

MOTT MACDONALD – A494 RIVER DEE ECI A494 BRIDGE PIER INSTALLATION METHOD STATEMENT R7M-522027-MST-004

This Sheet Must be Completed at Each Revision Once Approved for Issue

Prepared By		Niall McGill	Senior Engineer		
Checked By		Ryan Deakin-Hough	Lead Engineer		
Approved By		Niall McGill	Senior Engineer		
Review Period		After 12 months or any changes to methodology			
C0	01/05/2025	Issued for Use	NMG	RDH	RDH
Rev	Date	Description	Prep	Chk	Appr

Method Statement–A494 Bridge Pier Installation

R7M-522027-MST-004
Rev C0



Revision History

Rev	Date	Description
C0	02/05/2025	Client Issue

Table of Contents

1.0	Project Details.....	3
1.1	Project Name.....	3
1.2	Location of Mobilisation.....	3
1.3	Introduction.....	3
1.4	Introduction.....	3
2.0	Contacts.....	3
3.0	Barge, Plant and Equipment Details	4
3.1	Jack-Up Barge Information	4
3.2	Jack-Up Barge Spud Can Information	5
3.3	Mobilisation Crawler Crane Information.....	6
3.4	Crawler Crane Information	7
3.5	Drill Rig Information	8
4.0	Location of Operation.....	9
4.1	Operating Parameters	11
4.2	Beaufort Scale Extract	11
5.0	Methodology	12
6.0	Standard Operations	16
6.1	Sea Fastenings.....	16
6.2	Lifting Operations.....	16
7.0	Required Personal Protective Equipment	17
8.0	Emergency Procedures	18
8.1	First Aid	18
8.1.1	On Site First Aider.....	18
8.1.2	General First Aid Procedure	18
8.2	Hospital Routes.....	19
8.3	Man Over-Board Procedure	20
8.4	Fire Procedure.....	21
8.5	Spill Procedure	21

1 Introduction

A494 Bridge Construction Scheme is located along the River Dee at the Queensferry crossing.

This document has been produced to detail the procedures and methodology to be employed for the utilisation of Red7Marine's (R7M's) Haven Seaseven Jack Up Barge and a Flat-Top Barge to assist with the construction of two new in-river bridge piers. Each pier will consist of 12 rotary bored piles, drilled under fluid, with permanent casings toeing into the firm clays. A concrete capping beam will be casted in-situ or pre-casted on the piles with bridge bearings casted at the top of slab.

It should be noted that this document has been produced as a guide and is subject to change pending the final contractors selected methods and site conditions on the day of operation.

1.1 Abbreviations

ALARP	As Low As Reasonably Possible
HIRA	Hazard Identification & Risk Assessment
HSE	Health & Safety Executive
IJUBOA	International Jack Up Barge Owners Association
IMS	Integrated Management System
JUB	Jack Up Barge
R7M	Red7Marine I&C Ltd
RAMS	Risk Analysis Management Systems
TBT	Tool Box Talk
WAH	Working at Height

2 Contacts

Name:	Mark Walton	Address:	Cliff Road, Cliff Quay, Ipswich, Suffolk IP3 OAX
Position:	Engineering Director		
Tel:	01255886710		
Mob:			
Email:			
Notes:	-		

3 Barge, Plant and Equipment Details

3.1 Jack-Up Barge Information

The Haven Seaseven, also as known as C-7 Series Modular Self Elevating Platform, is 30.50m in length, 18.30m wide and has a hull depth of 2.13m. The barge is equipped with 4 number of legs 1.22m diameter 38m long legs.

Additional information of the barge can be found in the table below.



Type:	C-7 Series Modular Self Elevating Platform
Classification:	Bureau Veritas Hull Offshore Self-Elevating Unit
Length:	30.50m
Breadth:	18.30m
Depth:	2.13m
Deck Area:	520m ²
Max Leg Length:	38.00m
Leg Diameter:	1.22m
Jacking Speed:	15m / hour
Jacking Stroke:	0.69m
Max Deck Load / Point Load:	400t / 15/m ² (Subject to Free Leg Length)
Max Free Leg Length:	31.50m
Max Crane Self Weight:	300 tonne (Subject to Free Leg Length)

Method Statement–A494 Bridge Pier Installation

R7M-522027-MST-004
Rev C0



The Haven Seafield (or equivalent), also as known as a Flat Top Spud Leg Barge, is 30.00m in length, 11.20m wide and has a hull depth of 2.50m. The barge is equipped with 2 number of spud legs 0.61m diameter 25m long legs.

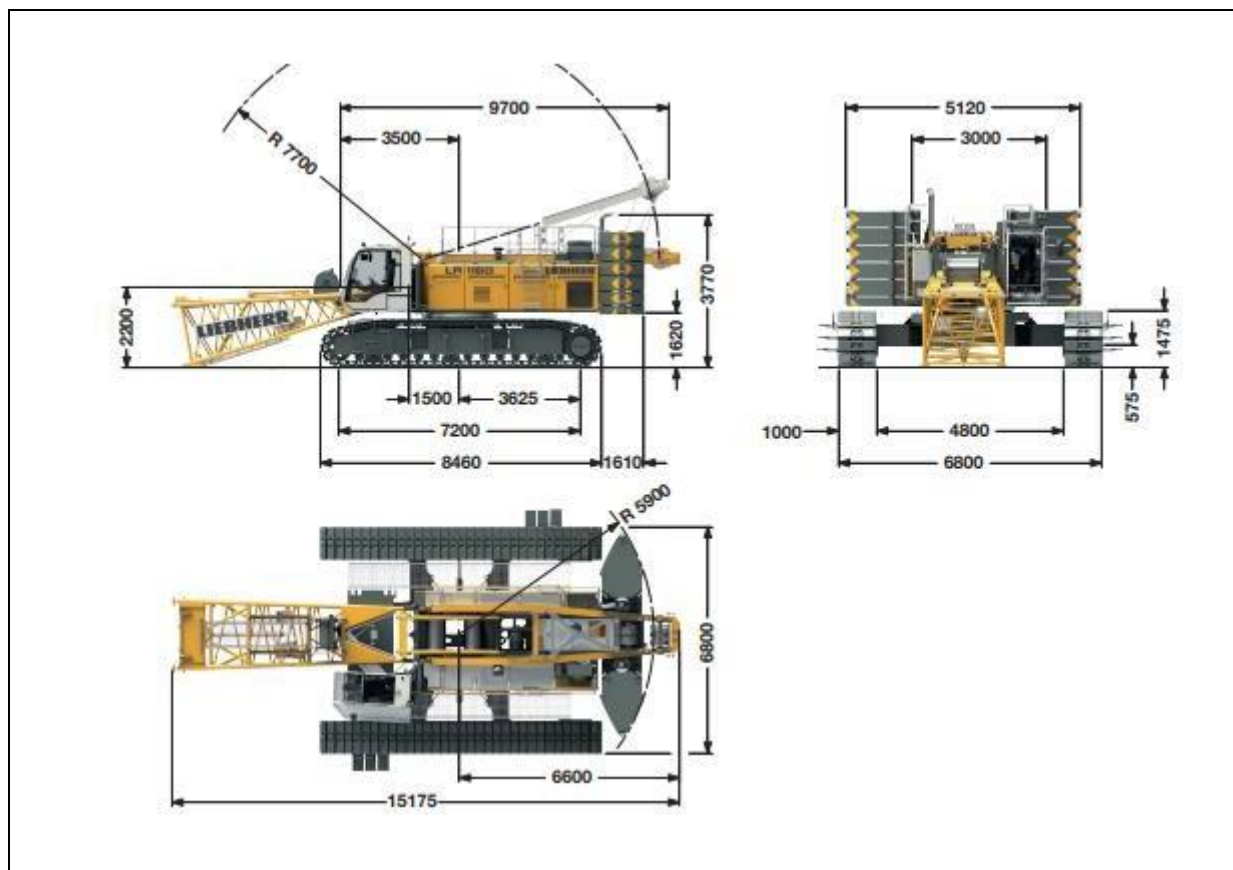
Additional information of the barge can be found in the table below.



Classification:	Bureau Veritas Pontoon Unrestricted
Length:	30.00m
Breadth:	11.20m
Depth:	2.50m
Draft at Zero Load:	0.54m
Draft at Maximum Load:	1.96m
Deck Area:	336m ²
Max Spud Leg Length:	25.0m
Spud Leg Diameter:	0.61m
Gross Tonnage:	208GT
Lightship Weight:	139.78 tonnes
Allowable Deck Load:	500t
Allowable Deck Point Load:	6.0 t/m ²

3.2 Crawler Crane Information

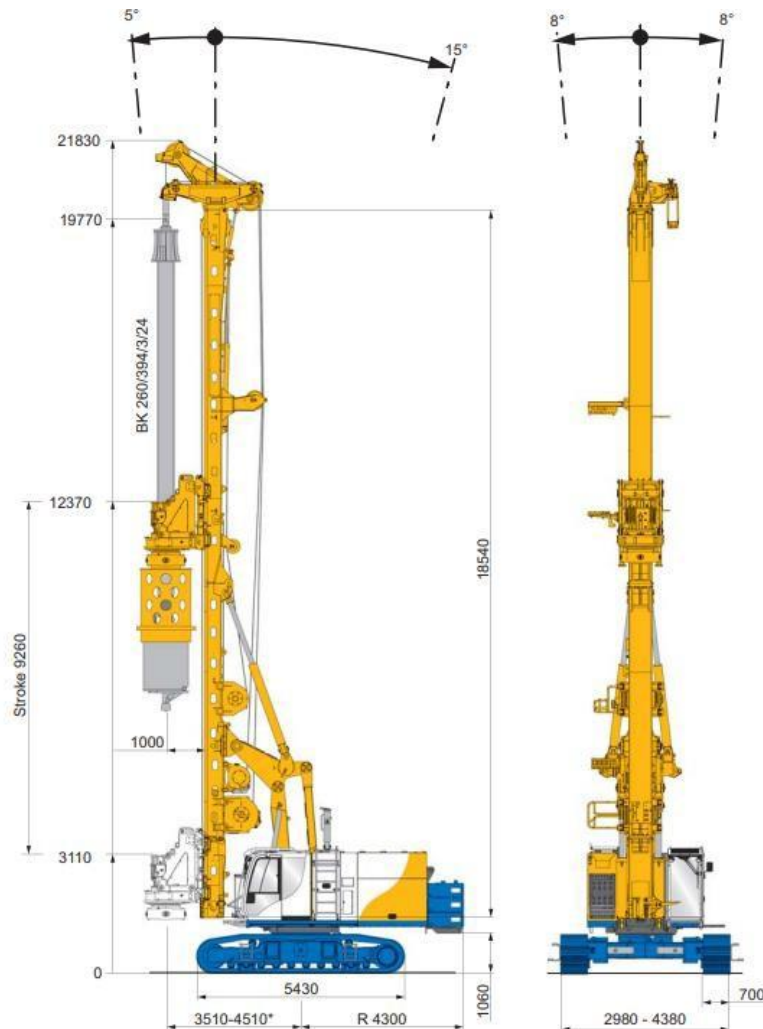
The crane that will either be tracked onto the Jack-Up Barge at the A494 site for the initial piling works will be a Liebherr LR1160 with the specified boom length. The crane will be fully rigged either on landside prior to being tracked onto the barge or will be lifted and assembled on the marine vessels.



Operating Weight:	160t
Main Boom max Length:	58.1m
Max High Reach:	60m
Basic Counterweight:	55t
Carbody Counterweight:	18.8t
Basic Machine Weight:	33.3t
Main Machine Frame Width:	3,000mm
Engine Fuel Tank Capacity:	790l
Drive Speed:	0 – 1.6 km/h
Auxiliary Jib Maximum Capacity:	24t
Crawler Tracks Length:	8.46m

3.3 Drill Rig Information

A Bachy Soletanche Bauer: BG28 Drill Rig or alike will be located on the deck of the Haven Seaseven and will be assisting in the installing of all the piles into the seabed. Again, the rig will either be tracked onto the deck of the vessel or lifted and assembled on the vessels deck.



Track Length:	6,460mm
Operating Weight	122,000kg
Travel Speed:	0 – 1.3 km/h
Fuel Capacity:	730l
Hydraulic Oil Capacity:	1,000l
Main Winch Line Speed:	94m/min
Main Winch Rope Diameter:	32mm
Bored Pile Maximum Depth:	89.5m
Bored Pile Maximum Diameter under Mast:	4,200mm

Method Statement–A494 Bridge Pier Installation

R7M-522027-MST-004
Rev C0



4 Location of Operation

Details of Operation Location			
Location:	A494 Bridge, Queensferry		
	R7M-522027		
Aerial Overview:			
Sufficient Access to Site:	☒ Yes / ☐ No	Details	Access to site is proposed as follows: Seaseven transfer from Birkenhead to A494 site.
Sufficient Rigging Space:	☒ Yes / ☐ No	Details	Project equipment transferred onsite.
Safe Access/Egress:	☒ Yes / ☐ No	Details	Site compound will need to be created on the N side of river to enable rigging of the rig and crane and mobilisation of the Seaseven. Secondly, a causeway or platform will need to be built to transfer kit onto the vessels deck at the compound site.
Bridging Unit Used:	UC Steel crane mats will be required to transfer the equipment from the land to the vessel. Timber bearers will be used as deck protection and ramping.		
Span between Supports:	<1000mm		
Overhead Obstructions:	☒ Yes / ☐ No	Details	Overhead obstructions include low lying bridges for marine transit and
Slew Path Obstructions:	☒ Yes / ☐ No	Details	Existing bridges, deck equipment and jack up legs will limit crane slewing.
Underground Services & Voids:	☐ Yes / ☐ No	Details	Unknown, services surveys will be required during preconstruction stages.
Additional Comments:	UXO surveys of the area will be required for piling and vessel operations. All plant operatives working on site will be required to hold valid industry standard training certificates for the plant/equipment they are required to operate on site. R7M will inspect all operatives' original certification prior to commencement of operations. Copies will be made available for inspection. Spudcans will be required to be installed at the project site.		
Diagram/Sketch of Area Included:	☒ Yes / ☐ No	Details	R7M-522027-SKH-001 & SKH-002

5 Methodology.

This methodology is to be used on conjunction with the Bridge Pier installation Storyboard R7M-522027-SKH-002.

Before the commencement of any barge movement or pile installation a UXO survey is required within the operations area to identify any anomalies which may identify as an UXO.

In line with the following methodology outline vessel analysis has been undertaken to understand the structural and geotechnical responses to the construction operations on site. Please refer to the vessel site specific assessment to understand vessel deck arrangements, floating stability, leg stress analysis and leg foundation assessments (LPA).

Operation Procedure / Method Statement – Piling Operations		
Step	Description of Task	✓
	EVERY PERSON ON SITE HAS A DUTY TO ENSURE THAT THEY DO NOT PUT THEMSELVES OR OTHERS AT RISK.	
	All persons involved in the operation are to have a prestart briefing where the operation and method statement will be explained along with all person's role within the operation. Having accepted the procedure and clarified any queries, all parties will sign up to this general methodology for the operation.	
	All appropriate PPE including Hi-Vis, safety boots, hard hats and life jackets (when working near the quay edge or on the barge) are to be worn at all times during the operation.	
	Prior to piling operations, the Seaseven will be loaded on site with plant on deck including Cranage, Drill Rigs, Welfare Container, Piling Hammers, muck skips, mini digger, temporary works and misc kit from the onsite causeway.	
1.	When all relevant parties are satisfied the project can continue, the Jack-Up Barge will be positioned on the projects site utilising the appropriate tug to assist with positioning from the mobilisation location.	
	NOTE: Throughout the project, Barge movement and pile pitching can only commence if the Barge Master is satisfied with the circumstances and conditions to proceed. Furthermore, this can only be done within a reasonable timespan to consider the hightides and slack water to ensure sufficient water depth is available for site movements.	
2.	When the Jack-Up Barge is mobilised with all kit, the tug will position the Barge at pile location 1 working from the vessels bow. This position enables sufficient clearance to the existing bridge to ensure a collision does not occur. NOTE: Jack-Up Barge will require precise positioning in accordance with the setting out locations provided. Contactors Engineer will set out the barge location accordingly and communicate with the Barge Master and Tug Operator via radio.	
	When commencing works on piles EP01 all personnel involved must consider the location the existing infrastructure surrounding the project site such as the A494 bridge.	
3.	When the Jack-Up Barge is positioned at pile location EP01 the barge will be secured and preloaded accordingly and wait for the arrival of the supply vessel Haven Seafield. Seafield will be loaded simultaneously with piles and all other materials and equipment for pile installation.	
4.	The tug will retrieve the Haven Seafield and bring the supply vessel to site. Another assisting tugboat may add further assistance if required depending on the circumstances and conditions on the day of operations.	

Method Statement–A494 Bridge Pier Installation

R7M-522027-MST-004
Rev C0



5.	When the Haven Seafield has been positioned alongside the Jack-Up Barge, the crane will drop the spud legs into the seabed to secure its position.	
6.	When both barges are positioned in the correct location and all relevant parties are satisfied to continue. The crane on the Jack-Up deck can commence lifting operations of pile EP01 in accordance with the Lift Plan.	
7.	The crane on deck of the Jack-Up Barge will lift the casing from the Haven Seafield, slew round and position pile EP01 into the port forward pile gate. When the pile is positioned correctly into the gate the crane will disconnect from the pile ready for the vibratory hammer lift.	
	When all relevant parties are satisfied to continue after the pile handling is completed and under the discretion of the Barge and Tug Master. Haven Seafield Flat-Top Barge will have its spud legs raised by the crane and repositioned to a suitable area in the river. Should there be a problem with releasing the crane from its pile handling duties, the Tug will need to lift the spud legs of the Haven Seafield using its deck mounted crane.	
8.	The crane will pitch the vibratory hammer and connect to top of pile. A predefined toe level of the casing will be used to drive the casing through the sand lenses down into the clays.	
9.	Crane will relocate to a neutral location on the Jack-Up Barge to allow drilling operations to commence. Crane's recommended neutral position will be located on the opposite side to the Jack-Up Barge's deck.	
10.	The hydraulic rotary piling rig will then be positioned over the casing and the pile will be drilled to the required depth using standard augers and buckets. The verticality of the Kelly bar will be continuous checked by electronic instruments within the rig.	
11.	As the rig is drilling through the casing drill fluid, (either bentonite or polymer) which will be pumped from landside via a batching plant. Pipes will be supported on a pontoon system a lead to the rig on the Jack Up vessel.	
12.	Drilling tools will be emptied / spun off into collection skips on the platform, with care taken to prevent spillage into the adjacent waters. The spoil skips will be collected and disposed of by the contractor onto a material barge. Upon reaching the required depth, the pile base will be cleared of any loose material with a cleaning bucket and the depth will be checked and agreed.	
13.	Using the service crane the reinforcement cage will be lifted and placed in the bore, splicing as appropriate. The splicing will be carried out over the bore with the bottom cage secured with a trapping bar. The cage will be hung using two number single leg chains at the correct height.	
14.	The pile will be concreted from a mobile pump on landside via a pipe system supported by pontoons situated in the water. The concrete will be pumped to level allowing suitable over pour (1m above cut-off-level) ensuring sound concrete at cut off level. The hanging chain will be removed before the concrete reaches the cut-off level.	
15.	On completion of piles EP01 and EP02 the Seaseven will be relocated at various locations further locations to complete all 12no piles working off the vessel Starboard face on the East Pier with methodology being repeated. Note, at each location the Seaseven will preloaded to the Barge Master's satisfaction, the Haven Seafield will be positioned adjacent for delivery of materials.	

Method Statement–A494 Bridge Pier Installation

R7M-522027-MST-004

Rev C0



7.	On completion of the East Pier the vessel will manoeuvre with a suitable tug to the west pier, spinning the vessel 180 degrees to work off the vessels Port face. Stages 6-16 will be repeated to complete the West Pier piling. <u>NOTE: PILING SEQUENCE SUBJECT TO CHANGE BASED ON PROGRAM AND SITE REQUIREMENTS.</u>	
----	--	--

Operation Procedure / Method Statement – Pier Concrete Capping Beams

	Precast concrete capping beams will be placed concurrently with the piling operations above. While the barge is on location drilling, individual precast units (of no more than 10T each) will be located and placed on previously completed piles, saving programme time. See programme with submission.	
1.	Walkways and access to the East Pier and West Pier will be by a gantry walkway setup by the main contractor along the edge outside of the existing A494 bridge. This will enable the operatives working on the piers to access via the gantrys.	
2.	Walkways and working platforms will also be attached to the external face of the precast units after being lifted into position by predetermined cast fixing sockets. This will enable operatives to work freely on the piers without marine platform assistance.	
3.	Prefabricated reinforcing cages can be transferred by R7M transfer barge to the pier locations and lifted into position straight after the placement of the precast concrete sections.	
4.	Straight reinforcement tie bars will be placed by the steel fixers insitu to tie piers together. Crane can assist while on location to lift bars onto piers.	
5.	Concrete to be pumped from the shore (as per piling). Concrete works to be done by others.	

Communications

A briefing/ toolbox talk will be performed before the operation commences. All members will sign up to this document to confirm they understand the methodology and associated risks.

Communication Method(s)

☒ Radio

☒ Hand Signals

☒ Verbal

☐ Other:

Communications Plan

The main method of communication will be predominantly via radio

6 Required Personal Protective Equipment

The operation specific risk assessments have identified that the following items of PPE must be worn during the duration of activities:

PPE Requirements				
 ☒ Hard Hat	 ☒ Eye	 ☒ Safety Footwear	 ☒ Gloves	 ☐ Coveralls
Safety helmet to EN397	Light eye protection to EN166/2001 1F as a minimum	Steel/composite toe/slip resistance/protective insole (minimum conformity to EN345 & S3) (SRC recommended) (SB + P – NOT allowed)	Suitable gloves for the work scope	Coveralls to suit activity taking place – i.e. welding, maintenance, painting.
 ☐ Ear	 ☒ Lifejacket	 ☒ Hi Vis	 ☐ Dust Mask	 ☒ Safety Harness
To be worn when noise levels are at (and above) 85 dB	Min 150N Lifejackets to be worn within 2m of the quay edge, during transfer in the personnel transfer basket and whilst on the deck of the CTV	Hi-Vis clothing to be worn at all times for all activities	To be worn where there is the risk of inhaling dangerous substances which can cause coughing, wheezing, shortness of breath or breathing difficulties.	To be worn for all access/egress by ladder and working at height activity
 ☐ Transfer Suit	 ☐ Personal Locator Beacon	 ☐ Other	☐	
Transfer suit to be worn during transfer and whilst on deck of the CTV	Personal locator beacons to be worn within 3m of the quay edge, during transfer and whilst on the deck of the CTV			
If other, please specify:				

For more information on the Red7Marines PPE policies and standards, please refer to R7M-HSMMAN-002, Chapter 18 – Personal Protective Equipment in the Health & Safety Procedures Manual.

For more information for Red7Marine policy on Lifejackets please refer to R7M-HSM-DOC-011 – Lifejacket Policy.

7 Emergency Procedures

In the event of any incident or accident (including near miss, first aid and environmental) occurring on the barge whilst undertaking work associated with the operations, the contractors Reporting, and Investigation of Accidents & Incidents Procedures shall be followed. All reports will be completed the using an Incident Report form.

In the event of a major incident the emergency response procedure should be referred to and followed.

7.1 First Aid

The primary first aid station will be pointed out before any works commence. All accidents / injuries are to be reported to site management immediately so the casualty can be treated if required and the event can be recorded in accordance with Red7Marine company policies.

7.1.1 On Site First Aider

R7M will ensure that a member of the relevant team will be trained to First Aid at Work standards and appointed as a company first aider. The names of the trained first aid personnel are to be communicated to all persons during the briefing.

7.1.2 General First Aid Procedure

If you sustain an injury, you must:

Item	Task
1.	Stop work immediately and contact the appointed first aider on site.
2.	The first aider will determine extent of the injury and administer appropriate first aid.
3.	If deemed necessary by the first aider transfer casualty to the nearest Hospital A&E Department to seek medical aid.
4.	Complete an R7M incident report form in addition to the legislative accident book.

Method Statement–A494 Bridge Pier Installation

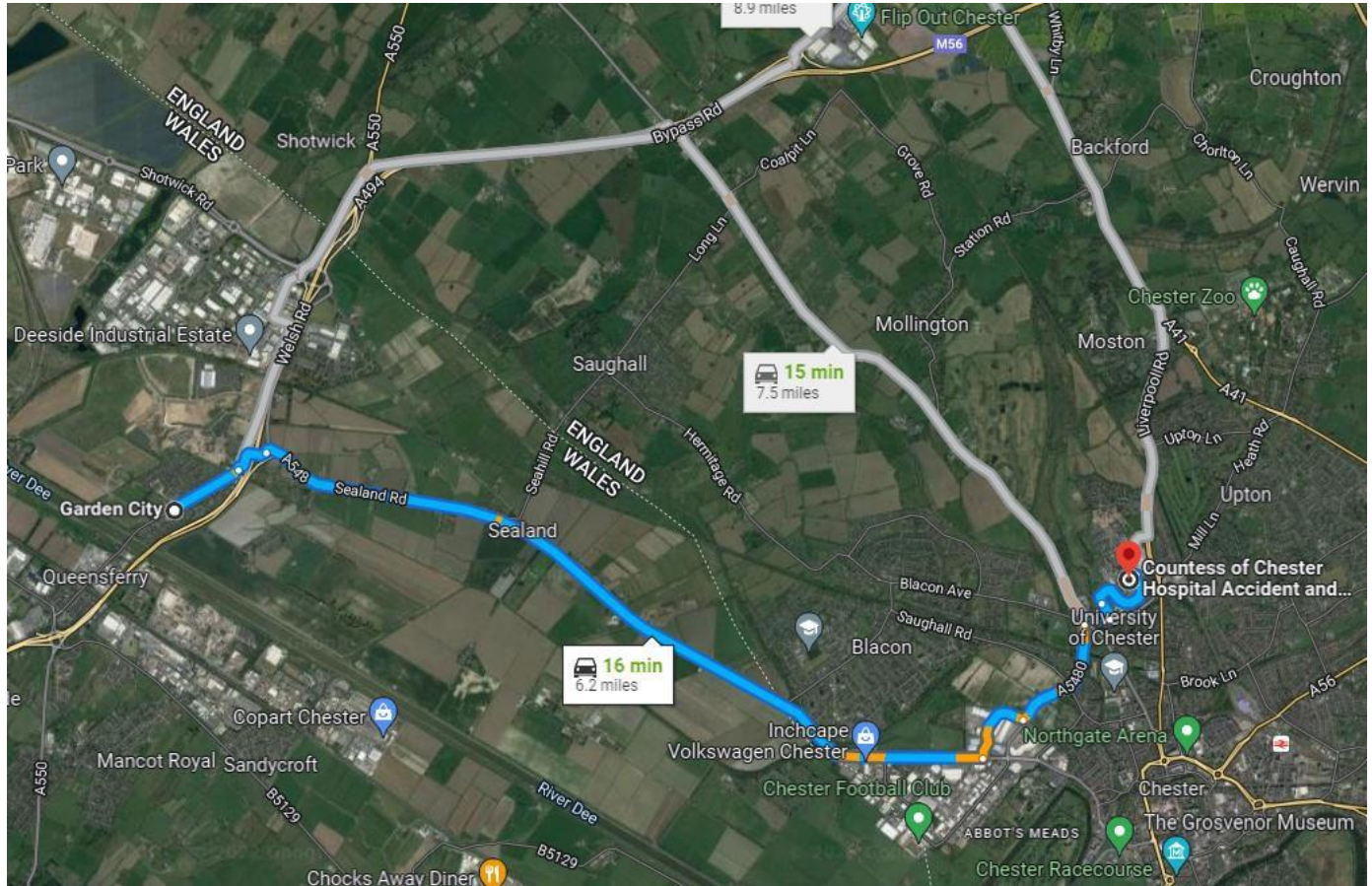
R7M-522027-MST-004

Rev C0



7.2 Hospital Routes

Countess of Chester Hospital Accident and Emergency Department,
Liverpool Rd,
Chester,
CH2 1UL
Tel: 01473 712233



7.3 Man Over-Board Procedure

On seeing a person fall overboard, or a person in the water:

Item	Task
1.	Shout "MAN OVERBOARD" to alert fellow site personnel.
2.	Point at the person in the water and never take your eyes off them.
3.	Throw a flotation device to the person in the water immediately.
	<i>To gain maximum benefit, throw the device underarm. If possible, throw 3, 4 or 5 flotation devices such as life jackets, fenders, Perri-buoys etc. towards the person in the water which will form a trail back towards them.</i>
4.	Sound the general alarm and contact the site manager.
5.	A spotter positioned in a suitable location shall point at the man in the water, never taking their eyes off them.
6.	The marine personnel will assess the situation and implement the recovery plan.
	<i>ONLY as a last resort, send a rescuer into the water. Ensure the rescuer is wearing an appropriate lifejacket and is secured to the boat by a fixed line at all times.</i>
7.	Pull the casualty to the side of the boat / barge and prepare for extraction from the water.
8.	The following should be adhered to when lifting the casualty on-board the vessel by hand.
9.	Ensure the casualty's head remains out of the water.
10.	Raise the casualty's arms onto the side of the vessel.
11.	Place the casualty's hands on top of one another.
12.	Gain assistance from fellow employees and stand either side of the casualty.
13.	Place one of your hands beneath the casualty's upper arm and the other on the casualty's forehead.
14.	Ask your fellow employees to place one of their hands on the casualty's other upper arm and the other on the casualty's forehead.
15.	Put a slight bend in your knees, keep your back straight and gently raise the casualty out of the water.
16.	Lower the casualty onto the deck.
17.	A qualified first aider will assess the casualty for signs of internal injuries such as broken bones, hypothermia, and shock.
18.	The recovered man overboard will be transported to hospital for treatment, if required.

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



7.4 Fire Procedure

On discovering a fire, the following procedure will be followed:

Item	Task
1.	Raise the alarm immediately.
2.	If you have been trained and feel that it is safe to do so attempt to fight the fire using the correct fire extinguishing media.
3.	If this fails, ensure all personnel evacuate the barge/ areas immediately and proceed to the designated muster point.
4.	Contact the fire brigade via mobile telephone (Dial 999 or 112) and request assistance.
5.	Following a fire, the affected areas will be inspected for damage by R7M and fire marshal. Signs of structural deformations are to be reported to Red7Marine management immediately and the barge quarantined in order to facilitate a full investigation.
6.	The barge will remain inoperable until the barge master has received the all clear from Red7marine management following the results of the detailed investigation.

7.5 Spill Procedure

In the event of a spillage, the following procedure shall be followed (The location of spill kits is to be communicated to all persons during the start of shift briefing):

Item	Task
	<i>Spillages of fuel or oil into watercourses or the sea or on land may constitute an offence under Environmental legislation, which attracts large fines. Our Company has to make suitable contingency arrangements in the event of a spillage.</i>
1.	All site personnel – decide whether the spill is within their control or outside of their immediate control.
2.	If spill is within control, contain the flow and prevent it from reaching a watercourse or entering a drain. Cover spill with absorbent material or sand. Proceed with clean up (ensuring the correct PPE is worn), and then notify foreman/agent.
3.	Dispose of clean up materials as hazardous waste.
4.	If outside of immediate control, then; raise alarm – advise foreman/agent, and call the environment agency on 0800 80 70 60.
5.	Assist in clean-up process as directed by emergency services.
6.	In the event of major spills, foreman/agent will contact specialist pollution control experts.
7.	Foreman/agent - notify contracts manager and ensure an incident report form is completed.
	<i>Whenever possible plant will be using biodegradable hydraulic oil.</i>

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



8 Signature of Compliance

The following persons have read and been briefed on this Method Statement. By signing below, they have agreed that the sequence of operations and methodology to be employed in carrying out the works have been clearly explained and confirm that they will abide by these procedures, understanding all of the information enclosed within this document. They confirm that they have also had the hazards, and how these are to be managed, explained to them.

"I, the undersigned, understand the above & feel able to carry out my duties in a safe manner."

Name	Position	Signature of Compliance	Date

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Appendix A – Risk Assessment

No.	Description	Revision
1	Working On / Near Water	
2	Tracking of Plant onto Barge	
3	Lifting Operations	
4	Piling Rig Operations	
5	Barge Positioning Operations	

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Working On / Near Water																
SEVERITY CLASSIFICATION						PROBABILITY					PROBABILITY CLASSIFICATION			RISK CLASSIFICATION		
Value	Severity	Injury	Health		Damage	Pollution	A	B	C	D	E			LOW RISK	Operations may proceed with care	
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects		No Cost	<1ltr	L	L	L	L	M	A	Highly Improbable			A possibility but extremely remote chance of occurrence
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)		<£5,000	1-10Ltr	L	L	L	M	M	B	Improbable	Unlikely to occur (very infrequent) during the operation	MEDIUM RISK	Operations may proceed with extreme caution
3	Significant	Possible severe injury (medical aid case) leading to max 1 Day LTI	Moderate adverse health effects such as persistent dermatitis		£5,000-25000	10-100Ltr	L	L	M	M	H	C	Possible	May occur (infrequent) during the operation		
4	Severe	Major injury leading to 3 day+ LTI	Harmful health effects such as a dangerous infection		£25,000-500,000	100Ltr-100m³	L	M	M	H	H	D	Probable	Is likely to occur often during regular operations	HIGH RISK	Operation must NOT Proceed
5	Catastrophic	Fatality or multiple major injuries	Terminal or permanent health damage		>£500,000	>100m³	M	M	H	H	H	E	Frequent	Is likely (common occurrence) to occur once or more during every operation		
Potential Hazards	Hazard Effects	Initial Risk			Control and Mitigating Factors							Residual Risk			Responsibility	Reference Document(s)
		S	P	R								S	P	R		
Entry into water Contact with water Contaminated water Slips, trips and falls Biological hazards	Hypothermia Drowning Illness Personal injury Fatality Contact with rat urine – Weils Disease	5	C	H	Suitable means of access / egress onto the barge Ensure there are reasonable practicable means of signage or warnings in place for other personnel Operatives are to work in pairs, so one can raise the alarm if the other was to fall in All persons working on, above or near water are to wear a minimum of a 150N lifejacket at all times with personal locator beacon (PLB) if required Lifejackets to be regularly inspected and tested Sufficient lifebuoys and rescue lines to be available Rescue facilities to be available e.g. a safety boat to be present at all times during operations near / on water Access routes to the place of work and alongside the water should be kept clear from obstructions and slip hazards at all times							4	B	M	Barge Master All Personnel	

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



		5	C	H	Suitable lighting should be provided for the area of works, particularly adjacent to the water Ensure recovery procedure is in place Man over board (MOB) vessel in place and competent crew on board to operate the vessel Relevant personal protective equipment to be carried out to ensure suitability of equipment provided If working during hours of darkness or when water temperature is less than 10 degrees an immersion suit is to be worn	4	B	M		
--	--	---	---	---	--	---	---	---	--	--

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Tracking of Plant onto Barge															
SEVERITY CLASSIFICATION						PROBABILITY					PROBABILITY CLASSIFICATION			RISK CLASSIFICATION	
Value	Severity	Injury	Health	Damage	Pollution	A	B	C	D	E				LOW RISK	Operations may proceed with care
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects	No Cost	<1Ltr	L	L	L	L	M	A	Highly Improbable	A possibility but extremely remote chance of occurrence		
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)	<£5,000	1-10Ltr	L	L	L	M	M	B	Improbable	Unlikely to occur (very infrequent) during the operation	MEDIUM RISK	Operations may proceed with extreme caution
3	Significant	Possible severe injury (medical aid case) leading to max 1 Day LTI	Moderate adverse health effects such as persistent dermatitis	£5,000-25000	10-100Ltr	L	L	M	M	H	C	Possible	May occur (infrequent) during the operation		
4	Severe	Major injury leading to 3 day+ LTI	Harmful health effects such as a dangerous infection	£25,000-500,000	100Ltr-100m³	L	M	M	H	H	D	Probable	Is likely to occur often during regular operations	HIGH RISK	Operation must <u>NOT</u> Proceed
5	Catastrophic	Fatality or multiple major injuries	Terminal or permanent health damage	>£500,000	>100m³	M	M	H	H	H	E	Frequent	Is likely (common occurrence) to occur once or more during every operation		
Potential Hazards	Hazard Effects	Initial Risk			Control and Mitigating Factors	Residual Risk			Responsibility	Reference Document(s)					
		S	P	R		S	P	R							
Inexperienced operator / personnel Unlicensed operator Uncertified rig Use of mobile telephone Barge movement / foundation failure Track mat failure Unexpected weather changes	Collision with jack up structure Injury to driver and other Personnel Damage to rig / crane Loss of rig / crane Loss of control of rig/ crane Damage to plant, equipment or materials				Check and inspect surrounding work areas to ensure there are no conflicting work activities Competent, certified and authorised operator and team Ensure there is adequate personal awareness for all personnel Suitable lighting should be provided for the area of works, particularly adjacent to the water Ensure there are rescue facilities available e.g. safety boat, life rings etc Ensure there are sufficient lifebuoys and rescue lines available All personnel should wear a life jacket. All persons working on, above or near water should wear buoyancy aids Operatives are to work in pairs, so one can raise the alarm if edge protection is not present Never leave equipment or plant near the edge of the deck				Plant Operator Bargemaster						

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Adverse weather / sea / environment conditions Poor visibility	Catastrophic damage Fatality Vessel / structure damage Equipment and plant falling into water	5	C	H	Ensure adequate housekeeping is implemented thoroughly on a daily basis Personal protective equipment (PPE) assessments should be carried out to ensure suitability for the type of works Handholds and guardrails should be provided where appropriate Access routes should be kept clear from obstruction and slip hazards at all times Ensure all relevant parties have been informed this high-risk operation is taking place and if reasonably practicable erect warning signs near the water edge Mobile telephones not to be used whilst operating Barge to be sufficiently preloaded to strengthen foundations before proceeding with tracking operations Rig/ Crane banked on and off by competent operatives. Provide adequate number of banksmen Pre-start briefing to be conducted to ensure all personnel are aware of their responsibilities Slew path always checked and operatives maintain 600mm clearance Minimal unsupported void between quay and barge – 1000mm Suitable spans of track mat remain on supports i.e. quay edge and deck Controlled and steady tracking speeds employed Ensure there is a constant good channel of communication, cooperation, coordination and control Jack Up Legs to be monitored at all times and corrected when required Barge Master to be present at all times during operation ensuring constant supervision Deck to be level with quay / docks / land as reasonably practicable when tracking on and off rig / crane Ensure everyone has received adequate Information, Instruction and Training and all relevant personnel has comprehensive knowledge of marine rules and regulations	5	B	M		
---	--	---	---	---	---	---	---	---	--	--

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Lifting Operation																
SEVERITY CLASSIFICATION						PROBABILITY					PROBABILITY CLASSIFICATION			RISK CLASSIFICATION		
Value	Severity	Injury	Health	Damage	Pollution	A	B	C	D	E				LOW RISK	Operations may proceed with care	
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects	No Cost	<1Ltr	L	L	L	L	M	A	Highly Improbable	A possibility but extremely remote chance of occurrence			
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)	<£5,000	1-10Ltr	L	L	L	M	M	B	Improbable	Unlikely to occur (very infrequent) during the operation		MEDIUM RISK	Operations may proceed with extreme caution
3	Significant	Possible severe injury (medical aid case) leading to max 1 Day LTI	Moderate adverse health effects such as persistent dermatitis	£5,000-25000	10-100Ltr	L	L	M	M	H	C	Possible	May occur (infrequent) during the operation			
4	Severe	Major injury leading to 3 day+ LTI	Harmful health effects such as a dangerous infection	£25,000-500,000	100Ltr-100m³	L	M	M	H	H	D	Probable	Is likely to occur often during regular operations		HIGH RISK	Operation must NOT Proceed
5	Catastrophic	Fatality or multiple major injuries	Terminal or permanent health damage	>£500,000	>100m³	M	M	H	H	H	E	Frequent	Is likely (common occurrence) to occur once or more during every operation			
Potential Hazards	Hazard Effects	Initial Risk			Control and Mitigating Factors							Residual Risk			Responsibility	Reference Document(s)
		S	P	R								S	P	R		
Unsuitable or inadequate base for lifting equipment Overloading of lifting appliance Incorrect use or positioning of lifting equipment Catastrophic failure or overturning of the lifting equipment	Overturning of the lifting equipment Failure of load bearing parts of lifting equipment Interference damage Serious consequences to people and equipment Crushing injuries	5	D	H	All lifting operations are to be properly planned in accordance with LOLER 98 lifting plan that has been produced by a qualified AP. Crane is to be positioned as per lift plan ensuring that the area is levelled, consolidated, inspected for underground ducts, services and a safe distance from excavations etc. (i.e. the crane is set up on a suitable stable base) Ensure all lifting appliances are clearly marked with their maximum SWL Ensure the weight of the load is known Do not operate the crane outside of its configuration specific crane duties. Ensure a competent person directs the lifting operations Ensure operatives remain clear of the load at all times Competent lifting crew assigned e.g. Supervisor, signaller, and plant operator							5	B	M	Appointed Person Lift Supervisor Slinger/ Signaller All Personnel	

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Adverse weather conditions	Unstable equipment and load				Communications are to be maintained between signaller and driver				
Collision with structures / Buildings etc	Personnel / Member of public struck by load / Falling debris				Tool box talks will be used to reinforce the lifting arrangements outlined in the lifting plan.				
Operator error					The slinger or driver to check the lifting accessories before use to ensure they are not damaged or worn				
Rigging failure					All plant and accessories are inspected prior to use and relevant test certificates are up to date				
Crane wire / Winch failure	Injury to personnel / Member of public				Check weather forecasts before any lifting operations				
Lack of communication	Equipment/Machinery damage				Lifting operations will not be conducted in high winds as detailed in the lift plan.				
Persons in lifting area	Loss of load	5	D	H	All equipment is to have passed its daily checks before use.	5	B	M	
Other plant/vehicles	Vehicle collision with crane				An operative is to maintain a look out for other vehicles or plant that may enter into the lifting area unknowingly. If this occurs the load is to be safe and the vehicle is to be removed from the area.				
					No load to be left suspended				
					No unauthorised people allowed within the lift area, no one working below the lift.				
					No loads are to be lifted over person or over containers/vehicles that a person is in				
					Use of Appropriate PPE (Gloves Etc.)				

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Piling Rig Operations																		
SEVERITY CLASSIFICATION						PROBABILITY					PROBABILITY CLASSIFICATION			RISK CLASSIFICATION				
Value	Severity	Injury	Health		Damage	Pollution	A	B	C	D	E			LOW RISK	Operations may proceed with care			
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects		No Cost	<1Ltr	L	L	L	L	M	A	Highly Improbable			A possibility but extremely remote chance of occurrence		
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)		<£5,000	1-10Ltr	L	L	L	M	M	B	Improbable	Unlikely to occur (very infrequent) during the operation	MEDIUM RISK	Operations may proceed with extreme caution		
3	Significant	Possible severe injury (medical aid case) leading to max 1 Day LTI	Moderate adverse health effects such as persistent dermatitis		£5,000-25000	10-100Ltr	L	L	M	M	H	C	Possible	May occur (infrequent) during the operation				
4	Severe	Major injury leading to 3 day+ LTI	Harmful health effects such as a dangerous infection		£25,000-500,000	100Ltr-100m³	L	M	M	H	H	D	Probable	Is likely to occur often during regular operations	HIGH RISK	Operation must NOT Proceed		
5	Catastrophic	Fatality or multiple major injuries	Terminal or permanent health damage		>£500,000	>100m³	M	M	H	H	H	E	Frequent	Is likely (common occurrence) to occur once or more during every operation				
Potential Hazards		Hazard Effects		Initial Risk			Control and Mitigating Factors							Residual Risk			Responsibility	Reference Document(s)
				S	P	R								S	P	R		
Underground services Noise Vibration Lifting operations Unstable ground UXO Poor planning Adverse weather conditions Unstable platform		Ear impairment Noise nuisance Structural damage Loss of equipment Overturning of piling rig Plant damage Serious injury Damages to services Fire / explosion		5	C	H	Ensure all personnel are wearing the correct PPE e.g. hard hats, ear defenders, gloves etc Vibration levels to be monitored in sensitive locations where vibration from machinery is a potential problem Piling rig is only permitted to track to the edge of the barge once pre-loading operations have been conducted and Barge Master gives the instruction for works to commence All lifting equipment is inspected prior to use and test certificates are up to date Any unwanted materials to be removed from the top gate of the piling rig to prevent possible falls Once the piling rig has been manoeuvred into position manually by the operative, the operative is to move to a safe distance away from the piling rig before the operation commences							5	B	M	Barge Master All Personnel Piling Rig Operator Site Supervisor	

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



	Crushing injuries									
	Fatality									

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



Barge Positioning Operations																			
SEVERITY CLASSIFICATION						PROBABILITY					PROBABILITY CLASSIFICATION			RISK CLASSIFICATION					
Value	Severity	Injury	Health	Damage	Pollution	A	B	C	D	E			LOW RISK	Operations may proceed with care					
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects	No Cost	<1Ltr	L	L	L	L	M	A	Highly Improbable			A possibility but extremely remote chance of occurrence				
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)	<£5,000	1-10Ltr	L	L	L	M	M	B	Improbable	Unlikely to occur (very infrequent) during the operation	MEDIUM RISK	Operations may proceed with extreme caution				
3	Significant	Possible severe injury (medical aid case) leading to max 1 Day LTI	Moderate adverse health effects such as persistent dermatitis	£5,000-25000	10-100Ltr	L	L	M	M	H	C	Possible	May occur (infrequent) during the operation						
4	Severe	Major injury leading to 3 day+ LTI	Harmful health effects such as a dangerous infection	£25,000-500,000	100Ltr-100m³	L	M	M	H	H	D	Probable	Is likely to occur often during regular operations	HIGH RISK	Operation must NOT Proceed				
5	Catastrophic	Fatality or multiple major injuries	Terminal or permanent health damage	>£500,000	>100m³	M	M	H	H	H	E	Frequent	Is likely (common occurrence) to occur once or more during every operation						
Potential Hazards		Hazard Effects		Initial Risk			Control and Mitigating Factors						Residual Risk			Responsibility		Reference Document(s)	
				S	P	R							S	P	R				
Tug loss of power Weather conditions Poor visibility Insufficient water Mis-communication Uneven seabed Exposed location Marine traffic Unavoidable		Inability to stand Jack Up safely, possibility of leg sliding or moving on seabed Wind and Sea loadings on jack up causing overturning Collisions between jack up and other craft Collision between Jack up and uncontrolled		5	D	H	Location move is weather restricted and to be conducted in sea state that does not exceed the vessels design limits for jacking on location Sufficient clearance is to be maintained between the jack up and adjacent structures or other vessels during positioning All personnel to be briefed on intended operations so everyone knows their role and where the barge is being positioned Sufficient water depth to be present for positioning operation to occur Barge Master / Project Team will check all available records for site conditions, wind strength, tides. Wave strength during the period of proposed works. They will also obtain local knowledge of the area Assess Jack up position with regards to other vessels movements i.e. near shipping channels, berths, fishing grounds etc.						5	B	M	Barge Master Vessel Master Personnel on Deck			

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]



collision	vessels / objects unable to steer or manoeuvre due to lack of power				The Barge Master will monitor the situation regarding other vessels. If there is a danger of collision then the Barge Master will instruct the crew to evacuate the Jack up				
Underground / underwater obstructions					Client will ensure that information is obtained from utility providers. In addition, during the visual survey any obvious underwater hazards will be noted and mapped				
Conflict with small craft	Jacking on underwater hazards such as cables, pipelines, moorings etc				Project management will ensure that SI information is assessed prior to positioning. Positioning will only occur during permitted operational weather conditions				
Loss of tow whilst positioning					Hand railing in place; ensure all personnel are wearing a lifejacket				
Unable to jack up clear of water due to soft overburden or depth of water	Jack up becoming unstable due to floatation of barge or possible swamping				Adequate search lighting to be made available to locate man over board MOB				
Person falling overboard while rig is moving	Drowning				Ropes to be inspected prior to positioning to ensure they are fit for purpose				
Loss of communication	Hypothermia				If loss of tow occurs, Barge Master will make the call to lower the legs in a suitable area in order to prevent the barge from drifting and possibly striking other vessels / structures in the vicinity				
Fault with navigation system	Damage to undetected cables				Visible markers installed prior to barge arrival for positioning requirements				
					All vessels' draft reviewed and tidal windows identified				

RISK ASSESSMENT & METHOD STATEMENT

R7M-522027-RAM-001

[Rev: A0]