

RED7MARINE



RAMS (RISK ASSESSMENT METHOD STATEMENT) MAINSTAY MARINE - MILFORD HAVEN R7M-524001-MST-001

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

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Mainstay Marine – Valero

R7M-524001-MST-001

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Revision History

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C1	13/11/2024	Amendments after internal review
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Table of Contents

1.0	Introduction	4
1.1	Contacts	4
2.0	Barge, Plant and Equipment Details.....	5
2.1	Barge Information (Indicative Barge Only)	5
2.2	Crawler Crane Information	6
3.0	Location of Operation	7
4.0	Project Methodology	8
4.1	Methodology 1 (Crane on Jack-Up Barge)	8
4.2	Methodology 2 (Crane on Flat-Top Barge)	16
5.0	Required Personal Protective Equipment.....	24
6.0	Emergency Procedures.....	25
6.1	First Aid	25
6.1.1	<i>On Site First Aider.....</i>	<i>25</i>
6.1.2	<i>General First Aid Procedure.....</i>	<i>25</i>
6.2	Hospital Route	26
6.2.1	<i>Hospital Address.....</i>	<i>26</i>
6.2.2	<i>Driving Directions to Nearest Hospital.....</i>	<i>26</i>
6.3	Man Over-Board Procedure	27
6.4	Fire Procedure	28
6.5	Spill Procedure.....	28
7.0	Signature of Compliance	29
Appendix A – Barge Specifications		30
Appendix B – Risk Assessment.....		31
	Working Near, On or Over Water.....	32
	Lifting Operations	34
	Barge Positioning.....	37
	Working at Height	40
	Manual Handling	43
	Piling Operations	45
	Grouting / Concreting Operations.....	47
Appendix C – Variations Record Sheet		50

1.0 Introduction

This document has been produced to detail the intended approach to be employed for the Fender Demolition and Replacement Works located at Terminal 2 North of Milford Haven. All lifting, demolition and installation operations will be conducted from the Jack-Up Barge.

It should be noted that this document has been produced as a guide and is subject to change pending the site conditions on the day of operation. The Project Manager, Barge Master and other relevant parties are to agree any variations from those outlined within this document.

1.1 Contacts

Name:	Mark Walton	Address:	Red7Marine Yard Cliff Road, Cliff Quay, Ipswich, Suffolk, IP3 0AX
Position:	Contracts Manager		
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Notes:	Responsible for all contract affairs involving R7M projects and the pre-planning stages of the contract leading up to the mobilisation		

Name:	Mark Smith	Address:	Red7Marine Yard Cliff Road, Cliff Quay, Ipswich, Suffolk, IP3 0AX
Position:	Head of QHSE and Fabrication		
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Notes:	For all QHSE incidents/concerns/observations		

Name:	Matt O’Sullivan	Address:	Red7Marine Yard Cliff Road, Cliff Quay, Ipswich, Suffolk, IP3 0AX
Position:	Operations Director		
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Email:	Matt.Osullivan@r7m.co.uk		
Notes:	Matt has overall responsibility for R7M operations		

Name:	Ross Edgar	Address:	Red7Marine Yard Cliff Road, Cliff Quay, Ipswich, Suffolk, IP3 0AX
Position:	Project Manager		
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Notes:	Ross will take overall management of R7M’s operations on site including arranging labour and supervising the physical works		

2.0 Barge, Plant and Equipment Details

2.1 Barge Information (Indicative Barge Only)

Note: The details of the Typhoon Barge is only an indicative representation of a Jack-Up Barge with the approximate size required, it may not specifically be the Typhoon barge used for this Project.

The Typhoon 3000 is 60m in length, 28m wide and has a hull depth of 4m. The barge is equipped with 4 x 2m diameter 52m long spud legs. These will be operated utilising the deck mounted hydraulic system.

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



Classification:	LRoS OU 100AN, Self-Elevating Unit; Unmanned Towage, Restricted Service Area 20Nm Offshore, OMC
Length Pontoon:	60m
Width Pontoon:	28m
Height Pontoon:	4m
Deck Load:	12t/m ²
Pay Load:	3000 tonnes
Spud Leg Length:	52m
Spud Leg Diameter:	2m
Jacking System Type:	Hydraulic Cylinders
Jacking System Locking:	By means of hydraulic activated locking blocks
Jacking System Speed:	Platform Up: 7.3m/hr Platform Down: 8.5m/hr Legs Down: 20.4m/hr
Controls System:	Touch Screen or Joystick
Controls Location:	In Control Cabin
Hydraulic Power Unit Type:	4 x Electrical Hydraulic Pump Sets
Hydraulic Capacity HPU:	4 x 150 kW
Maximum Pile Length Below Barge:	36.20m
Maximum Wave Height (operational condition):	2m (Crest to Trough)
Maximum Wave Height (survival condition):	7m (Crest to Trough)
Wave Period (operational):	3.69 sec. min / 4.74 sec. max
Wave Period (survival):	6.90 sec. min / 8.87 sec. max
Current Velocity:	1.8m/s
Towing Conditions Unloaded:	Unrestricted
Barge Location Charter Region:	UK and Northern European Waters

2.2 Crawler Crane Information

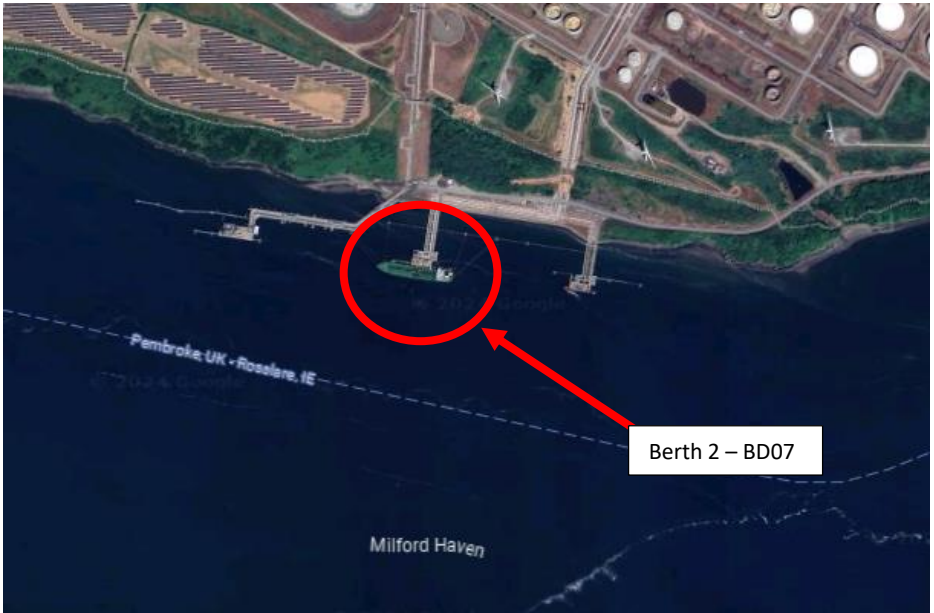
The Project Crawler Crane that will be utilised for all lifting operations located on the deck of the Jack-Up Barge will be a 400t Liebherr Crawler Crane.

The Crawler Crane will be fully rigged on the barge and will have a full standard counterweight.



Crawler Track Configuration:	10.36m x 8.70m
Superstructure with Carbody:	55.9t
Crawler Unit:	2 x 27.7t
Counterweight and Cranebody Counterweight:	155t + 43t
Main Boom Hoist Speed:	0 – 145m/min
Main Boom Hoist Rope Diameter:	25mm
Main Boom Hoist Single Line Pull:	130kN
Main Boom Hoist Length of Rope:	930m
Power Rating:	450kW (603 hp) at 1700 rpm
Engine Type:	Liebherr D 966 A7-05
Fuel Tank Capacity:	805L
Swing Speed:	0 – 1.8rpm continuously variable
Hydraulic Oil Tank Capacity:	680L
Max. Working Pressure:	350 bar
Drive Speed:	0 – 1.3km/h

3.0 Location of Operation

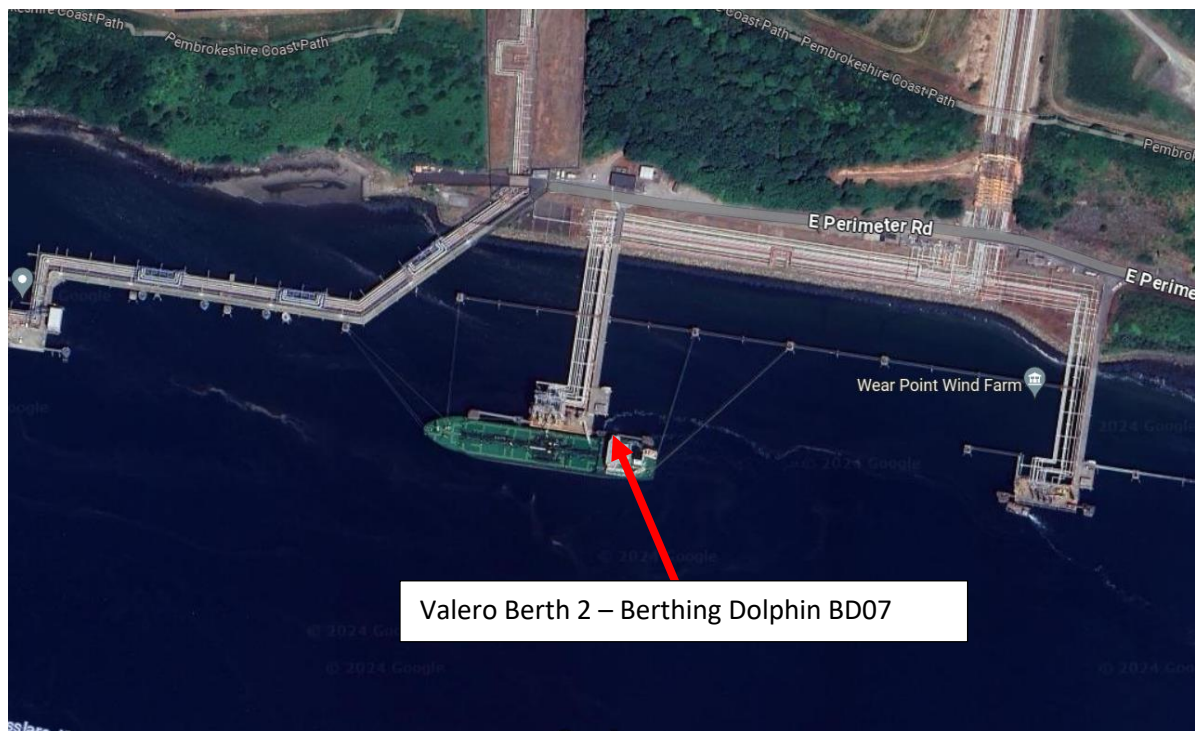
Details of Operation Location			
Location:	Valero Berth 2 – BD07. Milford Haven		
Red7Marine Project Number:	524001		
Aerial Overview:			
Sufficient Access to Site:	☒ Yes / ☐ No	Details	Personnel will be transferred by CTV to the Jack Up Barge or via land access through the Terminal.
Sufficient Rigging Space:	☒ Yes / ☐ No	Details	Crane to be rigged prior to tracking on to the barge
Safe Access/Egress:	☒ Yes / ☐ No	Details	Barge will be jacked up and access and egress will commence under suitable conditions.
Overhead Obstructions:	☐ Yes / ☒ No	Details	Gantry on jetty head is in close proximity.
Slew Path Obstructions:	☒ Yes / ☐ No	Details	Jack-Up Barge Legs Majority of deck items present are movable if required
Underground Services & Voids:	☐ Yes / ☒ No	Details	Area to be checked prior to operation by onsite team
Additional Comments:	Other relevant details and restriction are not to R7M's knowledge. All non-essential personnel must be excluded from operating area. 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. All personnel will receive the Valero Terminal site induction.		
Diagram/Sketch of Area Included:	☒ Yes / ☐ No	Details	

4.0 Project Methodology

4.1 Methodology 1 (Crane on Jack-Up Barge)

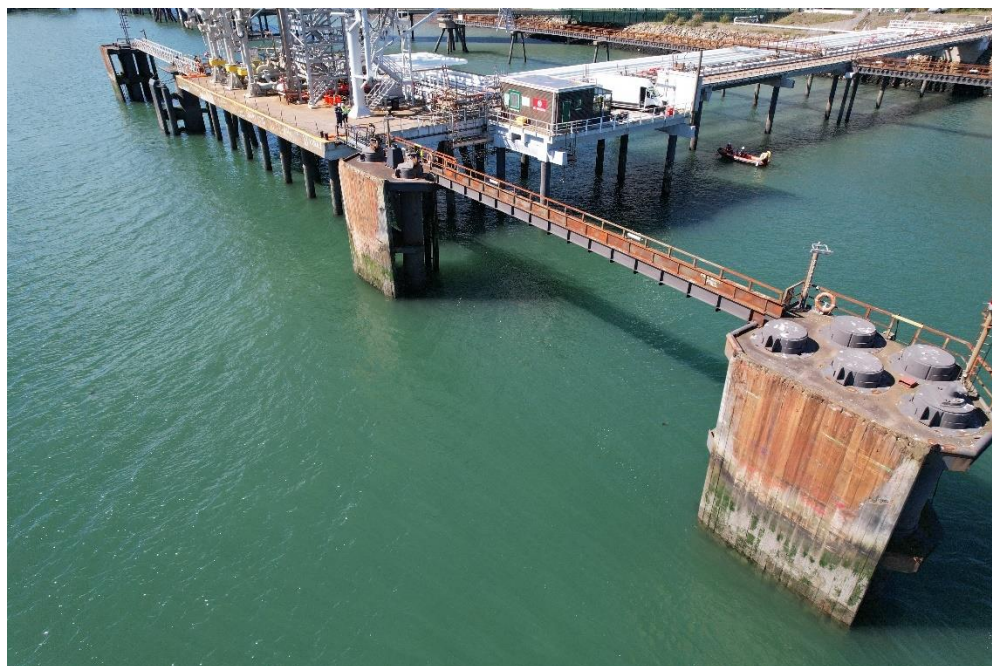
Operation Procedure / Method Statement		
Step	Description of Task	✓
	EVERY PERSON ON SITE HAS A DUTY TO ENSURE THAT THEY DO NOT PUT THEMSELVES OR OTHERS AT RISK.	
	All persons involved in the operation are to have a prestart briefing where the operation and method statement will be explained along with 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 are to be worn at all times during the operation.	
	All Personnel are to adhere to Red7Marine Health & Safety Standards	
	All Personnel will receive an Induction from Valero Terminal which will include all specific restrictions required whilst working within the terminal.	
	All lifting operations will be conducted under Red7Marine standards and procedures under the instruction of the issued Lift Plan.	
	Throughout the Project, a safety boat will be always present during the working day.	
	Throughout all fenders and bracing installation, the Barge Master must ensure the barge has been adequately preloaded and jacked to the required height stated by the Engineering Department.	
1.	Mobilise Jack-Up Barge to Valero Pembroke Loading Quay. The Crawler Crane and Piling Gate will be loaded on the barge in accordance with the Deck Plan. 	
2.	Under the towage plan and when all conditions are deemed safe to continue, the barge will be transferred and to Berth 2 - BD07 as per the image below. The barge will be located and jacked up	

into position. It is intended to have the barge located in a single position that can accommodate all required construction activities; - demolition, drilling, piling installation and lifting on the pile sleeve etc.



3. When the barge is secured at Valero, jacked up and preloaded accordingly. When the Barge Master deems the barge safe, lifting operations for the 2no Fender Bracings (East and West) onto the barge can commence.

The project will commence by demolishing the existing twin pile dolphin structure. All electrical connections will be isolated and removed prior to demolition. Using the 400t crawler crane on the Jack-Up Barge, the two linkspans will be removed and stored on the supply barge.



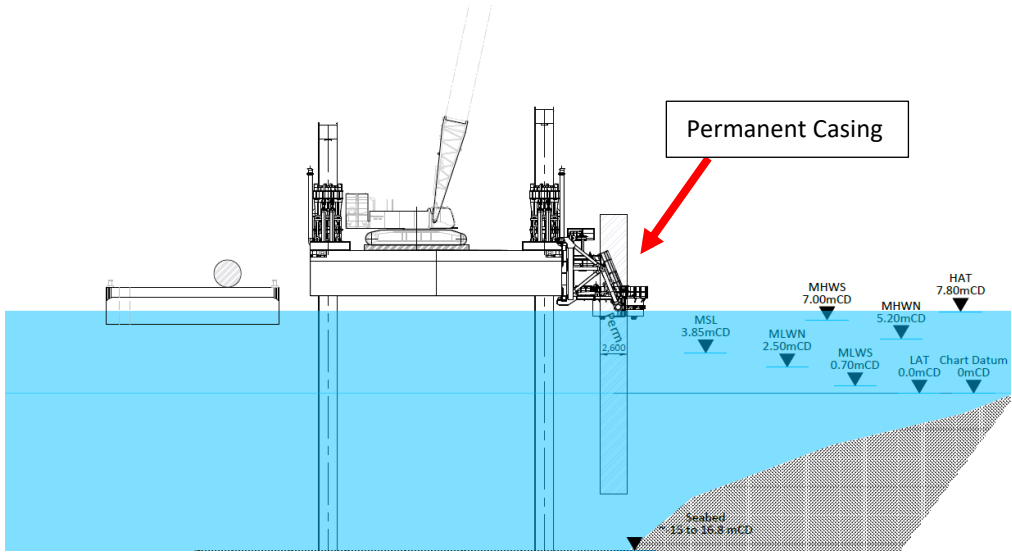
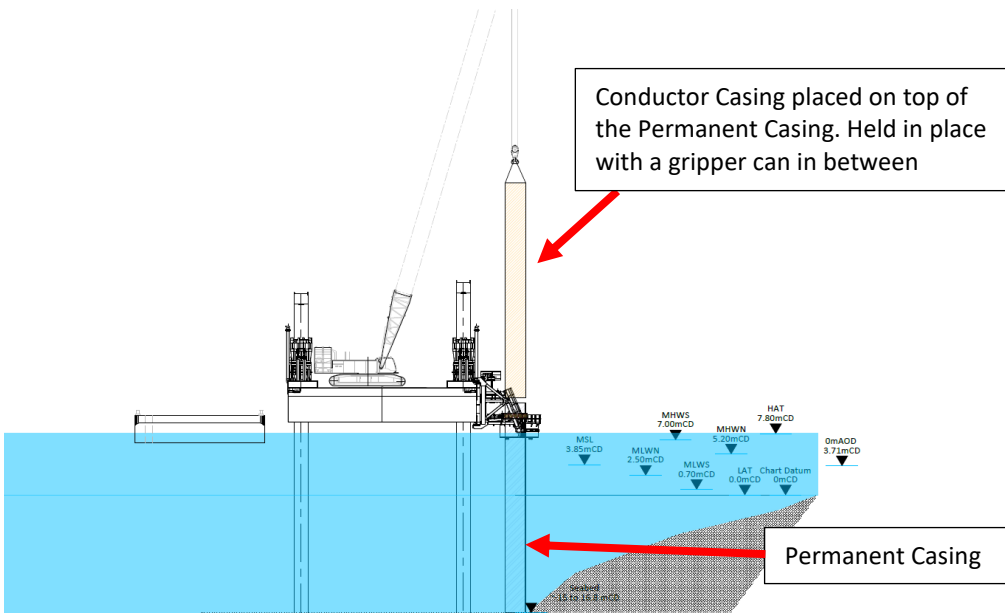
4. The dolphin structure will then be demolished in sections and lifted onto the Supply Barge. The piles will be drilled and tapped to ensure there is no build-up of gases within the pile.



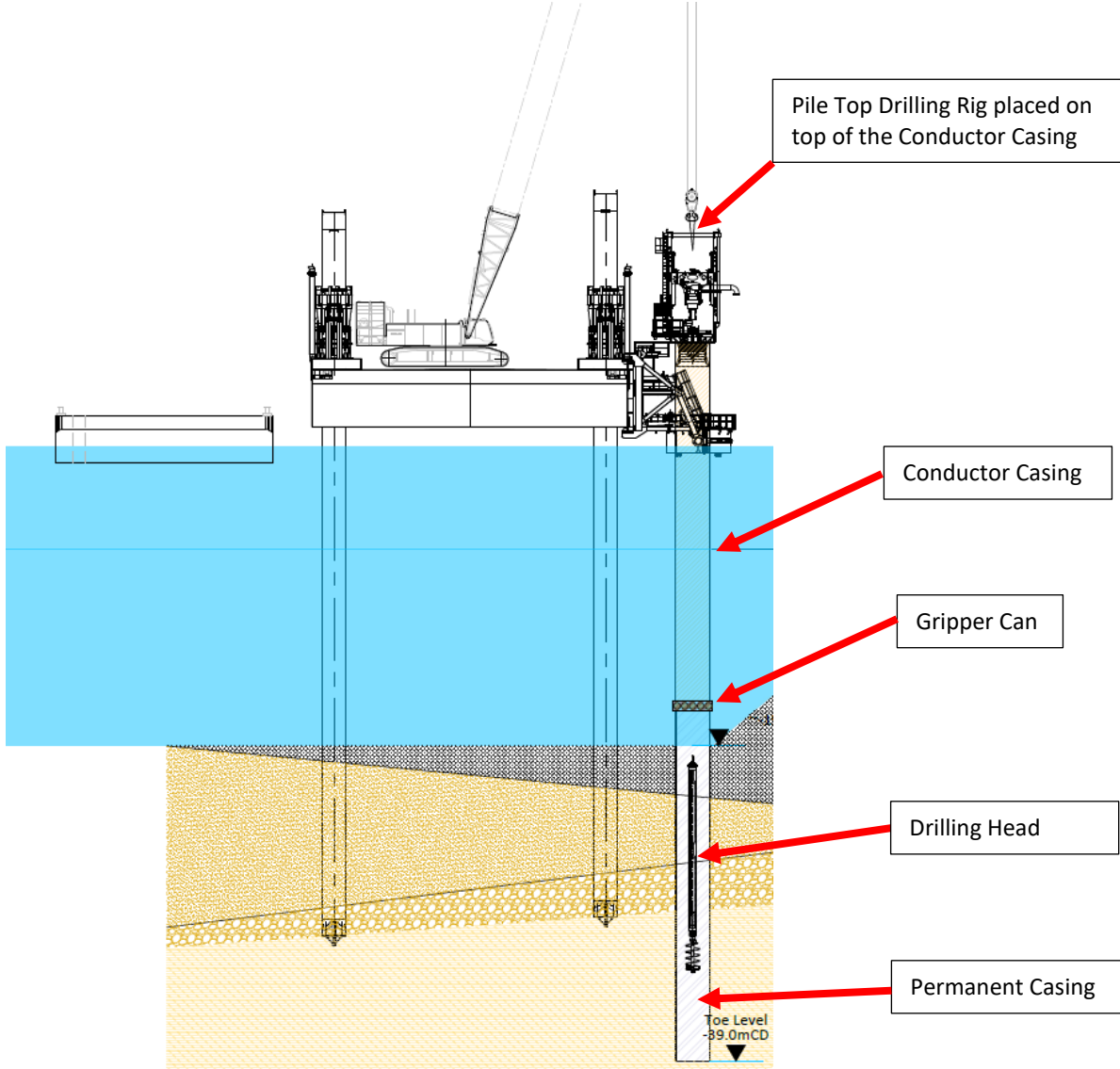
- 5.** Competent operatives will use wire saw cutting equipment or other appropriate tools which will be used to cut the piles in sections and lift these onto the designated barge.
- The piles will be cut off as close to bed level as reasonably practicable.
- The use of divers may be required if deemed necessary and all external factors are safe and favourable to proceed with this approach.
- The images below are an indicative representation of piles been cut near the seabed and lifted off.



- 6.** All material arising from the demolition of BD07 may be loaded either onto the Jack-Up or Supply Barge. On completion of the demolition phase of the project, the Supply Barge may be utilised for loading all debris on its deck then towed to Valero Quay facility in Pembroke Dock.
- Red7Marine will then unload the materials onto their quayside for disposal or recycling.

7.	As the demolition progresses, the Supply Barge will be mobilised to Valero Quay facility. Pile top drilling equipment will be delivered to Valero Quay where it will be assembled using a landside mobile crane and then loaded onto the second supply barge.	
8.	Once the demolition is complete and the Supply Barge is setup and ready to proceed, the piling gate will be lifted from the deck of the Jack-Up Barge and fixed into position on the side of the barge.	
9.	The Supply Barge with the required drilling equipment will be towed from Valero Quay to site and positioned accordingly.	
10.	The permanent casing is 17m long and approx. 2.5m in diameter, will be upended and lifted into the piling gate and held in place. 	
11.	Next, the conductor (30m x 2.5m dia) will be upended on the Supply Barge, lifted and fixed to the gripper can which will be located at the bottom end of the conductor. This will then be lifted and attached to the top of the permanent casing using the gripper can therefore connecting the Permanent Casing and the Conductor Casing together in the piling gate. The conductor / casing assembly will then be lowered onto the seabed using the crane. The piling gate will hold the assembly in the correct position. 	

12.	The crane will then lift the vibro hammer and attach it to the top of the conductor / casing assembly. The vibro-hammer will then drive the permanent casing circa 10m into the seabed to the top of the rock, or as far as the ground conditions will allow. The vibro-piling hammer will operate at a “soft-start” where the power of the hammer is gradually increased over a period of 15mins. This will allow fish time to swim away from the area. On completion, the piling hammer will be returned. An impact hammer is not required to install the casing. Should the casing not reach the correct depth using the vibro-hammer alone, the casing will settle to the correct depth during drilling.	
13.	The pile top drilling rig will be lifted onto the top of the conductor and attached using another gripper can. The image below is an indicative image how it will be setup. 	
14.	The drilling head will then get lowered into the conductor assembly until it reaches the seabed. Images below is an indicative representation of the drilling head used onsite. 	

15.	Drilling will commence and the excavated material will pass through the drill pipe and returned through a spoil discharge hose. All arisings will be discharged to the seabed.	
16.	During the drilling of the seabed, the permanent casing / conductor assembly may “follow on.” This is where the conductor / casing assembly will settle further into the seabed caused by the drilling of softer seabed (Arisings will be cast to seabed). Once the drill and casing reach the rock head the follow on should cease. However, an additional length of permanent casing has been allowed for as mitigation against follow on into the rock socket. 	
17.	Once the designated drill depth has been achieved the drilling will cease and drilling equipment will be removed and positioned away. The conductor and gripper can then be released from the permanent casing. The conductor will be laid back down on deck. The permanent casing will remain in the seabed.	

18.	The new permanent pile will be lifted into the water at Valero Quay facility. The pile will have end caps top and bottom as well as towing and lifting eyes fitted, making it buoyant. The pile will be towed to site using the assisting tugs and in accordance with passage plan. On arrival at BD07 the pile will be towed to the inside of the berth and connected to the crane. As the pile is being lifted, seawater will be pumped inside to ballast the bottom of the pile into the water.	
19.	The floating pile will then be pitched and lifted into the pile gate which is used to position the pile inside the casing in the seabed. 	
20.	The pile will be lowered into the casing hole until it sits on the bottom of the socket. The piling gate will hold the top of the pile in position until it has been grouted into the rock socket.	
21.	When all relevant parties are satisfied to continue, grouting operations can commence. Grout will fill the annulus between the rock socket and the pile and also between the casing and pile up to the seabed level. The grout will be batched from equipment on the Jack-Up Barge and pumped into the grout tubes. The grouting equipment on deck will be in a bunded area to prevent spillage into the water. Any water used in the cleaning of the equipment will be collected and treated. The centre of the pile gets filled with concrete from the bottom of the pile up to the top of rock level. A concrete pump will be positioned on land at the start of the jetty and concrete lines will be laid along the existing jetty.	
22.	Concrete will be pumped along the jetty and discharge into the centre of the pile through a 4" pipe pre-installed during the pile's fabrication.	
23.	After the grout has cured, the pile can be released from the pile gate. The Jack-Up Barge will then be jacked up so the deck of the barge is above the top of the pile. The piling gate can then be removed from the side of the barge and stored on deck.	
24.	The sleeve and fender will then be lifted onto the pile. It is proposed to carry out this as a single lift with the fender pre-attached to the sleeve. The sleeve will be lifted and lowered over the pile. Inserts inside the pile will centralise the sleeve over the pile. The sleeve has short beams welded to the inside which will sit on the top of the pile supporting the sleeve.	

		
25.	At the bottom of the sleeve there are sliding collar plates. These will be adjusted so they are bearing against the pile. The sliding collar plates will have a sealant applied to prevent any grout leakage.	
26.	Grout tubes will have been installed during the fabrication of the sleeve that will protrude through the top plate. Grout will be batched on the Jack-Up Barge and pumped into these tubes filling the annulus between the sleeve and the pile.	
27.	Once the grout has cured, the remaining furniture can be added to the sleeve. This includes the platform, ladder, linkspans and capstand and quick release hook etc.	
28.	After completion, the Jack-Up Barge will jack down into the water and be towed to the mobilisation quay at Valero Pembroke. The piling gate, crane, deck mats etc will all be removed from the barge and demobilised from the quay.	

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:

4.2 Methodology 2 (Crane on Flat-Top Barge)

Operation Procedure / Method Statement		
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 are to be worn at all times during the operation.	
	All Personnel are to adhere to Red7Marine Health & Safety Standards	
	All Personnel will receive an Induction from Valero Terminal which will include all specific restrictions required whilst working within the terminal.	
	All lifting operations will be conducted under Red7Marine standards and procedures under the instruction of the issued Lift Plan.	
	Throughout the Project, a safety boat will be always present during the working day.	
	Throughout all fenders and bracing installation, the Barge Master must ensure the barge has been adequately preloaded and jacked to the required height stated by the Engineering Department.	
	Note: There will be a smaller suitable Jack-Up Barge utilised for the required drilling operations.	
1.	Mobilise Flat Top Barge at Valero Quay (Pembroke Dock Options). The Crane and Piling Gate will be loaded on the barge in accordance with the Deck Plan. 	

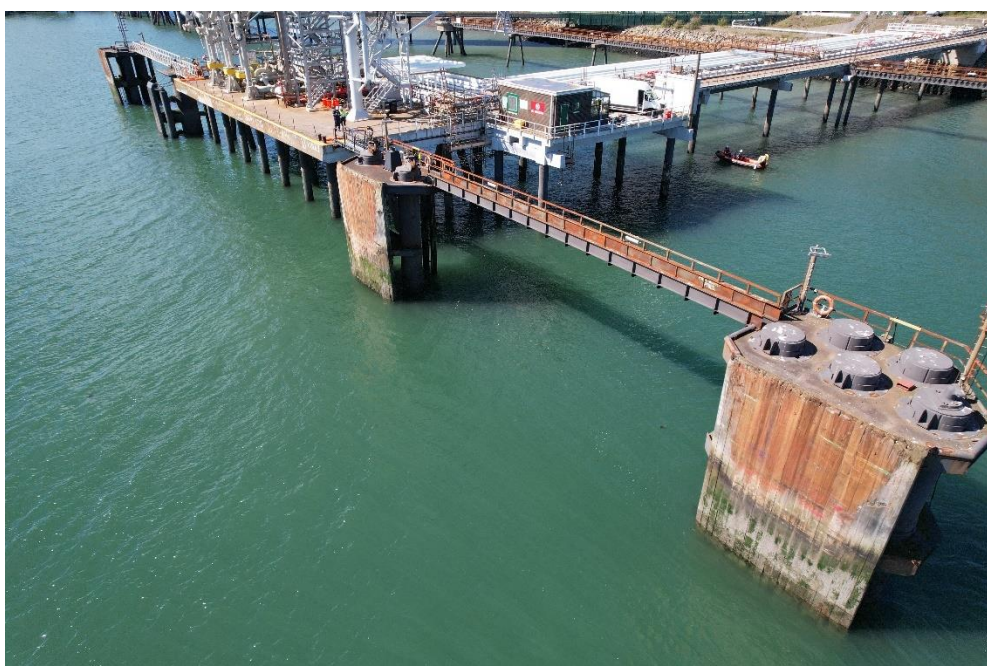
2. Under the towage plan and when all conditions are deemed safe to continue, the Flat-Top Barge will be transferred and to Berth 2 - BD07 as per the image below. The barge will be located and positioned. It is intended to have the barge located in a single position that can accommodate all required demolition activities.

All lifting operations will be performed from the deck of the Flat-Top Barge.



3. When the barge is secured and the Barge Master deems the barge safe, lifting operations for the 2no Fender Bracings (East and West) onto the barge can commence.

The project will commence by demolishing the existing twin pile dolphin structure. All electrical connections will be isolated and removed prior to demolition. Using the 400t crawler crane on the Flat-Top Barge, the two linkspans will be removed and stored.

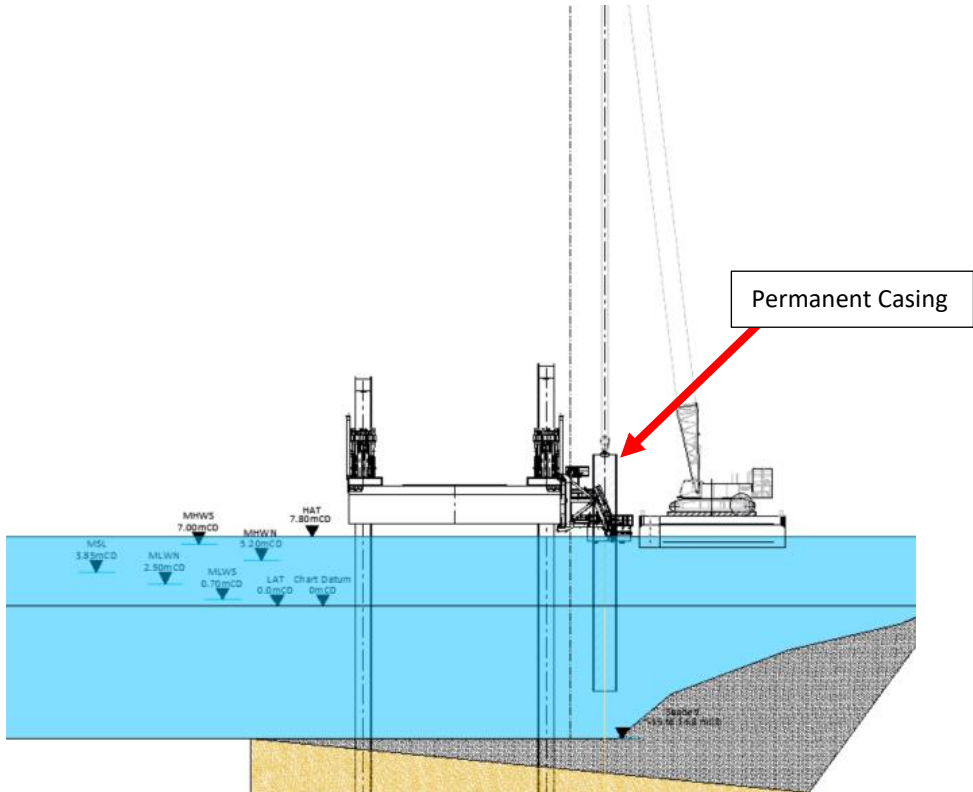


4. The dolphin structure will then be demolished in sections and lifted onto the Barge. The piles will be drilled and tapped to ensure there is no build-up of gases within the pile.

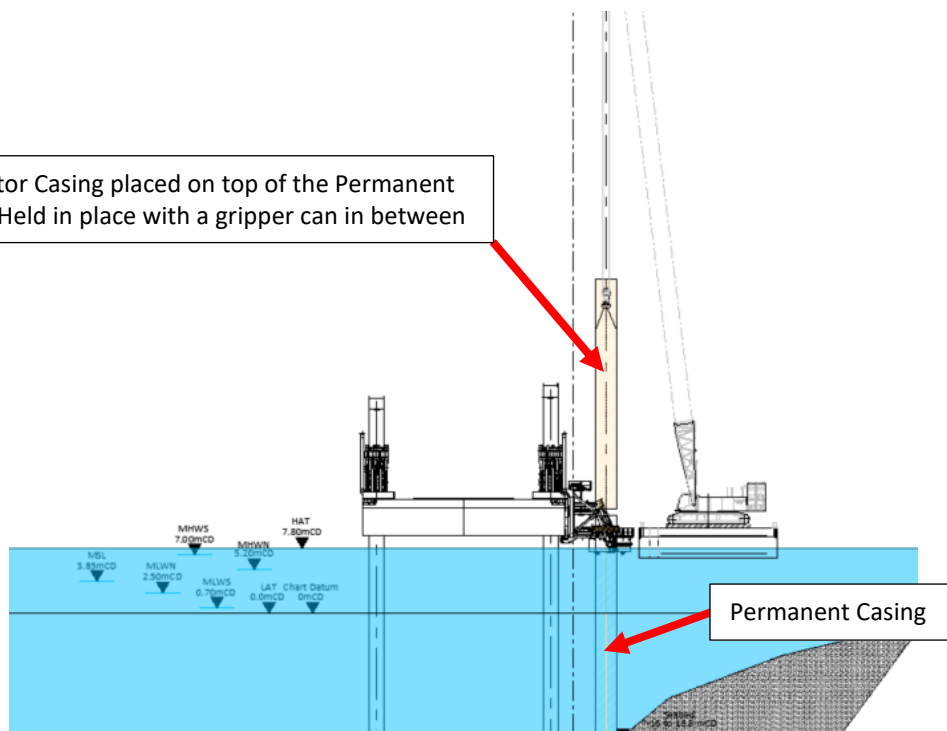


5. Competent operatives will use wire saw cutting equipment or other appropriate tools which will be used to cut the piles in sections and lift these onto the deck of the barge.
- The piles will be cut off as close to bed level as reasonably practicable.
- The use of divers may be required if deemed necessary and all external factors are safe and favourable to proceed with this approach.
- The images below are an indicative representation of piles been cut near the seabed and lifted off.



6.	All material arising from the demolition of BD07 will be loaded onto the Flat Top Barge. On completion of the demolition phase of the project, the Barge will be towed to Valero Quay facility in Pembroke Dock. Red7Marine will then unload the materials onto the quayside for disposal or recycling.	
7.	As the demolition progresses, the Jack up Barge will be mobilised at Valero Loading Quay. Prior to the barge's arrival, the drilling equipment will be delivered and assembled. When all required deck items have been loaded onto the Jack-Up Barge it will be towed to site and jacked up.	
8.	Once the demolition phase is complete and the Flat Top Barge is unloaded and then towed back to the worksite and setup in working conjunction with the Jack-Up Barge, the piling gate will be lifted and installed to the hull of the already jacked up Jack-Up Barge and fixed into position.	
10.	The permanent casing is 17m long and approx. 2.5m in diameter, will be upended and lifted into the piling gate and held in place. An indicative drawing is shown below, decks of barges have been cleared for clarity.  The diagram illustrates the installation of a permanent casing. A barge is positioned over a body of water. A crane on the barge is lifting a long, vertical casing into a piling gate. The casing is held in place by a gripper at the top. The seabed is shown below the water level. Various water level and datum markers are indicated on the left side of the diagram.	
11.	Next, the conductor (30m x 2.5m dia) will be upended on the Flat Top Barge, lifted and fixed to the gripper can located at the bottom end of the conductor. This will then be lifted and attached to the top of the permanent casing using the gripper can, connecting the Permanent Casing and the Conductor Casing together in the piling gate. The conductor / casing assembly will then be lowered onto the seabed using the crane. The piling gate will hold the assembly in the correct position.	

Conductor Casing placed on top of the Permanent Casing. Held in place with a gripper can in between



12.

The crane will then lift the vibro hammer and attach it to the top of the conductor / casing assembly. The vibro-hammer will then drive the permanent casing circa 10m into the seabed to the top of the rock, or as far as the ground conditions will allow.

The vibro-piling hammer will operate at a “soft-start” where the power of the hammer is gradually increased over a period of 15mins. This will allow fish time to swim away from the area. On completion, the piling hammer will be returned.

An impact hammer is not required to install the casing. Should the casing not reach the correct depth using the vibro-hammer alone, the casing will settle to the correct depth during drilling.

13.

The pile top drilling rig will be lifted onto the top of the conductor and attached using another gripper can. The image below is an indicative image how it will be setup.

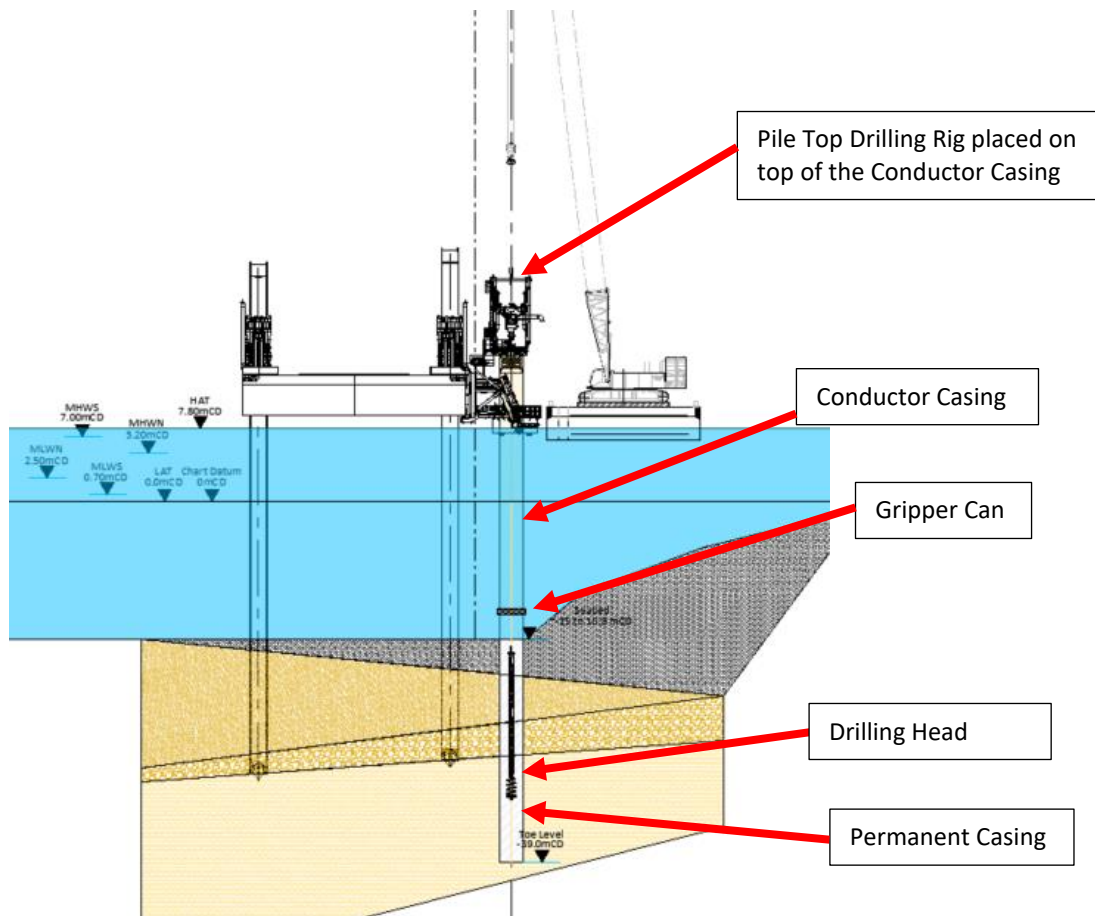


- 14.** The drilling head will then get lowered into the conductor assembly until it reaches the seabed. Images below is an indicative representation of the drilling head used onsite.



- 15.** Drilling will commence and the excavated material will pass through the drill pipe and returned through a spoil discharge hose. All arisings will be discharged to the seabed.

- 16.** During the drilling of the seabed the permanent casing / conductor assembly may “follow on.” This is where the conductor / casing assembly will settle further into the seabed caused by the drilling of softer seabed. Once the drill and casing reach the rock head the follow on should cease. However, an additional length of permanent casing has been allowed for as mitigation against follow on into the rock socket.



17.	Once the designated drill depth has been achieved the drilling will cease and drilling equipment will be removed and positioned away. The conductor and gripper can then be released from the permanent casing. The conductor will be laid back down on deck. The permanent casing will remain in the seabed.	
18.	The new permanent pile will be lifted into the water at Valero Quay facility. The pile will have end caps top and bottom as well as towing and lifting eyes fitted, making it buoyant. The pile will be towed to site using the assisting tugs and in accordance with passage plan. On arrival at BD07 the pile will be towed to the inside of the berth and connected to the crane. As the pile is being lifted, seawater will be pumped inside to ballast the bottom of the pile into the water.	
19.	The floating pile will then be pitched and lifted into the pile gate which is used to position the pile inside the casing in the seabed.  New Pile to be lifted and lowered through the pile gate and the permanent casing embedded in the seabed	
20.	The pile will be lowered into the casing hole until it sits on the bottom of the socket. The piling gate will hold the top of the pile in position until it has been grouted into the rock socket.	
21.	When all relevant parties are satisfied to continue, grouting operations can commence. Grout will fill the annulus between the rock socket and the pile and also between the casing and pile up to the seabed level. The grout will be batched from equipment on the Jack-Up Barge and pumped into the grout tubes. The grouting equipment on deck will be in a bunded area to prevent spillage into the water. Any water used in the cleaning of the equipment will be collected and treated. The centre of the pile gets filled with concrete from the bottom of the pile up to the top of rock level. A concrete pump will be positioned on land at the start of the jetty and concrete lines will be laid along the existing jetty.	
22.	Concrete will be pumped along the jetty and discharge into the centre of the pile through a 4" pipe pre-installed during the pile's fabrication.	
23.	After the grout has cured, the pile can be released from the pile gate. The Jack-Up Barge will then be jacked up, so the deck of the barge is above the top of the pile. The piling gate can then be removed from the side of the barge and stored on deck.	
24.	The sleeve and fender will then be lifted onto the pile. It is proposed to carry out this as a single lift with the fender pre-attached to the sleeve.	

Mainstay Marine – Valero

R7M-524001-MST-001
Rev C5 20241209



	The sleeve will be lifted and lowered over the pile. Inserts inside the pile will centralise the sleeve over the pile. The sleeve has short beams welded to the inside which will sit on the top of the pile supporting the sleeve. 	
25.	At the bottom of the sleeve there are sliding collar plates. These will be adjusted so they are bearing against the pile. The sliding collar plates will have a sealant applied to prevent any grout leakage.	
26.	Grout tubes will have been installed during the fabrication of the sleeve that will protrude through the top plate. Grout will be batched on the Jack-Up Barge and pumped into these tubes filling the annulus between the sleeve and the pile.	
27.	Once the grout has cured, the remaining furniture can be added to the sleeve. This includes the platform, ladder, linkspans, capstand, and quick release hook etc.	
28.	After completion, the Flat Top Barge will be towed to Valero Quay. This will be followed by the Jack-Up Barge being jacked down into the water and towed to the mobilisation quay. The piling gate, crane, deck mats etc will all be removed from the barge and demobilised from the quay accordingly.	

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:

5.0 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:

For more information on the Red7Marines PPE policies and standards, please refer to R7M-HSM-MAN-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.

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 To be worn when hammers are utilised	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 (grout) 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	 ☐ Breathing Apparatus	 ☐ 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 and whilst working onsite	To be worn in a Cat.3 (high risk) working environment at all times		
If other please specify:				

6.0 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 Red7Marine Reporting and Investigation of Accidents & Incidents Procedures shall be followed. All reports will be completed the using the Red7Marine Incident Report form.

In the event of a major incident the emergency response procedure R7M-HSM-PRD-002 should be referred to and followed.

Please refer to Accident and Incident Investigation Procedure R7M-HSM-PRD-004 for more information.

6.1 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.

6.1.1 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.

6.1.2 General First Aid Procedure

If you sustain an injury you must:

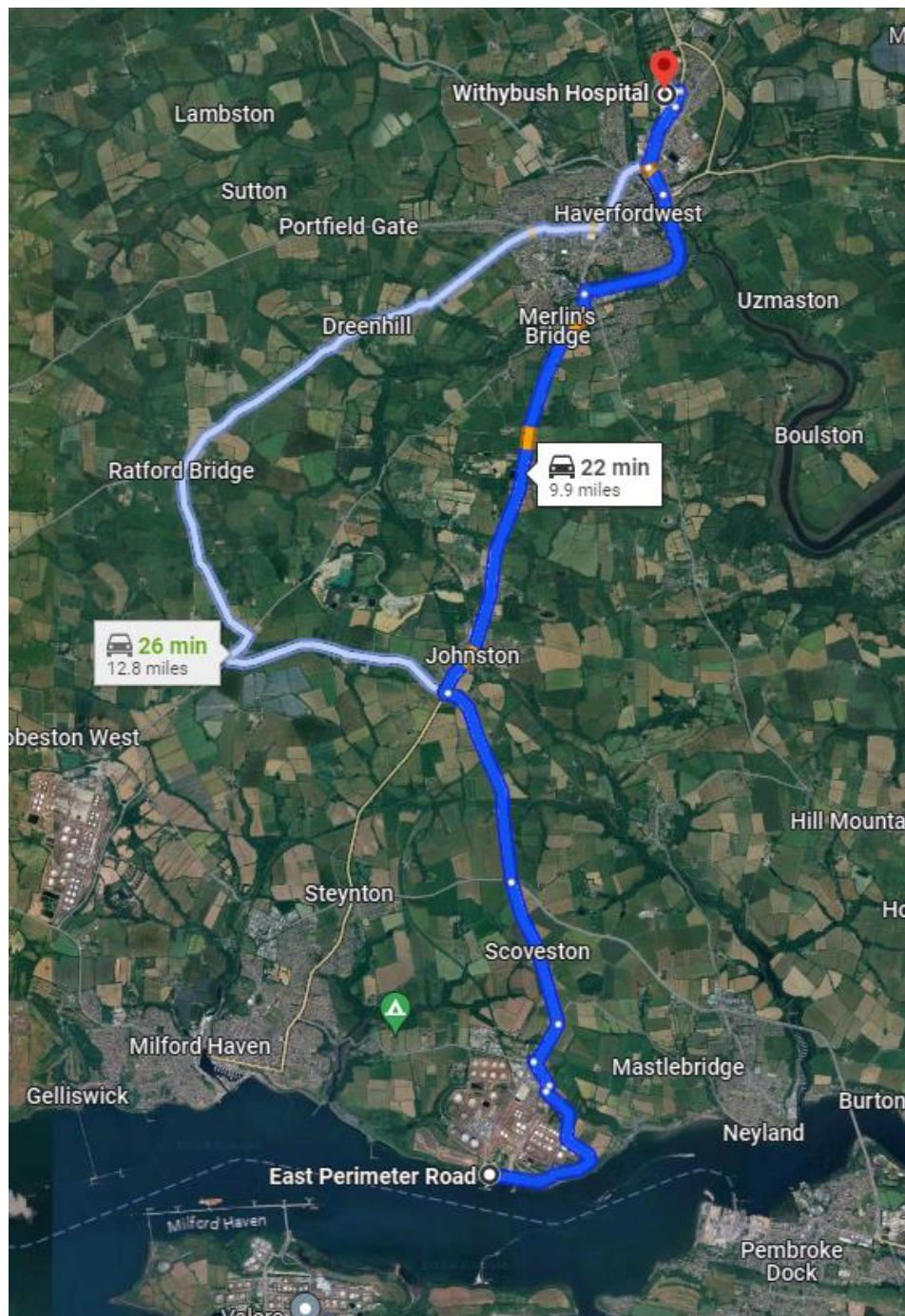
Item	Task
1.	Stop work immediately and contact the appointed first aider on site.
2.	The first aider will determine extent of the injury and administer appropriate first aid.
3.	If deemed necessary by the first aider transfer casualty to the nearest Hospital A&E Department to seek medical aid.
4.	Complete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

6.2 Hospital Route

6.2.1 Hospital Address

Withybush General Hospital Major Acute Hospital
Fishguard Road
Haverfordwest
Pembrokeshire
SA61 2PZ
Tel: 01437 764545

6.2.2 Driving Directions to Nearest Hospital



6.3 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.

6.4 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.

6.5 Spill Procedure

In any spillage incident the Client must always be informed as soon as reasonably practicable and the relevant forms must be completed, and the relevant agencies must be contacted within the required timescale.

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.	<u>If outside of immediate control, then;</u> 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>

7.0 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

Appendix A – Barge Specifications

No.	Description	Revision
1		
2		
3		

Appendix B – Risk Assessment

No.	Description	Revision
1	Working Near, On or Over Water	
2	Lifting Operations	
3	Barge Positioning	
4	Working at Height	
5	Manual Handling	
6	Piling Operations	
7	Grouting / Concreting Operations	

Mainstay Marine – Valero

R7M-524001-MST-001
Rev C5 20241209



Task: **Working Near, On or Over Water**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Falling into water from quay edge, walk way, access ladder causing: - Drowning; - Hypothermia, cold injury; - Impact injury during fall (vessel, ladders, wall); - Infection from contaminated water.	Others in vicinity	5	3	15	- Use of signage to direct visitors to site office area; - Area of operations cordoned off to public or anyone not involved in task; - Signage prohibiting access to the site; - Barriers preventing access; - Robust supervision of area of operations.	5	1	5	Project Manager Site Manager Workforce All Ops Team
	Operations Team	5	3	15	- Method statement risk assessment to be briefed to all involved in task to seek acknowledgement of understanding; - Allocation of individual responsibilities; - Handrails on walkways and vessels; - Hard hats to be worn at all times; - Safety boots with quick release zips to be worn at all times; - Fall arrest systems for all ladder access/egress methods; - Fall arrest systems when working on platforms with no handrails; - Objects that could obstruct waters edge access area to be clearly marked or removed; - All operatives to wear issued and in date lifejackets; - Safety boat to be in attendance at all times; - Specific risk assessments to take into account the use of Transfer/fladen suits based on environment (<10°C water temp); - Lifebuoys and throw ropes to be present at all times; - Liferaft to be present of floating platform (barge/vessels); - Alarm system to alert of man overboard; - Local emergency contact numbers (RNLI etc) to be available.	5	1	5	
Falling into water caused by poor visibility of site area or extreme weather conditions.	Operations Team	5	3	15	- All site area to be well lit with lighting towers if necessary; - All operatives to use head torches in low light conditions.	5	1	5	Project Manager Site Manager Workforce All Ops Team

Mainstay Marine – Valero

R7M-524001-MST-001
Rev C5 20241209



Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk S P R			Control Measures (Mitigating Factors)	Residual Risk S P R			Responsibility
Weil's disease is a severe form of leptospirosis. This is a type of bacterial infection. It's caused by Leptospira bacteria. You can contract it if you come into contact with the urine, blood, or tissue of animals or rodents (rats) that are infected with the bacteria. Symptoms include Chills and Headache. It can lead to organ failure or death.	Operations Team	4	3	12	- Use of waterproof boots, gloves and safety glasses if presence of rats is detected; - Good personal sanitisation prior to eating, touching mouth or preparing food; - Covering up of open sores or cuts to prevent exposure; - Good site sanitation (litter) to not encourage rats; - Brief all site team on hazards and symptoms associated; Report the presence of rats on barges and/or vessels to environmental health; - Avoid contact with rats or their habitat.	4	1	4	Project Manager Site Manager Workforce All Ops Team

Risk Rating = Severity multiplied by Probability: 1 to 4 = Low Risk 4 to 12 = Medium Risk 15 to 25 = High Risk

PPE Requirements

Hard Hat ☒	Eye Protection ☒	Safety Footwear ☒	Gloves ☒	Coveralls ☐
Ear Defence ☐	Life Jacket ☒	Hi-Visibility Clothing ☒	Dust Mask ☐	Face Protection ☐

Created By

Name:	Andy Ramsey	Signature:
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification		
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5			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	M	M	1	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	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation			

Task: **Lifting Operations**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Overturning of the crane due to: - Unsuitable base for lifting equipment; - Poor stability of barge (marine ops); - Overloading/overreaching of crane; - Unstable load; - Adverse weather conditions; - Incorrect use and/or position of crane; - Operator error or inexperience. Causing: - Injuries/fatalities; - Damage to buildings or structures; - Damage to equipment and plant.	Others	5	3	15	- Use of signage to direct visitors to site office area; - Area of operations cordoned off to public or anyone not involved in task; - Signage prohibiting access to the site; - Barriers preventing access; - Robust supervision of area of operations.	5	1	5	Appointed Person Engineer Lift Supervisor
	Operator Operations Team	5	3	15	- All lifting ops to be correctly planned in accordance with LOLER 1998 by an appointed person and a lift plan created and signed off; - Lift plan is to be briefed to all involved in the task; - Stability calcs for marine lifts to be completed prior; - Operator is to be experienced, competent and qualified; - All loads to be slung by competent and qualified personnel; - All lifts to be controlled by a qualified lift supervisor; - Weather parameters identified in lift plan are to not be exceeded ever, and regular wind speed checks are to take place.	5	2	10	Operator Slinger Signaller Project Manager Site Manager Workforce All Ops Team
Load falling from height due to: - Operator error or inexperience; - Poorly slinged items; - Failure of lifting accessories/load bearing equipment/winch wire; - Adverse weather conditions; - Mechanical failure of lifting equipment. Causing: - Injuries/fatalities; - Damage to buildings or structures; - Damage to equipment and plant.	Others	5	3	15	- Use of signage to direct visitors to site office area; - Area of operations cordoned off to public or anyone not involved in task; - Signage prohibiting access to the site; - Barriers preventing access; - Robust supervision of area of operations.	5	1	5	Appointed Person Lift Supervisor Operator
	Operator Operations Team Workforce	5	3	15	- Operator is to be experienced, competent and qualified; - All loads to be slung by competent and qualified personnel; - All lifts to be controlled by a qualified lift supervisor; - Weather parameters identified in lift plan are to not be exceeded ever, and regular wind speed checks are to take place; - Lifting equipment is to be inspected before use and be in date of maintenance events; - All lifting accessories are to be in date of thorough inspection, and also visually checked before lift;	5	1	5	Slinger Signaller Project Manager Site Manager Workforce All Ops Team

Mainstay Marine – Valero

R7M-524001-MST-001
Rev C5 20241209



Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
					- Only lifting accessories identified by ser no on lift plan are to be used; - Weather parameters identified in lift plan are to not be exceeded ever, and regular wind speed checks are to take place; - No load is to be left suspended longer than is necessary.				
Collision of lifting equipment with people, building, vehicles and plant due to: - Crane movements; - Crane traversing; Causing: - Injuries/fatalities; - Damage to buildings or structures; damage to equipment and plant.	Others	5	3	15	- Use of signage to direct visitors to site office area; - Area of operations cordoned off to public or anyone not involved in task; - Signage prohibiting access to the site; - Barriers preventing access; - Robust supervision of area of operations.	5	1	5	Appointed Person Lift Supervisor Operator Slinger Signaller
	Operator Operations Team Workforce	5	3	15	- Use of as many banksmen as it takes for SSOW; - Use experienced operatives and ensure operation is managed - Maintain a slow, methodical and controlled speed when moving; - Everyone not involved with task stay clear of plant; - Move non-essential equipment away from lift area; - Good communication between all involved in the lift; - Hi vis clothing essential.	5	1	5	Project Manager Site Manager Workforce All Ops Team

Risk Rating = Severity multiplied by Probability: 1 to 4 = Low Risk 4 to 12 = Medium Risk 15 to 25 = High Risk

Mainstay Marine – Valero

R7M-524001-MST-001
Rev C5 20241209



PPE Requirements

Hard Hat ☒	Eye Protection ☒	Safety Footwear ☒	Gloves ☒	Coveralls ☐
Ear Defence ☐	Life Jacket ☐	Hi-Visibility Clothing ☒	Dust Mask ☐	Face Protection ☐

Created By

Name:	Andy Ramsey	Signature:
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification	
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5					
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects	No Cost	<1Ltr	L	L	L	M	M	1	Highly Improbable	A possibility but extremely remote chance of occurrence	LOW RISK	Operations may proceed with care
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)	<£5,000	1-10Ltr	L	L	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation		

Task: **Barge Positioning**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Tugboats loss of power (underpower) / control may potentially cause: - Unavoidable collision leading to damage to barge / tug / other vessels / existing structures - Collision between barge and uncontrolled vessels / objects unable to steer or manoeuvre due to lack of power - Running aground - Potential Capsize – rescue scenario / loss of equipment and plant on deck of barge - Total loss of control of barge (at the mercy of tide / currents)	All Personnel involved in the positioning	5	3	15	- Emergency procedures in place: - Suitable life rafts are to be available on both the Barge and tugboats; - All personnel are to wear lifejackets during the tow; - Notifications of intentions and movements to the relevant authorities. - Inspection of towing equipment for signs of damage / up-to-date certification for the equipment and to be examined and signed off; - Positioning operations to be conducted in a steady and controlled manner and during suitable weather / environmental conditions; - Ensure only adequate tugboat(s) are selected for the positioning accompanied with competent and adequately trained personnel; - There must always be a clear channel of communication maintained between Barge Master, deck hands and skippers throughout the positioning operations; - Ensure all tugboats involved are secured to the barge at the predetermined locations as per the planning methodology i.e. stern / bow or side of the barge; - Ensure there has been careful planning of all barge repositioning operations and approved appropriately prior to commencement of positioning operations; - Conduct thorough inspection and maintenance check of tugboats involved and ensure all are deemed fit for use.	5	1	5	Engineering Department Surveyor Management Barge Master Vessel Master
Adverse weather / environmental conditions which may cause: - Unavoidable collision - Poor visibility - Miscommunication	All Personnel involved in the positioning	4	3	12	- Ensure all planned positioning operations are being undertaken within the acceptable environmental / weather limitations, not exceeding it; - Always check the weather window forecast and continually monitor leading up to the day of the positioning operation to ensure a safe weather window; - Ensure there is adequate light available to carry out the	4	1	4	Management Barge Master Vessel Master

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Difficulty in navigation – consequently may lead to lowering legs on potential underwater hazards such as cables, pipelines etc					planned operation; Ensure there is always a clear channel of communication between all relevant parties involved.				
Barge instability due to: - Uneven riverbed - Underground / underwater obstructions - Incompliance with deck layout - Adverse environmental / weather conditions Potentially may lead to: - Person falling overboard – hypothermia / drowning - Damage to barge - Barge taking on water	All Personnel involved in the positioning	5	4	20	- Sufficient life rafts supplied on deck in case of the scenario of taking on water; - Secure seafastening to be carried out for all cargo and plant on deck; - Thorough survey carried out, use of pre-planned route taking the tide, water depth and bottom type into consideration as well as hard-copy knowledge of nearby safe havens; - Constantly keep good communication with the authorities and shore-based team; - Toolbox talks and briefings to be conducted regarding positioning operations. Details of start and end locations, any known over/under water obstructions, communication channels and weather conditions are to be discussed; - Engineering department to issue an approved deck plan along with stability calculations to confirm operation can commence; - Daily check to be performed to ensure that all ropes and mooring connections are adequate and no damage has occurred; - If loss of tow occurs, Barge Master will make the call to lower the legs in order to prevent the barge from drifting and possibly striking vessels/ structures in the vicinity.	5	2	10	Engineering Department Management Barge Master Vessel Master
Mooring / Navigational System Failure potentially causing: - Serious injury due to snap back - Difficulty to control movement / potential collision through narrow passages i.e. through bridges etc - Loss of navigational equipment may cause loss of knowledge of safe havens (forgotten)	All Personnel involved in the positioning	5	3	15	- All appropriate navigation lights and shapes to be installed on both the tugboats and barges; - Thorough mooring survey / inspections / daily checks to be conducted before positioning operations commence; - Good channel of communication with all involved parties; - A Barge Master and additional deck hand(s) are to be positioned on the barge to aid navigation through narrow passages.	5	2	10	Barge Master Vessel Master Management

Mainstay Marine – Valero

R7M-524001-MST-001

Rev C5 20241209



PPE Requirements

Hard Hat ☒	Eye Protection ☐	Safety Footwear ☒	Gloves ☐	Coveralls ☐
Ear Defence ☐	Life Jacket ☒	Hi-Visibility Clothing ☒	Dust Mask ☐	Face Protection ☐

Created By

Name:	Andy Ramsey	Signature: 
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification		
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5				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	M	M	1	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	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation			

Task: **Working at Height**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Fall from height whilst working on a jacked-up barge, high level working area, climbing on concertina ladder etc Caused by: - Slippery surfaces / entanglement / slips, trips and falls - Inappropriate / poorly timed / bad footing - Carrying heavy / awkward load - Inadequate / tampered / sabotaged edge protection - Inexperienced personnel - Complacency - Fear of heights - Failure of inertia reel / fall arrest system / ladder etc - Faulty PPE and equipment / harness not fit for purpose	Operatives carrying out the task	5	4	20	- Persons with fear of heights to ensure they inform the supervisor and not go ahead with work in fear of discipline - Fully inspected and tested harness must be worn and a fall arrest / inertia reel system to be utilised secured to an anchor point - Remove site protection only when necessary and reinstate soon as it is reasonably practicably possible - Only personnel deemed fit, competent and adequately trained to conduct works at height - Ensure adequate PPE is in place, always wear a harness, check footwear for integrity and ensure no slippery substances are present on the soles - Use mechanical aids i.e. cherry picker to provide a controlled setting when working at height and assisting any manual handling operation if applicable to prevent overreaching - Inspect designated walking / access & egress routes for integrity and potential trip hazards before proceeding - Adequate lighting must be present when working at height	5	1	5	All Personnel Project Manager Barge Master Supervisor
	Visitors onsite				- All visitors to be given a site induction and informed of all the site rules and restricted locations prior to entry onsite - Visitors to be accompanied onsite by a designated operative - All visitors to be given appropriate PPE which easily identify them as a visitor onsite - Erect adequate barriers and signage where appropriate that is easy to understand and follow				
Adverse weather and environmental conditions	Operatives carrying out the task	3	4	12	- Ensure adequate notification systems are in place to notify personnel about potential adverse weather, rain, wind etc conditions approaching the site - When the weather conditions become too unfavourable all works involving working at height will cease	3	1	3	Project Manager Supervisor Barge Master

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Inadequate preparedness of personnel onsite potentially causing serious injury or death Caused by: - Inexperienced / poorly trained personnel - Complacency - Faulty equipment - Adverse weather conditions	All personnel	5	5	25	- Adequately identify, risk assess and reasonably practicably control all reasonably foreseeable types of operational incident where work at height activities can be expected - Ensure all relevant personnel are adequately trained and competent for the task and aware of the rescue plan - Instruct workforce during the site briefing who will be expected to work at height prior to the start of the shift and address any queries via toolbox talks that may arise - Ensure there is an adequate provision of fully tested and inspected safety equipment available - Conduct pre-use checks on working equipment, ladders etc which are going to be used whilst working at height	5	2	10	Project Manager Barge Master
Falling objects / debris from height, causing serious injury or death due head injury to personnel at ground / lower level. Caused by: - Carrying heavy / awkward loads - Overreaching whilst carrying load - Storing items / tools in pockets - Poor housekeeping	All personnel	5	4	20	- Setup exclusion zones where it is deemed a risk any personnel inside is to be fully briefed and correctly protected with the appropriate PPE i.e. hard hats, high vis etc - Good housekeeping to be maintained always ensuring there are no loose objects or potential trip hazards present / do not leave tools, equipment and items at the edge of surfaces - Operative to not carry tools / equipment in pockets	5	1	5	All Personnel Project Manager Barge Master Supervisor
	Visitors onsite				- Visitors to stick to the designated paths and not divert - Erect barriers and signage to keep visitor away from area of danger (exclusion zones) from potential fallen objects				
Overreaching outside the safe barrier perimeter	Operatives carrying out the task	3	5	15	- No heavy items are to be lifted or handled beyond easily accessible location - Operatives are not permitted to retrieve any item beyond arm's length over an edge without additional aid - Edge protection and handrail to be provided where necessary - Personnel are to remain within the safe barriers of the working area and must not overstretch for any reason	3	1	3	All Personnel

Mainstay Marine – Valero

R7M-524001-MST-001
Rev C5 20241209



PPE Requirements

Hard Hat ☒	Eye Protection ☐	Safety Footwear ☒	Gloves ☐	Coveralls ☐
Ear Defence ☐	Life Jacket ☐	Hi-Visibility Clothing ☒	Dust Mask ☐	Harness ☒

Created By

Name:	Andy Ramsey	Signature:
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification	
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5			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	M	M	1	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	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation		

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R7M-524001-MST-001
Rev C5 20241209



Task: **Manual Handling**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Heavy objects to be lifted can cause strains, sprains, ligament damage or permanent back injury.	Person lifting the load	4	3	12	- All persons trained on manual handling prior to induction; - Always use alternative mechanical method of lifting if available, such as the HIAB located on the barge; - If no alternative means of lifting available complete the form R7M-HSM-FRM-008 Rev C1 Manual Handling Assessment to ascertain if lift is feasible if in any doubt; - For large items that obscure view or are unstable do not attempt to lift on your own; - Always wear gloves and protective footwear when handling packages;	4	1	4	Project Management Person Lifting All Personnel
Large objects obscure vision or are difficult to grip. Could cause slip or trip (stairs / steps) or collision with another person.	Person lifting the load or workforce in the vicinity	3	3	9		3	1	3	
Unstable or unsteady object, could fall out of grip or cause lifter to topple over, or land on lifters foot.	Person lifting the load	3	2	6		3	1	3	
Outside lifting on uneven ground could cause a fall or jarring of back when taking a step forward.	Person lifting the load	3	3	9		3	1	3	
Sharp edges, splinters, nails or staples protruding from packaging could puncture or lacerate skin.	Person lifting the load	2	3	6	- If lifting outside or on uneven ground get someone to provide guidance; - Evaluate where heavy items are dropped off/left when offloaded to minimise distance to carry them; - Heavy items marked up to weight of object if beyond SSOW do not lift; - Be aware of individuals capabilities and never exceed them; - If workforce are in vicinity ask them to assist with lift; - Employ good manual handling posture and technique at all times; - Maintain good housekeeping to ensure walkways, corridors and stairwell are always free from obstruction.	3	1	3	

Risk Rating = Severity multiplied by Probability: **1 to 4 = Low Risk** **4 to 12 = Medium Risk** **15 to 25 = High Risk**

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Rev C5 20241209



PPE Requirements

Hard Hat ☒	Eye Protection ☒	Safety Footwear ☒	Gloves ☒	Coveralls ☐
Ear Defence ☐	Life Jacket ☐	Hi-Visibility Clothing ☒	Dust Mask ☐	Face Protection ☐

Created By

Name:	Andy Ramsey	Signature: 
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification	
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5			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	M	M	1	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	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation		

Task: **Piling Operations**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Personnel injuries, damage to plant/materials during pile installation	All personnel on the barges during piling installation	4	4	16	- All personnel to be briefed on the required operation; - Only competent marine / piling operatives to be utilised; - All lifting operations to be undertaken in accordance with approved Lift Plans and barge stability calculations; - Care will be taken not to overload lifting appliances; - The Temporary Works Risk if there is any failure it will not cause injury to personnel or damage to plant/assets; - Do not lift piles in adverse weather conditions; - Ensure all lifting accessories are visually checked and carry in date certification.	4	2	8	Engineering Department Project Management Barge Master All Personnel
Loud noises from utilising the project hammers (Vibro / Impact Hammers)	Personnel within proximity of the piling installation	4	3	12	- Employ soft-start procedures efficiently; - Ensure personnel not directly involved with the installation are a safe distance away from the source of the noise; - Ensure all personnel onsite are wearing the appropriate hearing protection stated by project management; - Ensure all personnel are aware when the pile installation will commence on that day and signed up to the site brief, and to address how communication will be maintained during the noisy phase of the installation; - During the day ensure the noise levels are regularly monitored with a noise monitor device and record accordingly the noise levels. Ensure to inform project management of any noise level increase who will take appropriate action; - Always use the hammers as per the suppliers instructions and information provided.	4	1	4	Project Management All Personnel

Risk Rating = Severity multiplied by Probability: **1 to 4 = Low Risk** **4 to 12 = Medium Risk** **15 to 25 = High Risk**

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R7M-524001-MST-001
Rev C5 20241209



PPE Requirements

Hard Hat ☒	Eye Protection ☒	Safety Footwear ☒	Gloves ☒	Coveralls ☐
Ear Defence ☒	Life Jacket ☒	Hi-Visibility Clothing ☒	Dust Mask ☐	Face Protection ☐

Created By

Name:	Andy Ramsey	Signature: 
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification	
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5			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	M	M	1	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	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation		

Task: **Grouting / Concreting Operations**

Project (Name and Ref):

Date: **09/12/2024**

Hazards (Potential to Cause Harm)	Who? (is at risk and how)	Initial Risk			Control Measures (Mitigating Factors)	Residual Risk			Responsibility
		S	P	R		S	P	R	
Grouting mixing operations - Burns & irritation from contact with grout; - Inhalation of cement dust; - Bodily injury from entanglement with rotating / moving machinery during operations & when cleaning; - Slips, trips and falls; - Open boreholes; - Bagged grout usage	All personnel involved in grouting and others in close proximity	4	3	12	- Trained & competent operators to use the grout mixer; - Plan the site layout taking into consideration the prevailing wind direction & project accessories; - All plant & grout hoses shall be inspected before being used. All damaged equipment shall be returned to the yard for repair; - Water hoses running across the work site must be adequately guarded; - Hoses to be adequately protected in operating area from other site plant and regularly inspected for damage; - Adequate guarding of all moving parts on pump. (Interlock switches must not be by-passed); - Stock piles of empty grout/concrete bags should be shielded, covered or kept damp to cut down airborne dust; - Ensure that hoses don't get kinked. Protect them against other site vehicles; - Complete isolation of machine before cleaning or maintenance. A second person will always be in attendance; - Good housekeeping. Ensure machine and mixing area is level and clear of debris. If possible, stone up muddy areas; keep hoses tidy and away from pedestrian areas; - Impervious PPE to be worn i.e. gauntlets, footwear, leggings (no shorts allowed) and arms and legs will be covered; - Appropriate masks to be worn. Ensure dust masks are effective by ensuring they are tight fitting & not repeatedly removed - Minimise dust by emptying dry materials into the mixer in a controlled manner. Do not shake bags. Avoid over-filling & erratic movement; - Stack cement in a suitable position to reduce the need for the	4	1	8	Project Management Grout/concrete mixer operator All Personnel

					• mixer operator to bend or stretch to lift cement bags; • Use mechanical means or team lifting to move the hoses; • Ensure not to allow any materials into the mixer that might cause entanglement.				
Bursting hose • Injury / damage to nearby project accessories • Burns & irritation from contact	Personnel nearby	4	4	16	• Additional controls in high-risk areas e.g. shrouding of hoses, positioning of pump, additional bunding to contain spillages & screens to protect from ejected material if applicable; • Ensure all equipment is frequently undergone maintenance inspection to prevent any potential inadvertent damages.	4	1	4	Site Supervisor
Issues with blockages • Hose whipping • Strike by high pressure air/grout	Grouting Team	4	3	12	• Stop pumping immediately & release pressure inside the hose as much as possible; • Treat system as though it is pressurised until confirmed otherwise. Do not under any circumstance manually open or attempt to open the hose under pressure; • Must wear goggles or full face visor – glasses do not provide adequate protection; • Use gravity to empty as much of grout as possible from the hose; • Protect people against uncontrolled hoses & ejected grout with minimum 10metre exclusion zone if reasonably practicable, secure hose to prevent whipping; • Compressed air should only be used as a last resort when clearing blockages.	4	1	4	Site Supervisor

Risk Rating = Severity multiplied by Probability: 1 to 4 = Low Risk 4 to 12 = Medium Risk 15 to 25 = High Risk

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R7M-524001-MST-001
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PPE Requirements

Hard Hat ☒	Eye Protection ☒	Safety Footwear ☒	Gloves ☒	Coveralls ☒
Ear Defence ☐	Life Jacket ☒	Hi-Visibility Clothing ☒	Mask ☒	Face Protection ☒

Created By

Name:	Andy Ramsey	Signature: 
Position:	Project Engineer	
Date:	09/12/2024	

Severity Classification						Probability					Probability Classification			Risk Classification	
Value	Severity	Injury/Illness	Health	Damage	Pollution	1	2	3	4	5					
1	Negligible	Minor first aid case or no specific treatment	No adverse health effects	No Cost	<1Ltr	L	L	L	M	M	1	Highly Improbable	A possibility but extremely remote chance of occurrence	LOW RISK	Operations may proceed with care
2	Minor	First aid or basic medical aid case	Minor adverse health effect (e.g. mild rash)	<£5,000	1-10Ltr	L	L	M	M	M	2	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	M	M	M	H	3	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	M	M	M	H	H	4	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	5	Frequent	Is likely (common occurrence) to occur once or more during every operation		

Appendix C – Variations Record Sheet

No.	Description	Revision
1		
2		

Red7Marine

Site Variations Approval Signatures

This form is to be signed **ONLY** after having read, understood and agreed to the procedures outlined above. This ensures everyone involved in the operation has a clear understanding of the required tasks and procedures helping to minimise Risks to all parties. All persons either directly or indirectly involved in the operation **MUST** sign the below.

NO OPERATION IS TO BE PERFORMED UNTIL ALL RELEVANT PARTIES HAVE SIGNED AND AGREED THE METHODOLOGY

Name	Operations Role	Company	Cert Expiry	Signature