5 personnel. Team size maybe increased, or divers exchanged depending on job requirements. Dive supervisor to amend as required.
There will be an Engineer recording all information and supervising the survey in addition to the 5 man team.

11.3 Diver Supervisor

- A standby diver will always be available at immediate readiness to provide any necessary assistance to the diver, whenever a diver is in the water, as instructed by the supervisor.
- The standby diver shall be fully dressed to enter the water, but does not need to be wearing the mask or helmet, but this does need to be fully operational and be immediately to hand, i.e. connected to the bail out and harness, properly tested and held by the diver or supported at or close to chest height.
- Where there are two working divers in the water at any one time, there must be a standby diver available on the surface for each pair of divers, to render assistance as instructed by the Supervisor.

11.4 Helmets

Diver 1	-	KM 27 SL
Diver 2	-	KM 27 SL
S/Diver	-	KM 28
Spare	-	KM 27 SL

11.5 Decompression Arrangements

Decompression Chamber on board of vessel

11.6 Suitability of Air Supply

Diver 1

- 3 x 50 litre cylinders 232 Bar (Primary) - (21%)
- 1 x 50 litre cylinder 232 Bar (Secondary) - (21%)
- 1 x 50 litre cylinder 232 Bar (Emergency) - (21%)
- Bailout Cylinder 12 litre (Emergency 2) - (21%)

Diver 2

- 1 x 50 litre cylinders 232 Bar (Primary) - (21%)
- 1 x 50 litre cylinder 232 Bar (Secondary) - (21%)
- 1 x 50 litre cylinder 232 Bar (Emergency) - (21%)
- Bailout Cylinder 12 litre (Emergency 2) - (21%)

Standby Diver

- 1 x 50 litre cylinders 232 Bar (Primary) - (21%)
- 1 x 50 litre cylinder 232 Bar (Secondary) - (21%)
- Bailout Cylinder 12 litre (Emergency 2) - (21%)

11.7 Diver Launch & Recovery

- Primary - Dive ladder for access and egress (Maximum height 1.5 meters)
- Secondary - Crane with man basket available in emergency.
- Emergency Harness located on-board vessels.

11.8 Letter of Appointment of Diving Supervisors

Leask Marine Ltd
6 Crowness Road
Hatston Industrial Estate
Kirkwall
Orkney
KW15 1RG

T/F: +44 (0) 1856 874 725
W: www.leaskmarine.com
E: info@leaskmarine.com

January 1, 2019

To whom it may concern

Appointment of Diving Supervisor

In accordance with the Diving Operations at Work Regulations 1997 – Regulation 9 (1), 9(2) And Regulation 10(1), (9) (I)

Mr Andrew Stewart

Is appointed to act as Diving Supervisor for Diving Projects conducted by Leask Marine.

Yours faithfully,

D Leask

Douglas Leask

Managing Director

12 APPENDIX A: VESSELS & EQUIPMENT

12.1 Main Vessels

Specifications — MV C-ODYSSEY

General

Type Of Vessel	Multiworker Twenty6
Year Built	2011
Category	MCA Cat 1
	Up to 150 Miles
	(from safe haven)
Passengers	12 Plus Crew
Flag State	UK
Port Of Registry	Kirkwall
MMSI No.	235088132
IMO No.	9636307
Call Sign	2ETW7
Official Number	917987

Dimensions

Length	26m
Beam	10.5m
Depth	3.5m
Draught	2.5m
Air Draught - Mast Up	13.8m
Air Draught - Mast Down	8.2m
Gross Tonnage	150t
Free Deck Space	120m²

Tank Capabilities

Fuel/Oil	100m³
Black/Grey Water	9m³
Fresh Water	45m³
Dirty Oil	0.9m³
Ballast Water	88m³

Accommodation

Cabins	2 Off Twin Berth
	2 Off Single Berth
Large Mess Room	
Galley And Laundry	

Deck Equipment

Towing Winch	60t
Anchor Handling	60t
(Combined Lift)	120t
Tugger Winch	3 x 15t
Tower Hook	SWL 25t
Capstan	5t
Bow Roller	5m SWL 120t
Aft Roller	3m SWL 60t
Deck Carrying Capacity	100t
Deck Crane	Hs 185t/m 5530kg @ 18.5m
Deck Crane (aft)	Hs 60t/m 4630kg @ 10m

Hydraulic Towing Pins/Stopper

Pins

SWL	50t
Design Load	105t
Hub	400mm

Stopper

SWL	75t
Design Load	150t
HubFree Deck Space	400mm

Generators

1 Off 78 KVA
1 Off 35 KVA
K.W. 1790

Propulsion System

Main Engines	2 x Caterpillar C32
Total Power	2,400bhp at 1,800 rpm
Propulsion	2 x Fixed Pitch Propellers
	Nozzles 1,500mm

Peformance

Bollard Pull	27t
Speed	10 Knots

END OF DOCUMENT