LIST OF PMSC RISK ASSESSMENTS

KISK ASSESSMENT	KISK ASSESSMENT
Number	Name
FP PMSC RA (F)1	Forth River Passage - Standard Vessel
FP PMSC RA (F)2	Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth
FP PMSC RA (F)3	Port of Rosyth - Arrival/Sailing No.1 Rosyth Channel Buoy to Berth
FP PMSC RA (F)4	Port of Methil - Arrival/Sailing Methil Pilot Station to Berth
FP PMSC RA (F)5	Methil Energy Park - Arrival/Sailing Methil Pilot Station to Berth
FP PMSC RA (F)6	Port of Kirkcaldy - Arrival/Sailing Close Approaches of Dock to Berth
FP PMSC RA (F)7	Port of Burntisland - Arrival/Sailing Close Approaches of Dock to Berth
FP PMSC RA (F)8	Inverkeithing - Arrival/Sailing Saint Davids Beacon to Berth
FP PMSC RA (F)9	Braefoot Jetty - Arrival/Sailing Eastern Limits to Berth
FP PMSC RA (F)10	Port of Grangemouth - Arrival/Sailing Hen & Chickens to Berth
FP PMSC RA (F)11	Crombie Berthing/Sailing
FP PMSC RA (F)12	Hound Point - Arrival/Sailing Eastern Limits to Berth
FP PMSC RA (F)13	Cruise Vessels at Anchorage
FP PMSC RA (F)14	Forth - River Transit and Berthings/Sailings small comerical craft (tugs, workboats etc.)
FP PMSC RA (F)15	Cruise Vessel Tender Operations (Hound Point / Newhaven)
FP PMSC RA (F)16	Port of Leith - Arrival / Sailing Leith Approach Buoy to Berth with Jack-Up Barge on Leith Approaches
FP PMSC RA (T)1	Tay River Passage - Standard Vessels
FP PMSC RA (T)2	Port of Dundee - Arrival/Sailing Port Approaches to River Berth
FP PMSC RA (T)4	Tay Large Vessel Movement - Arrival/Sailing
FP PMSC RA (T)5	Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth
FP PMSC RA (T)6	Tay - River Transit and Berthings/Sailings small comerical craft (tugs, workboats etc.)
FP PMSC RA (F&T)1	Forth & Tay - Vessel at Anchor
FP PMSC RA (F&T)2	Forth & Tay - Vessel at Arichol
FP PMSC RA (F&T)2	Forth & Tay - Towage Operations Forth & Tay - Immobilised Vessels
FP PMSC RA (F&T)4	Forth & Tay - Bunkering Operations in Dock
FP PMSC RA (F&T)5	Forth & Tay - Bunkering Operations in Tidal Waters
FP PMSC RA (F&T)6	Forth & Tay - NAABSA Berths
FP PMSC RA (F&T)7	Forth & Tay - Diving Operations
FP PMSC RA (F&T)8	Forth & Tay - Bring Operations Forth & Tay - Recreational Events
FP PMSC RA (F&T)9	Forth & Tay - Necreational Events Forth & Tay - Underwater Cables & Pipelines
FP PMSC RA (F&T)10	Forth & Tay - Orderwater Cables & Pipelines Forth & Tay - Marine Pollution (Tidal Waters)
FP PMSC RA (F&T)10	Forth & Tay - Marine Pollution (Tidal Waters) Forth & Tay - Marine Pollution (Enclosed Dock)
II I WOCKA (I &I JI I	I Out a ray - Marine Pollution (Enclosed Dock)

PMSC RISK ASSESSMENT - RISK RANKING

Rank	: RISK ASSESSMENT - RISK RANKING Hazarriin	Hazard	Hazard Scoring
Kalik	HazaluiD	What can go wrong (Event leading to a consequence)	riazai d Scoring
2	FP PMSC RA (F&T) 02 - 1.3 Contact	Contact	8.125
4	FP PMSC RA (F) 10 - 1.2 Contact	Contact	7.375
14	FP PMSC RA (F) 12 - 1.2 Contact	Contact	6.5
3	FP PMSC RA (F&T) 02 - 1.5 Grounding FP PMSC RA (F) 02 - 1.2 Contact	Grounding Contact	8.375 7.875
4	FP PMSC RA (F) 02 - 1.2 Contact FP PMSC RA (F) 08 - 1.2 Contact	Contact	7.875
6	FP PMSC RA (F&T) 01 - 1.1 Dragging Anchor	Dragging Anchor	7.25
6	FP PMSC RA (T) 01 - 1.3 Grounding	Grounding	7.25
8	FP PMSC RA (T) 02 - 1.2 Contact	Contact	7
9	FP PMSC RA (T) 01 - 1.4 Sinking / Capsize FP PMSC RA (F) 07 - 1.1 Collision	Sinking / Capsize Collision	6.875 6.875
11	FP PMSC RA (F) 10 - 1.5 Fire / Explosion	Fire / Explosion	6.75
11	FP PMSC RA (F) 09 - 1.2 Contact	Contact	6.75
13	FP PMSC RA (T) 02 - 1.5 Fire / Explosion	Fire / Explosion	6.625
14	FP PMSC RA (F) 15 - 1.5 Fire / Explosion	Fire / Explosion	6.5
	FP PMSC RA (F&T) 02 - 1.1 Capsizing / Flooding	Capsizing / Flooding Contact	6.5
17	FP PMSC RA (F) 04 - 1.2 Contact FP PMSC RA (F) 02 - 1.1 Collision	Collision	6.375
	FP PMSC RA (F) 02 - 1.3 Grounding	Grounding	6.25
19	FP PMSC RA (F) 03 - 1.3 Grounding	Grounding	6.25
19	FP PMSC RA (F) 13 - 1.3 Grounding	Grounding	6.25
	FP PMSC RA (F&T) 07 - 1.1 - Swamping / turbulence / interaction	Swamping / interaction / turbulence	6.25
23	FP PMSC RA (F) 07 - 1.2 Contact FP PMSC RA (F&T) 04 - 1.2 Contact	Contact	6.125
25	FP PMSC RA (F&T) 04 - 1.2 Contact FP PMSC RA (F) 11 - 1.2 Contact	Contact	6.125
25	FP PMSC RA (F) 05 - 1.2 Contact	Contact	6
25	FP PMSC RA (T) 04 - 1.5 Fire / Explosion	Fire / Explosion	6
28	FP PMSC RA (F) 05 - 1.3 Grounding	Grounding	5.875
28	FP PMSC RA (F) 12 - 1.5 Fire / Explosion	Fire / Explosion	5.875
30	FP PMSC RA (F) 10 - 1.3 Grounding FP PMSC RA (F) 14 - 1.2 Contact	Grounding Contact	5.75
30	FP PMSC RA (F) 14 - 1.2 Contact FP PMSC RA (F) 16 - 1.2 Contact	Contact	5.75
	FP PMSC RA (F) 15 - 1.4 Sinking / Capsize	Sinking / Capsize	5.75
	FP PMSC RA (F) 07 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5.75
30	FP PMSC RA (F&T) 01 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	5.75
30	FP PMSC RA (F&T) 03 - 1.1 Contact Refer Also to FP PMSC RA (F&T) 1	Contact	5.75
37 38	FP PMSC RA (F) 07 - 1.3 Grounding	Grounding Sale 2010	5.625
38	FP PMSC RA (F&T) 06 - 1.3 Fire FP PMSC RA (F) 03 - 1.2 Contact	Dundee - Feb 2018 Contact	5.5 5.5
38	FP PMSC RA (F) 15 - 1.3 Grounding	Grounding	5.5
38	FP PMSC RA (F) 13 - 1.5 Fire / Explosion	Fire / Explosion	5.5
38	FP PMSC RA (T) 06 - 1.1 Collision	Collision	5.5
38	FP PMSC RA (F) 10 - 1.1 Collision	Collision	5.5
44	FP PMSC RA (F) 14 - 1.5 Fire / Explosion	Fire / Explosion Collision	5.375
44	FP PMSC RA (F) 14 - 1.1 Collision FP PMSC RA (F) 16 - 1.1 Collision	Collision	5.375 5.375
44	FP PMSC RA (F) 16 - 1.5 Fire	Fire	5.375
48	FP PMSC RA (F) 04 - 1.1 Collision (Fishing/Leisure Vessel)	Collision (Fishing/Leisure Vessel)	5.25
48	FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel)	Collision (Fishing/Leisure Vessel)	5.25
48	FP PMSC RA (F) 03 - 1.1 Collision	Collision	5.25
48 48	FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&T)7	Grounding Contact	5.25
	FP PMSC RA (F) 13 - 1.2 Contact FP PMSC RA (T) 06 - 1.2 Contact	Contact	5.25 5.25
48	FP PMSC RA (T) 04 - 1.1 Collision	Collision	5.25
55	FP PMSC RA (T) 01 - 1.5 Fire / Explosion	Fire / Explosion	5.125
	FP PMSC RA (F) 05 - 1.1 Collision	Collision	5
	FP PMSC RA (F) 06 - 1.2 Contact	Contact Fire / Explosion	5
56 56	FP PMSC RA (F) 09 - 1.5 Fire / Explosion ER PMSC RA (F) 11 - 1.1 Collision	Fire / Explosion Collsion	5
	FP PMSC RA (F) 11 - 1.1 Collision FP PMSC RA (F) 13 - 1.4 Sinking / Capsize	Sinking / Capsize	5
	FP PMSC RA (T) 05 - 1.5 Fire / Explosion	Fire / Explosion	5
56	FP PMSC RA (F) 11 - 1.5 Fire / Explosion	Fire / Explosion	5
	FP PMSC RA (T) 04 - 1.4 Sinking / Capsize	Sinking / Capsize	5
	FP PMSC RA (F&T) 10 - 1.1 Loss of Containment (Oil Product)	Loss of Containment (Oil Product)	5
65 66	FP PMSC RA (F) 15 - 1.2 Contact FR PMSC RA (FST) 10 11 Legs of Containment (Oil Broduct)	Contact Loss of Containment (Oil Product)	4.875
66	FP PMSC RA (F&T) 10 - 1.1 Loss of Containment (Oil Product) FP PMSC RA (F&T) 01 - 1.2 Contact	Contact	4.75 4.75
66	FP PMSC RA (F) 09 - 1.1 Collision	Collision	4.75
66	FP PMSC RA (T) 06 - 1.4 Sinking / Capsize	Sinking / Capsize	4.75
66	FP PMSC RA (T) 04 - 1.2 Contact	Contact	4.75
71	FP PMSC RA (F&T) 05 - 1.1 Collision with bunker vessel and receiving vessel	vessel	4.625
71 73	FP PMSC RA (F) 02 - 1.7 Loss of Dock Level (Lock Gate Operations)	Loss of Dock Level (Lock Gate Operations) Collision (Fishing/Leisure Vessel)	4.625
	FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&T)7	Grounding	4.5 4.5
	FP PMSC RA (F) 00 - 1.3 Grounding Relet Also to: FP PMSSC RA (F&T)// FP PMSC RA (F) 01 - 1.4 Sinking / Capsize	Sinking / Capsize	4.5
73		Loss of Containment (Oil Product)	4.5
	FP PMSC RA (F) 01 - 1.6 Loss of Containment (oil product)		
73 73 73	FP PMSC RA (F) 09 - 1.4 Sinking / Capsize	Sinking / Capsize	4.5
73 73 73 73	FP PMSC RA (F) 09 - 1.4 Sinking / Capsize FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product)	Sinking / Capsize Loss of Containment (Oil Product)	4.5
73 73 73 73 73	FP PMSC RA (F) 09 - 1.4 Sinking / Capsize FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 10 - 1.4 Sinking / Capsize	Sinking / Capsize Loss of Containment (Oil Product) Sinking / Capsize	4.5 4.5 4.5
73 73 73 73 73	FP PMSC RA (F) 09 - 1.4 Sinking / Capsize FP PMSC RA (F) 09 - 1.6 Loss of Containment (oil product)	Sinking / Capsize Loss of Containment (Oil Product)	4.5

7 PF PMSC RAT (1) 61-12 Consect 8 PF PMSC RAT (1) 62-12 Service (Consect 8 PF PMSC RAT (1) 62-14 Service (Consect 9 PF PMSC RAT (1) 62-14 Service (Consect 10 PF PMSC				
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Bispenger (Capazine Bispen				4.5
Big PMSC RA (PT) 10 - 1 4 Sentery Capetae				4.375
Be PP PMSC Ref. (Fig. 1-1.4 Serior) Capazia By PP MSC Ref. (Fig.			•	4.375
8 PP PMSC RX (F10 6.1 4 Selven Capation 8 PP PMSC RX (F10 6.1 4 Selven Capation 8 PP PMSC RX (F10 6.1 4 Selven Capation 9 PP PMSC RX (F10 6.1 4 Selven Capation 9 PP PMSC RX (F10 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F0 6.1 4 Selven Capation 9 PP PMSC RX (F1 6.1 4 Selven Capation 9 PMSC RX (F1 6.1 4 Selven Capa				4.375
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Sep PMSC Rd, Fig. 16 - 16 Loss of Containment (OI Products) Fire PMSC Rd, Fig. 16 - 16 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 17 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 17 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 13 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Containment (OI Product) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire PMSC Rd, Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire Fig. Fig. 10 - 14 Loss of Drock Lose (Gast Operations) Fire Fir				4.375
Ber PAMSC RA (F) 02 - 1.2 Fine Exposion Fine Fin			Sinking / Capsize	4.375
99 FEP MASS (RA FIGAL 1-1.3 Consuments) 91 FEP MASS (RA FIGAL 1-1.4 Loss of Containment (Oil Product) 191 FEP MASS (RA FIGAL 1-1.4 Loss of Containment (Oil Product) 191 FEP MASS (RA FIGAL 1-1.4 Loss of Containment (Oil Product) 191 FEP MASS (RA FIGAL 1-1.4 Loss of Containment (Oil Product) 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Simbar / Capazin 191 FEP MASS (RA FIGAL 1-1.4 Contain	85	FP PMSC RA (F) 15 - 1.6 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	4.375
9 PEPASS RA (F) 04 - 1.1 S. Grounding 9 PEPASS (RA (F) 16 - 1.6 Loss of Contamment (oil Product) 19 PEPASS (RA (F) 16 - 1.6 Loss of Contamment (oil Product) 19 PEPASS (RA (F) 16 - 1.6 Loss of Contamment (oil Product) 19 PEPASS (RA (F) 16 - 1.6 Loss of Contamment (oil Product) 19 PEPASS (RA (F) 12 - 1.1 Collision 19 PEPASS (RA (F) 12 - 1.1 Collision 19 PEPASS (RA (F) 12 - 1.1 Collision 19 PEPASS (RA (F) 15 - 1.1 Collision 19 PEPASS (RA (F) 15 - 1.1 Collision 19 PEPASS (RA (F) 16 - 1.1 Collision 10 PEPASS (RA (F) 16 - 1.1 Collision 11 PEPASS (RA (F) 16 - 1.1 Col			Fire / Explosion	4.375
98 PP PMSC RA (F) 14.1 L Sue of Contament (of product) 98 PP PMSC RA (F) 14.1 L Sue of Contament (of Product) 98 PP PMSC RA (F) 14.1 L Serving (Capatric 98 PP PMSC RA (F) 15.1 L Serving (Capatric 98 PP PMSC RA (F) 15.1 L Serving (Capatric 99 PMSC RA (F) 15.1 L Serving (Capatric 90 PMSC	93	FP PMSC RA (F&T) 02 - 1.2 Fire	Fire	4.25
99 PP MSC RA Fil 16.1 - Li Suns of Containment (Oil Products) 91 PP MSC RA Fil 17.1 - Li Sullinon (Casalze 93 PP MSC RA Fil 17.1 - Li Sullinon (Casalze 94 PP MSC RA Fil 17.1 - Li Sullinon (Casalze 95 PP MSC RA Fil 17.1 - Li Sullinon (Casalze 96 PP MSC RA Fil 18.1 - Li Sullinon (Casalze 97 PP MSC RA Fil 19.1 - Li Sullinon 97 PP MSC RA Fil 19.1 - Li Sullinon 98 PP MSC RA Fil 19.1 - Li Sullinon 199 PP MSC RA Fil 19.1	93	FP PMSC RA (F) 04 - 1.3 Grounding	Grounding	4.25
9 PP PMSC RA (F) 11-11 Collision Collision 9 PP PMSC RA (F) 12-11 Collision Collision 9 PP PMSC RA (F) 15-11 Collision 19 PP PMSC RA (F) 15-11 Collision 19 PP PMSC RA (F) 15-11 Collision 19 PP PMSC RA (F) 15-11 Collision 10 PP PMSC RA (F) 15-11 Collision 11 PP PMSC RA (F) 15-11 Collision 12 PP PMSC RA (F) 15-11 Collision 13 PP PMSC RA (F) 15-11 Collision 14 PP PMSC RA (F) 15-11 Collision 15 PP PMSC RA (F) 15-11 Collision 16 PP PMSC RA (F) 15-11 Collision 17 PMSC RA (F) 15-11 Co	93	FP PMSC RA (F) 14 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	4.25
9 FP PMSC RAT (19:1.15 Collision Collision Collision Collision Collision Collision Contact Con	93	FP PMSC RA (F) 16 - 1.6 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	4.25
98 P.P.MSC RALT (1) 5.1.1 Scillation Communication Collision Contract 99 P.P.MSC RALT (1) 5.1.1 Scillation Communication Collision Contract 130 P.P.MSC RALT (1) 1.1.2 Communication Collision Contract 130 P.P.MSC RALT (1) 1.1.2 Communication Collision Contract 130 P.P.MSC RALT (1) 1.1.2 Communication Collision Colli	93	FP PMSC RA (F) 11 - 1.4 Sinking / Capsize	Sinking / Capsize	4.25
99 FP PMSC RAL F1 50-1-1 Collision Oblision Obli			Collision	4.25
99 FP PMSC RAL FD 13-12 Collision 109 FP PMSC RAL FD 13-12 Contract 101 FP PMSC RAL FD 13-12 Contract 101 FP PMSC RAL FEB 102-1-12 Contract 102 FP PMSC RAL FB 102-1-12 Collision 102 FP PMSC RAL FB 102-1-12 Collision 103 FP PMSC RAL FD 13-12 Contract 104 FP PMSC RAL FD 13-12 Contract 105 FP PMSC RAL FD 13-12 Contract 105 FP PMSC RAL FD 13-12 Contract 106 FP PMSC RAL FD 13-12 Contract 107 FP PMSC RAL FD 13-12 Contract 108 FP PMSC RAL FD 13-12 Contract 109 FP PMSC RAL FD 13-12 Contract 109 FP PMSC RAL FD 13-12 Contract 109 FP PMSC RAL FD 13-12 Contract 100 FP PMSC RAL FD 13-13 Contract 101 FP PMSC RAL FD 13-13 Con			Sinking / Capsize	4.125
99 PP MSC RA F10 1-1.3 Contact 100 PP MSC RA F3 D1 1-1.3 Contact 101 PP MSC RA F3 D1 1-1.3 Contact 102 PP MSC RA F3 D1 1-1.3 Collision 103 PP MSC RA F3 D1 1-1.3 Collision 105 PP MSC RA F3 D1 1-1.3 Collision 105 PP MSC RA F3 D1 1-1.2 Collision 106 PP MSC RA F3 D1 1-1.2 Collision 107 PP MSC RA F3 D1 1-1.2 Collision 108 PP MSC RA F3 D1 1-1.2 Collision 109 PP MSC RA F3 D1 1-1.2 Collision 109 PP MSC RA F3 D1 1-1.2 Collision 100 PP MSC RA F3 D1 1-1.2 Collision 101 PP MSC RA F3 D1 1-1.2 Collision 102 PP MSC RA F3 D1 1-1.2 Collision 103 PP MSC RA F3 D1 1-1.2 Collision 104 PP MSC RA F3 D1 1-1.2 Collision 105 PP MSC RA F3 D1 1-1.2 Collision 105 PP MSC RA F3 D1 1-1.2 F3 Collision 106 PP MSC RA F3 D1 1-1.2 F3 Collision 107 PP MSC RA F3 D1 1-1.2 F3 Collision 108 PP MSC RA F3 D1 1-1.2 F3 Collision 109 PP MSC RA F3 D1 1-1.2 Collision 109 PP MSC RA F3 D1 1-1.3 Collision 109 PP MSC RA F3 D1 1-1.3 Collision 100 PP MSC RA F3 D1 1-1.3 C			-	4.125
300 PP PMSC RA (FAT) 10 - 1.4 Enking / Capasize Sinking / Capasize Collision Col				4.125
100 PP PMSC RA (PRT) 17.4 Collision Collision Collision Dock Level (Lock Gate Operations) 100 PP PMSC RA (PT) 17.1 Contract Con				4
100 PP PMSC RA (Fin Dr. 1-7 Loss of Dook Level (Lock Gate Operations) Loss of Dook Level (Lock Gate Operations)				4
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131 FP PMSC RA (FD 10 - 1.5 Fire / Explosion Fire / Explosion 131 FP PMSC RA (FD 10 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product)			•	4
133 FP PMSC RA (FD 2-1.6 Loss of Containment (oil product) 133 FP PMSC RA (F) 03-1.3 Grounding 134 FP PMSC RA (F) 09-1.3 Grounding 135 FP PMSC RA (F) 10-1.6 Loss of Containment (oil product) 136 FP PMSC RA (F) 10-1.6 Loss of Containment (oil product) 137 FP PMSC RA (F) 10-1.6 Loss of Containment (Oil Product) 138 FP PMSC RA (F) 10-1.6 Loss of Containment (Oil Product) 139 FP PMSC RA (F) 10-1.1 Collision 130 FP PMSC RA (F) 10-1.1 Collision (Containment (Oil Product) 130 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 131 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 132 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 132 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 133 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 134 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 135 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 136 FP PMSC RA (FX) 10-1.1 Collision (Containment (Oil Product) 137 FP PMSC RA (FX) 10-1.1 Collision (Collision (Containment (Oil Product)) 138 FP PMSC RA (FX) 10-1.1 Collision (Collision (Coll				4
113 FP PMSC RA (F) 03 - 1.6 Loss of Containment (oil product) 113 FP PMSC RA (F) 10 - 1.3 Grounding 113 FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product) 113 FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product) 113 FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product) 114 FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil Products) 115 FP PMSC RA (F) 10 - 1.1 Collision 116 FP PMSC RA (F) 10 - 1.1 Collision 117 FP PMSC RA (FAT) 08 - 1.1 Collision Containment (Oil Products) 118 FP PMSC RA (FAT) 08 - 1.1 Collision Containment (Oil Products) 119 FP PMSC RA (FAT) 08 - 1.2 Contact 110 FP PMSC RA (FAT) 08 - 1.2 Contact 110 FP PMSC RA (FAT) 08 - 1.2 Contact 111 FP PMSC RA (FAT) 08 - 1.2 Contact 112 FP PMSC RA (FAT) 08 - 1.2 Contact 113 FP PMSC RA (FAT) 08 - 1.2 Contact 114 FP PMSC RA (FAT) 08 - 1.2 Contact 115 FP PMSC RA (FAT) 08 - 1.2 Contact 116 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 117 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 118 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 119 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 110 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 110 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 111 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 112 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 113 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 114 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 115 FP PMSC RA (FAT) 08 - 1.2 Containment (oil product) 116 FP PMSC RA (FAT) 08 - 1.3 Containment (oil product) 117 FP PMSC RA (FAT) 08 - 1.4 Loss of Containment (oil product) 118 FP PMSC RA (FAT) 08 - 1.4 Loss of Containment (oil product) 119 FP PMSC RA (FAT) 08 - 1.4 Loss of Containment (oil product) 110 FP PMSC RA (FAT) 08 - 1.4 Loss of Containment (oil product) 111 FP PMSC RA (FAT) 08 - 1.4 Hull Damage 112 FP PMSC RA (FAT) 08 - 1.4 Hull Damage 113 FP PMSC RA (FAT) 08 - 1.4 Hull Damage 114 FP PMSC RA (FAT) 08 - 1.4 Hull Damage 115 FP PMSC RA (FAT) 08 - 1.4 Fire Explosion 116 FP PMSC RA (FAT) 08 - 1.4 Loss of Cont				3.875
131 FP PMSC RA (F) 09 - 1.3 Grounding 131 FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product) 131 FP PMSC RA (F) 10 - 1.6 Loss of Containment (Oil Products) 131 FP PMSC RA (F) 10 - 1.6 Loss of Containment (Oil Products) 131 FP PMSC RA (F) 05 - 1.1 Collision 131 FP PMSC RA (FAT) 05 - 1.1 Collision Contact 132 FP PMSC RA (FAT) 05 - 1.1 Collision Contact 133 FP PMSC RA (FAT) 05 - 1.2 Contact 134 FP PMSC RA (FAT) 05 - 1.2 Contact 135 FP PMSC RA (FAT) 05 - 1.2 Contact 136 FP PMSC RA (FAT) 05 - 1.2 Contact 137 FP PMSC RA (FAT) 05 - 1.2 Contact 138 FP PMSC RA (FAT) 05 - 1.2 Contact 139 FP PMSC RA (FAT) 05 - 1.2 Contact 140 Contact 151 FP PMSC RA (FAT) 05 - 1.2 Contact 152 FP PMSC RA (FAT) 05 - 1.2 Contact 153 FP PMSC RA (FAT) 05 - 1.2 Contact 154 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 155 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 156 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 157 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 158 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 159 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 08 - 1.4 Sinking / Containment (oil product) 151 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 151 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 151 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 151 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize 151 FP PMSC RA (F) 08 - 1.4 Fire / Explosion 151 FP PMSC RA (F) 08 - 1.4 Fire / Explosion 152 FP PMSC RA (F) 08 - 1.4 Fire / Explosion 153 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 154 FP PMSC RA (F) 08 - 1.5 Fire / Explosion 155 FP PMSC				3.875
133 FP PMSC RA (F) 10 - 1.6 Loss of Containment (Oil product) Loss of Containment (Oil Products)				3.875
133 FP PMSC RA (T) 04-1.6 Loss of Containment (Oil Products) 133 FP PMSC RA (F8 T) 05-1.1 Collision 133 FP PMSC RA (F8 T) 05-1.1 Collision / contact 134 FP PMSC RA (F8 T) 05-1.3 Loss of Containment (Oil Products) 135 FP PMSC RA (F8 T) 05-1.3 Loss of Containment (Oil Products) 136 FP PMSC RA (F8 T) 05-1.2 Contact 137 FP PMSC RA (F8 T) 05-1.2 Contact 137 FP PMSC RA (F8 T) 05-1.2 Contact 138 FP PMSC RA (F8 T) 05-1.2 Contact 139 FP PMSC RA (F8 T) 05-1.2 Contact 130 FP PMSC RA (F8 T) 05-1.2 Contact 130 FP PMSC RA (F8 T) 05-1.2 Contact 131 FP PMSC RA (T) 02-1.1 Collision 131 FP PMSC RA (T) 02-1.6 Loss of Containment (oil product) 132 FP PMSC RA (T) 02-1.5 Fire / Explosion 133 FP PMSC RA (T) 03-1.5 Fire / Explosion 134 FP PMSC RA (T) 03-1.2 Grounding Grounding 135 FP PMSC RA (T) 03-1.2 Grounding Grounding Grounding 136 FP PMSC RA (F8 T) 03-1.2 Grounding Grounding Grounding Grounding 137 FP PMSC RA (F8 T) 03-1.1 Collision 138 FP PMSC RA (F0 T) 1-1.1 Collision 139 FP PMSC RA (F0 T) 1-1.1 Collision 149 FP PMSC RA (F0 T) 1-1.1 Collision 150 FP PMSC RA (F0 T) 1-1.1 Collision 151 FP PMSC RA (F0 T) 1-1.1 Collision 152 FP PMSC RA (F0 T) 1-1.1 Collision 153 FP PMSC RA (T) 03-1.2 Grounding Grounding Grounding 154 FP PMSC RA (T) 03-1.3 Grounding Grounding Grounding Grounding 155 FP PMSC RA (T) 03-1.4 Containment (oil product) 156 FP PMSC RA (T) 03-1.3 Grounding Grounding Grounding Grounding 157 FP PMSC RA (T) 03-1.4 Sinking / Capsize 158 FP PMSC RA (T) 03-1.4 Sinking / Capsize 159 FP PMSC RA (T) 03-1.4 Sinking / Capsize 150 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 151 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 152 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 153 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 154 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 155 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 156 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 157 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 158 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 159 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 150 FP PMSC RA (F0 T) 03-1.4 Sinking / Capsize 1				3.875
131 FP PMSC RA (F81) 05 - 1.1 Collision			' '	3.875
131 FP PMSC RA (FAT) 08 - 1.1 - Collision / contact Loss of Containment (Oil Product)			Loss of Containment (Oil Products)	3.875
121 F.P.PMSC, RA (F&T) 05 - 1.3 Loss of Containment (Oil Products) Loss of Containment (Oil Product)	113	FP PMSC RA (T) 05 - 1.1 Collision	Collision	3.875
121 F.P. PMSC RA (F&T) 06 - 1,2 Contact	113	FP PMSC RA (F&T) 08 - 1.1 - Collision / contact	Collision / Contact	3.875
221 F.P. PMSC RA (FST) 05 - 1.2 Contact Contact	121	FP PMSC RA (F&T) 05 - 1.3 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	3.75
221 F.P. PMSC RA (T) 02 - 1.1 Collision Collision Collision Loss of Containment (Oil Product)	121	FP PMSC RA (F&T) 06 - 1.2 Capsize / Flooding	Capsizing / Flooding	3.75
1212 FP PMSC RA (T) 02 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product)	121	FP PMSC RA (F&T) 05 - 1.2 Contact	Contact	3.75
121 FP PMSC RA (F) 07 - 1.5 Fire / Explosion Fire / Explosion Fire / Explosion 121 FP PMSC RA (F) 08 - 1.2 - Swamping / interaction / turbulence Swamping / interaction / turbulence 122 FP PMSC RA (F81) 08 - 1.2 - Swamping / interaction / turbulence Swamping / interaction / turbulence 123 FP PMSC RA (F81) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F81) 1 Grounding 124 FP PMSC RA (F) 01 - 1.1 Collision Collision 125 FP PMSC RA (F) 01 - 1.1 Collision Collision 126 FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 127 FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 128 FP PMSC RA (F) 01 - 1.3 Grounding Grounding Grounding Grounding 134 FP PMSC RA (F) 01 - 1.3 Grounding	121	FP PMSC RA (T) 02 - 1.1 Collision	Collision	3.75
121 FP PMSC RA (F) 07 - 1.5 Fire / Explosion Fire / Explosion Fire / Explosion 121 FP PMSC RA (F) 04 - 1.3 Grounding Grounding 122 FP PMSC RA (F8T) 08 - 1.2 - Swamping / interaction / turbulence Swamping / interaction / turbulence 129 FP PMSC RA (F8T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F8T) 1 Grounding 129 FP PMSC RA (F) 01 - 1.1 Collision Collision 129 FP PMSC RA (F) 01 - 1.1 Collision Collision 129 FP PMSC RA (F) 01 - 1.1 Collision Collision 129 FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 120 FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 120 FP PMSC RA (F8T) 01 - 1.3 Grounding Grounding Grounding 134 FP PMSC RA (F8T) 01 - 1.3 Grounding Grounding Grounding 134 FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (F8T) 05 - 1.4 Hull Damage Hull Damage Hull Damage 140 FP PMSC RA (F8T) 06 - 1.4 Hull Damage Hull Damage Hull Damage Hull Damage Hull Damage Hull Damage Fire / Explosion 140 FP PMSC RA (F8T) 04 - 1.7 Allision Allision Allision 140 FP PMSC RA (F8T) 04 - 1.3 Loss of Containment (oil product) Loss of Containment (Oil Product) 145 FP PMSC RA (F8T) 04 - 1.3 Loss of Containment (oil product) Loss of Containment (Oil Product) 145 FP PMSC RA (F8T) 07 - 1.2 - Collision / Contact Collision / Contact 146 FP PMSC RA (F8T) 07 - 1.3 Loss of Containment (Oil Product) Loss of Containment (Oil Product) 147 FP PMSC RA (F8T) 07 - 1.2 - Collision / Contact Collision / Fire / Explosion 148 FP PMSC RA (F8T) 07 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F8T) 07 - 1.5 Fire / Explosion Fire /	121	FP PMSC RA (T) 02 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3.75
121 FP PMSC RA (F&T) 08 - 1.2 - Swamping / interaction / turbulence Swamping / interaction / turbulence 129 FP PMSC RA (F&T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&T) 1 Grounding			Fire / Explosion	3.75
1212 FP PMSC RA (F&T) 08 - 1.2 - Swamping / interaction / turbulence Swamping / interaction / turbulence 129 FP PMSC RA (F&T) 01 - 1.1 Collusion Collision Colli	121	FP PMSC RA (T) 04 - 1.3 Grounding	Grounding	3.75
129 EP PMSC RA (F&T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&T) 1	121	FP PMSC RA (F&T) 08 - 1.2 - Swamping / interaction / turbulence		3.75
129 FP PMSC RA (F) 01 - 1.1 Collision	129	FP PMSC RA (F&T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&T) 1		3.625
129 FP PMSC RA (F) 01 - 1.1 Collision Collision Loss of Containment (Oil Product) Loss of Containment (Oil Product) 129 FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 134 FP PMSC RA (F&T) 01 - 1.3 Grounding Grounding Grounding Grounding 134 FP PMSC RA (F) 01 - 1.3 Grounding Groundin	129	FP PMSC RA (F) 01 - 1.1 Collision		3.625
129 FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 129 FP PMSC RA (T) 06 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 134 FP PMSC RA (F8T) 01 - 1.3 Grounding Grounding 134 FP PMSC RA (F) 01 - 1.3 Grounding Grounding 134 FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 05 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 05 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 02 - 1.3 Grounding Grounding 140 FP PMSC RA (F8T) 06 - 1.4 Hull Damage Hull Damage 140 FP PMSC RA (F8T) 05 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (F8T) 04 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (F8T) 04 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Allision 140 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 141 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 142 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 143 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 144 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 146 FP PMSC RA (F8T) 04 - 1.5 Fire / Explosion Fire / Explosion 147 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 148 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 149 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 140 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 141 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F8T) 05 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F0 0			Collision	3.625
129 FP PMSC RA (T) 06 - 1.6 Loss of Containment (Oil product) Loss of Containment (Oil Product) 134 FP PMSC RA (FRT) 01 - 1.3 Grounding Grounding 134 FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 06 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize 134 FP PMSC RA (FST) 06 - 1.4 Hull Damage Hull Damage 140 FP PMSC RA (FST) 05 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (FST) 05 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (FST) 04 - 1.4 Fire/Explosion Fire / Explosion 140 FP PMSC RA (FST) 04 - 1.7 Allision Allision 141 FP PMSC RA (FST) 04 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (FST) 01 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (FST) 04 - 1.3 Loss of Containment (Oil Product) 145 FP PMSC RA (FST) 04 - 1.3 Fire / Explosion Fire / Explosion 145 FP PMSC RA (FST) 04 - 1.3 Fire / Explosion Fire / Explosion 145 FP PMSC RA (FST) 09 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (FST) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (FST) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (FST) 09 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (FST) 09 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 -			Loss of Containment (Oil Product)	3.625
134 FP PMSC RA (F&T) 01 - 1.3 Grounding Groundin				3.625
134 FP PMSC RA (F) 01 - 1.3 Grounding Grounding Grounding Grounding FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Si				3.52
134 FP PMSC RA (F) 04 - 1.4 Sinking / Capsize Sinking / Caps				3.5
134 FP PMSC RA (F) 06 - 1.4 Sinking / Capsize Sinking / Caps			ū	3.5
134 FP PMSC RA (F) 08 - 1.4 Sinking / Capsize Sinking / Capsize Grounding Grounding Grounding Hull Damage FP PMSC RA (F&T) 05 - 1.4 Fire/Explosion Fire / Explosion Fire /				3.5
134 FP PMSC RA (T) 02 - 1.3 Grounding Grounding Grounding Grounding Hull Damage Hull D				3.5
140 FP PMSC RA (F&T) 06 - 1.4 Hull Damage Hull Damage Hull Damage Hull Damage Hull Damage Fre / Explosion Fire / Explosion Hull Damage Hull Damage Fire / Explosion Fire / Explosion Fire / Explosion Fire / Explosion Hull Damage Hull D		TT T MOO TOT (1) CO TIT OF MAINING / CODOLEC	3 1	3.3
140 FP PMSC RA (F&T) 05 - 1.4 Fire/Explosion Fire / Explosion				3.5
140 FP PMSC RA (F&T) 04 - 1.4 Fire/Explosion Fire / Explosion Allision Allision Allision Allision Allision FP PMSC RA (T) 04 - 1.7 Allision Loss of Containment (Oil Product) Loss of Containment (Oil Product) Loss of Containment (Oil Product) 145 FP PMSC RA (F&T) 01 - 1.5 Fire / Explosion			3	3.375
140 FP PMSC RA (T) 04 - 1.7 Allision Allision Allision Loss of Containment (Oil Product) 145 FP PMSC RA (FRT) 01 - 1.6 Loss of Containment (Oil Product) Loss of Containment (Oil Product) 145 FP PMSC RA (FRT) 04 - 1.3 Loss of Containment (Oil Products) Loss of Containment (Oil Product) 145 FP PMSC RA (FRT) 04 - 1.3 Loss of Containment (Oil Products) Loss of Containment (Oil Product) 145 FP PMSC RA (F) 05 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F) 05 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F, 07 - 1.2 - Collision / contact 150 FP PMSC RA (FRT) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion 150 FP PMSC RA (FRT) 09 - 1.1 Contact 150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding			-	3.375
140 FP PMSC RA (T) 01 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 145 FP PMSC RA (F&T) 01 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F&T) 04 - 1.3 Loss of Containment (Oil Products) Loss of Containment (Oil Product) 145 FP PMSC RA (F) 02 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F) 05 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F) 07 - 1.2 - Collision / contact Collision / Contact 150 FP PMSC RA (F&T) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F&T) 09 - 1.1 Contact 150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding Grounding Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding				3.375
145 FP PMSC RA (F&T) 01 - 1.5 Fire / Explosion				3.375
145 FP PMSC RA (F&T) 04 - 1.3 Loss of Containment (Oil Products) 145 FP PMSC RA (F\(\text{0}\) 2 - 1.5 Fire / Explosion 145 FP PMSC RA (F\(\text{0}\) 02 - 1.5 Fire / Explosion 145 FP PMSC RA (F\(\text{0}\) 05 - 1.5 Fire / Explosion 145 FP PMSC RA (F\(\text{0}\) 07 - 1.2 - Collision / contact 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.1 Contact 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.1 Contact 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.1 Contact 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.1 Contact 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.1 Contact 150 FP PMSC RA (F\(\text{0}\) T) 09 - 1.1 Contact 150 FP PMSC RA (F\(\text{0}\) T) 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{0}\) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{0}\) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{0}\) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{0}\) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{0}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F\(\text{1}\) 11.3 Grounding				3.375
145 FP PMSC RA (F) 02 - 1.5 Fire / Explosion Fire / Explosion / Contact Collision / Contact Loss of Containment / Power / Communication Loss of Containment / Power / Communication Fire / Explosion Fire / Expl				3.25
145 FP PMSC RA (F) 05 - 1.5 Fire / Explosion Fire / Explosion Fire / Explosion 145 FP PMSC RA (F, 05 - 1.5 Fire / Explosion Fire / Explosion 145 FP PMSC RA (F, 07 - 1.2 - Collision / contact 150 FP PMSC RA (F, 07 - 1.2 - Collision / contact 150 FP PMSC RA (F, 07 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (F, 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F, 07 - 1.1 Contact 150 FP PMSC RA (F, 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F, 07 - 1.5 Fire / Explosion 150 FP PMSC RA (F, 08 - 1.5 Fire / Explosion 150 FP PMSC RA (F, 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F, 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F, 07 - 1.1 Sire / Explosion 150 FP PMSC RA (F,				3.25
145 FP PMSC RA (F&T) 07 - 1.2 - Collision / contact 150 FP PMSC RA (F&T) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (F&T) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 101 - 1.3 Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding 150			·	3.25
150 FP PMSC RA (F&T) 09 - 1.4 Loss of Containment / Power / Communication 150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion 150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion 150 FP PMSC RA (F&T) 09 - 1.1 Contact 150 FP PMSC RA (F&T) 09 - 1.1 Contact 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 104 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding 150 FP PMSC RA (F) 11 - 1.3 Grounding			Fire / Explosion	3.25
150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F&T) 09 - 1.1 Contact Contact 150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding				3.25
150 FP PMSC RA (T) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F8T) 09 - 1.1 Contact Contact 150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding			Loss of Containment / Power / Communication	3.125
150 FP PMSC RA (F&T) 09 - 1.1 Contact Contact 150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding			Fire / Explosion	3.125
150 FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) 150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding				3.125
150 FP PMSC RA (F) 03 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding	150		Loss of Containment (Oil Product)	3.125
150 FP PMSC RA (F) 04 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding	150		Fire / Explosion	3.125
150 FP PMSC RA (F) 06 - 1.5 Fire / Explosion Fire / Explosion 150 FP PMSC RA (F) 11 - 1.3 Grounding Grounding			·	3.125
	150	FP PMSC RA (F) 06 - 1.5 Fire / Explosion		3.125
				3.125
150 FP PMSC RA (T) 05 - 1.3 Grounding Grounding	150	FP PMSC RA (T) 05 - 1.3 Grounding		3.125
150 FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product) 160 FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product) Loss of Containment (Oil Product)				3.125
160] FP PMSC RA (F) U6 - 1.6 Loss of Containment (oil product) 160] FP PMSC RA (F) U6 - 1.6 L				3
100 FP PMSC RA (T) 06 - 1.3 Grounding Grounding Grounding				3
163 FP PMSC RA (F&T) 09 - 1.3 Fire / Explosion				2.75
1 22 2 2				

FORTH PORTS LIMITED	Document ID	Original Date
	FP PMSC (R) 1/03	Jul-13
Risk Ranking	Review Due	Revised By / Date
	Ongoing	MM / August 2015

PMSC RISK ASSESSMENT - RISK RANKING

			Risk s	Most cored a	Likely Residu	ıal level	Risk	scored	i at Res	idual	
Rank	HazardID	Hazard What can go wrong (Event leading to a consequence)	People	Property	Environment	Business	People	Property	Environment	Business	Hazard Scoring
6	FP PMSC RA (F&T) 01 - 1.1 Dragging Anchor	Dragging Anchor	5	5	ы 5	5	8	10	ង 10	_	7.25
66	FP PMSC RA (F&T) 01 - 1.2 Contact	Contact	4	6	4	4	5	5	5	5	4.75
134 102	FP PMSC RA (F&T) 01 - 1.3 Grounding FP PMSC RA (F&T) 01 - 1.4 Sinking / Capsize	Grounding Sinking / Capsize	2	4	2	4	1	5	5	5	3.5
145	FP PMSC RA (F&T) 01 - 1.5 Fire / Explosion	Fire / Explosion	2	2	1	1	5	5	5	5	3.25
30	FP PMSC RA (F&T) 01 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3	3	3	3	4	10	10		5.75
14 93	FP PMSC RA (F&T) 02 - 1.1 Capsizing / Flooding FP PMSC RA (F&T) 02 - 1.2 Fire	Capsizing / Flooding Fire	3	3 4	3	3	10	10	10	10	6.5 4.25
2	FP PMSC RA (F&T) 02 - 1.3 Contact	Contact	5	10	5	10	10	10	5	10	8.125
102	FP PMSC RA (F&T) 02 - 1.4 Collision	Collision	2	4	2	4	5	5	5	5	4
129	FP PMSC RA (F&T) 02 - 1.5 Grounding FP PMSC RA (F&T) 03 - 1.1 Contact Refer Also to FP PMSC RA (F&T) 1	Grounding Contact	6 3	9	3	9	10	10 5	10	10	8.375 3.625
30	FP PMSC RA (F&T) 03 - 1.2 Grounding Refer Also to FP PMSC RA (F&T) 1	Grounding	4	6	4	2	6	8	8	8	5.75
73 23	FP PMSC RA (F&T) 04 - 1.1 Collision with bunker vessel and receiving vessel	Collision with bunker vessel and receiving vessel	6	6	2	2	5	5	5	5	4.5 6.125
145	FP PMSC RA (F&T) 04 - 1.2 Contact FP PMSC RA (F&T) 04 - 1.3 Loss of Containment (Oil Products)	Contact Loss of Containment (Oil Product)	3	3	3	3	1	4	4	5	3.25
140	FP PMSC RA (F&T) 04 - 1.4 Fire/Explosion	Fire / Explosion	2	2	2	1	5	5	5	5	3.375
71 121	FP PMSC RA (F&T) 05 - 1.1 Collision with bunker vessel and receiving vessel FP PMSC RA (F&T) 05 - 1.2 Contact	Collision with bunker vessel and receiving vessel Contact	6	6	3	3	4	5	5	5	4.625
121	FP PMSC RA (F&T) 05 - 1.2 Contact FP PMSC RA (F&T) 05 - 1.3 Loss of Containment (Oil Products)	Loss of Containment (Oil Product)	3	3	3	6	1	4	5	5	3.75
140	FP PMSC RA (F&T) 05 - 1.4 Fire/Explosion	Fire / Explosion	2	2	2	1	5	5	5	5	3.375
121	FP PMSC RA (F&T) 06 - 1.2 Capsize / Flooding	Capsizing / Flooding	2	2	4	2	5	5	5	5	3.75
38 140	FP PMSC RA (F&T) 06 - 1.3 Fire FP PMSC RA (F&T) 06 - 1.4 Hull Damage	Fire Hull Damage	6	9	3 1	6 3	5 5	5	5 5	5 5	5.5 3.375
19	FP PMSC RA (F&T) 07 - 1.1 - Swamping / turbulence / interaction	Swamping / interaction / turbulence	9	6	3	6	10	4	2	10	6.25
145 113	FP PMSC RA (F&T) 07 - 1.2 - Collision / contact EP PMSC RA (F&T) 08 - 1.1 - Collision / contact	Collision / Contact	3	2	1	2	5	5	3	5	3.25
113	FP PMSC RA (F&T) 08 - 1.1 - Collision / contact FP PMSC RA (F&T) 08 - 1.2 - Swamping / interaction / turbulence	Collision / Contact Swamping / interaction / turbulence	6	2	2	6	5	2	3	5 5	3.875 3.75
150	FP PMSC RA (F&T) 09 - 1.1 Contact	Contact	2	2	2	2	2	5	5	5	3.125
163	FP PMSC RA (F&T) 09 - 1.3 Fire / Explosion	Fire / Explosion	1	1	1	1	3	5	5	5	2.75
150 66	FP PMSC RA (F&T) 09 - 1.4 Loss of Containment / Power / Communication EP PMSC RA (F&T) 10 - 1.1 Loss of Containment (Oil Product)	Loss of Containment / Power / Communication Loss of Containment (Oil Product)	2	2	2	2	2	5	5	5	3.125
56	FP PMSC RA (F&T) 10 - 1.1 Loss of Containment (Oil Product) FP PMSC RA (F&T) 11 - 1.1 Loss of Containment (Oil Product)	Loss of Containment (Oil Product) Loss of Containment (Oil Product)	5	5 5	5	5 5	3 5	5	5	5	4.75
129	FP PMSC RA (F) 01 - 1.1 Collision	Collision	2	4	2	2	5	5	5	4	3.625
102 134	FP PMSC RA (F) 01 - 1.2 Contact	Contact	2	6	4	2	5	5	4	4	4
73	FP PMSC RA (F) 01 - 1.3 Grounding FP PMSC RA (F) 01 - 1.4 Sinking / Capsize	Grounding Sinking / Capsize	1	3	2	3	5	5	5	4 4	3.5
113	FP PMSC RA (F) 01 - 1.5 Fire / Explosion	Fire / Explosion	3	4	3	3	5	5	3	5	3.875
73	FP PMSC RA (F) 01 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	2	4	6	6	3	5	5	5	4.5
17	FP PMSC RA (F) 02 - 1.1 Collision FP PMSC RA (F) 02 - 1.2 Contact	Collision Contact	6	9 10	10	10	6	6	6	6	6.375 7.875
19	FP PMSC RA (F) 02 - 1.3 Grounding	Grounding	3	6	6	3	6	8	8	10	6.25
85	FP PMSC RA (F) 02 - 1.4 Sinking / Capsize	Sinking / Capsize	4	4	5	4	4	4	5	5	4.375
145 113	FP PMSC RA (F) 02 - 1.5 Fire / Explosion FP PMSC RA (F) 02 - 1.6 Loss of Containment (oil product)	Fire / Explosion Loss of Containment (Oil Product)	3	3	3	2	4	4	3	4	3.25 3.875
71	FP PMSC RA (F) 02 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 02 - 1.7 Loss of Dock Level (Lock Gate Operations)	Loss of Dock Level (Lock Gate Operations)	3	3	3	9	5	5	4	5	4.625
48	FP PMSC RA (F) 03 - 1.1 Collision	Collision	4	6	4	4	6	6	6	6	5.25
38 19	FP PMSC RA (F) 03 - 1.2 Contact	Contact Grounding	5	5	5	5	6	6	6	6	5.5
85	FP PMSC RA (F) 03 - 1.3 Grounding FP PMSC RA (F) 03 - 1.4 Sinking / Capsize	Sinking / Capsize	3	6 4	6	3	6	8 4	8	10	6.25 4.375
150	FP PMSC RA (F) 03 - 1.5 Fire / Explosion	Fire / Explosion	3	3	3	2	4	4	3	3	3.125
113	FP PMSC RA (F) 03 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3	3	6	6	2	3	4	4	3.875
48 17	FP PMSC RA (F) 04 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 04 - 1.2 Contact	Collision (Fishing/Leisure Vessel) Contact	4	10	2	4	10	6	6	6	5.25 6.375
93	FP PMSC RA (F) 04 - 1.3 Grounding	Grounding	2	4	4	2	4	6	6	6	4.25
134	FP PMSC RA (F) 04 - 1.4 Sinking / Capsize	Sinking / Capsize	4	3	2	3	5	3	4	4	3.5
150	FP PMSC RA (F) 04 - 1.5 Fire / Explosion FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product)	Fire / Explosion Loss of Containment (Oil Product)	3	3	3	2	4	4	3	3	3.125
102	FP PMSC RA (F) 04 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 04 - 1.7 Loss of Dock Level (Lock Gate Operations)	Loss of Dock Level (Lock Gate Operations)	3								
56		Lood of Book Lover (Look Oato operations)	3	3	3	3	2	6	3 6	3 6	3.625 4
	FP PMSC RA (F) 05 - 1.1 Collision	Collision	3 4	3 4	3	3	2	6	6 6	6 6	
	FP PMSC RA (F) 05 - 1.2 Contact	Collision Contact	3 4 8	3 4 8	3 4	3 4 4	6	6 6	6 6	6 6 6	3.625 4 5 6
	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding	Collision	3 4 8 3	3 4 8 6	3 4 4 6	3 4 4 6	6 6	6 6 6	3 6 6 6 6	6 6 6 8	3.625 4 5 6 5.875
28 85 145	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion	Collision Contact Grounding Sinking / Capsize Fire / Explosion	3 4 8 3 4	3 4 8 6 4	3 4 4 6 5	3 4 4 6 4	2 6 6 6 4	3 6 6 6 6 4 4	3 6 6 6 6 5 3	3 6 6 6 8 5	3.625 4 5
28 85 145 150	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product)	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product)	3 4 8 3 4 4 2	3 3 4 8 6 4 4 4	3 4 4 6 5	3 4 4 6 4 2	2 6 6 6 4 4 2 2	3 6 6 6 6 4 4 3	3 6 6 6 6 5 3 3	3 6 6 6 8 5 3	3.625 4 5 6 5.875 4.375 3.25
28 85 145	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Exolosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel)	Collision Contact Grounding Sinking / Capsize Fire / Explosion	3 4 8 3 4 4 2 4	3 4 8 6 4 4 4	3 4 4 6 5 2 4	3 4 4 6 4 2 4 2	2 6 6 6 4 4 2 6	3 6 6 6 6 4 4 3 6	3 6 6 6 6 5 3 3 6	3 6 6 6 8 5 3 3 5.25	3.625 4 5 6 5.875 4.375
28 85 145 150 48	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product)	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding	3 4 8 3 4 4 2 4 4 4	3 3 4 8 6 4 4 4 2 4	3 4 4 6 5 2 4 4 4	3 4 4 6 4 2 4 2 2	2 6 6 4 4 2 6 6	3 6 6 6 4 4 3 6	3 6 6 6 6 5 3 3 6 6	3 6 6 8 8 5 3 3 5.25 5	3.625 4 5 6 5.875 4.375 3.25
28 85 145 150 48 56 48	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSC RA (F&T), FP PMSC RA (F) 06 - 1.4 Sinking / Capsize	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize	3 4 8 3 4 4 4 4 4 4 3	3 3 4 8 6 4 4 4 2 4 4 2	3 4 4 6 5 2 4 4 4 2	3 4 4 6 4 2 2 2 2 2	2 6 6 6 4 4 2 6 6 8	3 6 6 6 4 4 3 6 8	3 6 6 6 5 3 3 6 6 8	3 6 6 6 8 5 3 3 5.25 5 5.25	3.625 4 5 6 5.875 4.375 3.25 3.125 5.25 5
28 85 145 150 48 56 48 134	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.0 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F8T)/ FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion	3 4 8 3 4 4 2 4 4 4 3 3	3 3 4 8 6 4 4 4 2 4 4 2 3	3 4 4 6 5 2 4 4 4 2 3	3 4 4 6 4 2 4 2 2 2 2	2 6 6 6 4 4 2 6 6 8 3	3 6 6 6 4 4 3 6 6 8 8	3 6 6 6 6 5 3 3 6 6 8 4	5 5.25	3.625 4 5 6 5.875 4.375 3.25 3.125 5.25
28 85 145 150 48 56 48	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSC RA (F&T), FP PMSC RA (F) 06 - 1.4 Sinking / Capsize	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize	3 4 8 3 4 4 2 4 4 4 3 3 3 2	3 3 4 8 6 4 4 4 2 4 4 2 3 2 9	3 4 4 6 5 2 4 4 4 2 3 2 4 6	3 4 4 6 4 2 2 2 2 2 1 1 1	2 6 6 6 4 4 2 6 6 8 3 4 3	3 6 6 6 6 6 4 4 4 3 3 6 6 6 8 8 4 4 4 3 3 8 8 8	3 6 6 6 6 5 3 3 3 6 6 6 8 4 4 3	5 5.25	3.625 4 5 6 5.875 4.375 3.25 3.125 5.25 5
28 85 145 150 48 56 48 134 150 160 9	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.0 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F8T)/ FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Collision	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Contact Contact Grounding Contact	3 4 8 3 4 4 2 4 4 4 3 3 3 2 4 5	3 3 4 8 8 6 6 4 4 4 4 2 2 3 3 2 9	4 4 6 5 2 4 4 2 3 2 4 6 5	3 4 4 6 4 2 2 2 2 1 1 1 6 5	2 6 6 6 4 4 2 6 6 8 3 4 3 4	3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 6 6 6 6 5 3 3 3 6 6 6 8 4 4 3 3 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	5 5.25	3.625 4 5 6.5875 4.375 3.25 3.125 5.25 5.25 3.125 6.6755 6.125
28 85 145 150 48 56 48 134 150 160 9	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSC RA (F8T)7. FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.2 Contact FP PMSC RA (F) 07 - 1.3 Grounding	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding	3 4 8 3 4 4 4 4 4 4 3 3 3 2 4 5 5 3 3	3 3 4 4 8 6 6 4 4 4 4 2 2 4 4 4 2 2 3 3 2 2 9 9 100 6 6	4 4 6 5 2 4 4 4 2 3 2 4 6 6	3 3 4 4 6 4 2 2 2 2 2 1 1 1 1 6 6	2 6 6 6 4 4 2 6 6 6 8 8 3 4 4 3 8 8	3 6 6 6 6 6 6 4 4 4 3 3 6 6 6 8 8 4 4 4 4 3 3 8 8 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 6 6 6 6 5 3 3 6 6 6 8 8 4 4 3 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	5 5.25	3.625 4 5 6 6 7 8 7 8 7 8 7 8 7 8 7 8 8 8 8 8 8 8
28 85 145 150 48 56 48 134 150 160 9	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.0 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F8T)/ FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 06 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Collision	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Contact Contact Grounding Contact	3 4 8 8 3 4 4 4 4 4 4 4 3 3 3 2 2 4 4 4 4 4 4 4	3 3 4 8 6 4 4 4 4 2 2 3 3 2 9 10 6 6 6 6 6 7	3 4 4 6 5 2 4 4 4 2 3 3 2 4 6 6	3 3 4 4 4 6 4 2 2 2 2 2 1 1 1 1 6 6 6 6 6 6 6 6 6 6 6	2 6 6 6 4 4 2 6 6 6 8 3 3 4 4 3 4 4 4 4 4 4 5 6 6 6 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 6 6 6 6 5 5 3 3 3 3 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6	5 5.25	3.625 4 5 6.5875 4.375 3.25 3.125 5.25 5.25 3.125 6.6755 6.125
28 85 145 150 48 56 48 134 150 160 9 23 37 73 121	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinkina / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSC RA (F8T)7, FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 06 - 1.1 Collision FP PMSC RA (F) 07 - 1.2 Contact FP PMSC RA (F) 07 - 1.2 Contact FP PMSC RA (F) 07 - 1.3 Grounding FP PMSC RA (F) 07 - 1.4 Sinking / Capsize FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Loss of Containment (oil product)	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product)	3 4 8 8 3 4 4 4 4 4 3 3 3 3 2 2 4 4 5 5 5 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4	3 3 4 4 8 8 6 6 4 4 4 4 4 2 2 4 4 4 4 2 2 3 3 2 2 9 9 100 6 6 6 6 4 4 4 4 4 4 4 4 4 4	3 4 4 6 5 2 4 4 4 2 2 3 3 2 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 4 4 6 4 2 2 2 2 2 1 1 1 6 6 6 6 6 6 6 6 6 6 6 6	2 6 6 6 4 4 2 6 6 6 8 8 3 3 4 4 3 4 4 4 4 4 4 4 4 4 4 4 4 4	3 6 6 6 6 4 4 3 3 6 6 8 8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 3 6 6 6 6 6 8 8 4 4 6 6 6 6 6 6 3 3 3 6 6 6 6 6 6 6 6 6	5 5.25	3.625 4 5 6.75 8.875 8.325 5.25 5.25 8.31525 8.31525 8.31525 8.355
28 85 145 150 48 56 48 134 150 9 23 37 73 121 30	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.3 Grounding FP PMSC RA (F) 07 - 1.3 Grounding FP PMSC RA (F) 07 - 1.3 Contact FP PMSC RA (F) 07 - 1.3 Contact FP PMSC RA (F) 07 - 1.5 Contact FP PMSC RA (F) 07 - 1.5 Contact FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion FP PMSC RA (F) 07 - 1.5 Sire / Explosion	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Loss of Containment (Oil Product)	3 4 8 8 3 3 4 4 4 4 4 4 3 3 3 2 4 4 5 5 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 3 4 4 8 8 8 6 6 4 4 4 4 2 2 3 3 2 2 9 9 100 6 6 6 4 4 4 3 3 6 6 6 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 4 4 6 5 2 4 4 4 2 3 2 4 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 4 4 4 2 2 2 2 1 1 1 6 6 6 6 6 4 8 8	2 6 6 6 4 4 2 6 6 6 8 8 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 6 6 6 6 4 4 4 3 3 6 6 6 8 8 8 8 8 8 8 6 6 4 4 4 6 6 6 6 6	3 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	5 5.25	3.625 4 5 6.75 8.75 8.375 8.3125 8.3
28 85 145 150 48 56 48 134 150 160 9 23 37 73 121	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.3 Grounding FP PMSC RA (F) 05 - 1.4 Sinkina / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSC RA (F8T)7, FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 06 - 1.1 Collision FP PMSC RA (F) 07 - 1.2 Contact FP PMSC RA (F) 07 - 1.2 Contact FP PMSC RA (F) 07 - 1.3 Grounding FP PMSC RA (F) 07 - 1.4 Sinking / Capsize FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Loss of Containment (oil product)	Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product)	33 44 88 33 44 44 44 33 33 22 44 44 44 33 44	3 3 4 8 8 6 4 4 4 2 2 3 3 2 9 9 10 6 6 6 4 4 4 4 4 4 4 2 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9	3 4 4 6 5 2 4 4 4 2 3 2 4 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 4 4 6 6 4 2 2 2 2 2 1 1 1 6 5 6 6 6 6 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2 6 6 6 4 4 4 2 6 6 6 8 8 3 4 4 6 5 5 4 4 4 4 4 4 2 2 6 6 6 6 6 6 6 6 6 6 6 6	3 6 6 6 6 4 4 4 3 3 6 6 8 8 8 8 8 6 6 6 6 6 6 6 6 6 6 6	3 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	5 5.25	3.625 4 5 6.75 8.75 8.375 8.3125 8.3
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288855 14551 16502	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F&T)7. FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Fire / Explosion FP PMSC RA (F) 06 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Sinking / Capsize FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.1 Sinking / Capsize FP PMSC RA (F) 07 - 1.1 Sinking / Capsize FP PMSC RA (F) 07 - 1.1 So of Dock Level (Lock Gate Operations) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Counding Refer Also to: FP PMSSC RA (F&T)7 FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel)	Collision Contact Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Contact Grounding Contact Grounding	3 3 4 4 4 4 4 3 3 3 3 4 6 6 6 2 2 6 6 6 3 3 3 2 2 8 4 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 3 3 4 4 8 8 8 6 6 4 4 4 4 2 2 4 4 4 4 2 2 3 3 2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 4 4 4 6 5 2 2 4 4 4 6 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 4 4 4 4 4 4 4 6 6 6 6 6 6 6 6 6 6 6	2 6 6 6 6 4 4 4 2 6 6 8 8 3 3 4 4 4 4 2 2 5 6 6 6 6 8 8 4 4 4 2 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 6 6 6 6 6 8 8 8 8 8 6 6 6 6 6 5 5 8 8 6 6 6 6	3 6 6 6 6 5 3 3 3 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6	55.25 3.53 3.33 8.86 6.66 4.43 3.66 6.66 4.44 4.66 8.88 4.44	3 625 4 4 5 6 6 8 5 875 3 125 5 125 5 125 6 125
288 855 488 855 488 855 488 855 488 855 858 858	FP PMSC RA (F) 05 - 1.2 Contact FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.4 Sinking / Capsize FP PMSC RA (F) 05 - 1.5 Fire / Explosion FP PMSC RA (F) 05 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 06 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 06 - 1.2 Contact FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F8T)7 FP PMSC RA (F) 06 - 1.3 Grounding Refer Also to: FP PMSSC RA (F8T)7 FP PMSC RA (F) 06 - 1.4 Sinking / Capsize FP PMSC RA (F) 06 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.1 Collision FP PMSC RA (F) 07 - 1.2 Grounding FP PMSC RA (F) 07 - 1.5 Grounding FP PMSC RA (F) 07 - 1.5 Fire / Explosion FP PMSC RA (F) 07 - 1.5 Grounding FP PMSC RA (F) 07 - 1.5 Sinking / Capsize FP PMSC RA (F) 07 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 07 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Collision (Fishing/Leisure Vessel) FP PMSC RA (F) 08 - 1.1 Contact FP PMSC RA (F) 08 - 1.1 Contact FP PMSC RA (F) 08 - 1.1 Contact FP PMSC RA (F) 08 - 1.1 Sinking / Capsize FP PMSC RA (F) 08 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.5 Loss of Containment (oil product) FP PMSC RA (F) 08 - 1.5 Fire / Explosion FP PMSC RA (F) 08 - 1.5 Fire / Explosion FP PMSC RA (F) 08 - 1.5 Fire / Explosion FP PMSC RA (F) 08 - 1.5 Fire / Explosion FP PMSC RA (F) 09 - 1.1 Contact FP PMSC RA (F) 09 - 1.1 Fire / Explosion FP PMSC RA (F) 09 - 1.1 Fire / Explosion	Collision Contact Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Cost of Containment (Oil Product) Cost of Containment (Oil Product) Loss of Dock Level (Lock Gate Operations) Collision (Fishing/Leisure Vessel) Contact Grounding Sinking / Capsize Fire / Explosion Loss of Containment (Oil Product) Collision Contact Grounding Sinking / Capsize Fire / Explosion	33 44 44 44 33 33 22 44 44 44 44 66 66 33 22 66 66 33 66 66	3 3 4 4 8 8 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	3 3 4 4 4 6 5 2 2 4 4 6 5 5 6 6 4 4 4 8 8 3 3 4 9 9 9 4 4 2 2 4 4 4 2 2 4 4 4 4 4 4 4	3 3 4 4 4 2 2 2 2 1 1 1 1 6 6 6 6 4 8 8 3 3 4 4 4 9 2 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1 9 1	2 6 6 6 6 8 8 3 3 4 4 6 5 6 6 4 4 4 4 2 2 5 6 6 8 8 8 4 4 4 4 2 5 6 6 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3 3 6 6 6 6 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 66 66 66 55 33 36 66 66 66 66 66 66 66 44 33 35 55 100 44 55 55 55 55 55 55 55 56 56 56 56 56 56	55.25 3.53 3.33 8.86 6.66 4.43 3.66 6.66 4.44 4.66 8.88 4.44	3.625 4 5 5 6 6 5.875 3.25 5.25 5.25 5.25 6.125

30	FP PMSC RA (F) 10 - 1.3 Grounding	Grounding	2	6	2	6	,	10	6	10	5.7
73	FP PMSC RA (F) 10 - 1.4 Sinking / Capsize	Sinking / Capsize	4	3	4	5	5	5	5	5	4.1
11	FP PMSC RA (F) 10 - 1.5 Fire / Explosion	Fire / Explosion	4	4	4	4	10	10	8	10	6.7
113	FP PMSC RA (F) 10 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3	3	6	3	3	3	5	5	3.87
102	FP PMSC RA (F) 10 - 1.7 Loss of Dock Level	Loss of Dock Level	4	4	4	4	3	5	3	5	
56	FP PMSC RA (F) 11 - 1.1 Collision	Collsion	4	6	6	6	5	5	4	4	
25	FP PMSC RA (F) 11 - 1.2 Contact	Contact	6	6	3	3	6	8	8	8	
150 93	FP PMSC RA (F) 11 - 1.3 Grounding	Grounding	2	4	2	2	3	4	4	4	3.12
93 56	FP PMSC RA (F) 11 - 1.4 Sinking / Capsize	Sinking / Capsize	4	5	3	5	4	5	3	5	4.2
102	FP PMSC RA (F) 11 - 1.5 Fire / Explosion	Fire / Explosion Loss of Containment (Oil Product)	6	6	3	6	5	5	4	5	
93	FP PMSC RA (F) 11 - 1.6 Loss of Containment (oil product) FP PMSC RA (F) 12 - 1.1 Collision	Collision	2	4	6	6	3	3	4	4	
14	FP PMSC RA (F) 12 - 1.1 Collision FP PMSC RA (F) 12 - 1.2 Contact	Contact		6	2	6	3	10	5	- 5	4.2
102	FP PMSC RA (F) 12 - 1.2 Contact FP PMSC RA (F) 12 - 1.3 Grounding	Grounding	3	0	3	6	1	10	8	10	ъ.
73	FP PMSC RA (F) 12 - 1.4 Sinking / Capsize	Sinking / Capsize	3	5	5	5	3	5	5	5	4
28	FP PMSC RA (F) 12 - 1.5 Fire / Explosion	Fire / Explosion	6	9	3	9	5	5	5	5	5.87
73	FP PMSC RA (F) 12 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	4	4	6	6	3	3	5	5	4
48	FP PMSC RA (F) 13 - 1.2 Contact	Contact	6	6	4	6	5	5	5	5	5.2
19	FP PMSC RA (F) 13 - 1.3 Grounding	Grounding	6	9	6	9	5	5	5	5	6.2
56	FP PMSC RA (F) 13 - 1.4 Sinking / Capsize	Sinking / Capsize	5	5	5	5	5	5	5	5	
38	FP PMSC RA (F) 13 - 1.5 Fire / Explosion	Fire / Explosion	6	6	6	6	5	5	5	5	5
102	FP PMSC RA (F) 13 - 1.6 Loss of Containment (oil product) Refer also to FP PMSC RA (F&T)5	Loss of Containment (Oil Product)	3	6	6	3	2	4	4	4	
44	FP PMSC RA (F) 14 - 1.1 Collision	Collision	6	3	3	3	8	8	4	8	5.37
30	FP PMSC RA (F) 14 - 1.2 Contact	Contact	5	5	5	5	8	8	4	6	5.7
102	FP PMSC RA (F) 14 - 1.3 Grounding	Grounding	4	4	4	4	4	4	4	4	
85	FP PMSC RA (F) 14 - 1.4 Sinking / Capsize	Sinking / Capsize	5	5	2	5	5	5	3	5	4.37
44	FP PMSC RA (F) 14 - 1.5 Fire / Explosion	Fire / Explosion	3	3	3	6	8	8	4	8	5.37
93 99	FP PMSC RA (F) 14 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	3	3	3	3	6	6	6	4	4.2
65	EP PMSC RA (F) 15 - 1.1 Collision	Contact	4	6	4	4	4	4	3	4	4.12
38	FP PMSC RA (F) 15 - 1.2 Contact	Contact	5	10	5	5	4	4	3	3	4.87
30	FP PMSC RA (F) 15 - 1.3 Grounding FP PMSC RA (F) 15 - 1.4 Sinking / Capsize	Grounding	5	10	5	10	3	4	3	4	5.7
14	FP PMSC RA (F) 15 - 1.4 SIRKING / Capsize FP PMSC RA (F) 15 - 1.5 Fire / Explosion	Sinking / Capsize Fire / Explosion	10	10	4	10	5	5	3	5	5.7
85	FP PMSC RA (F) 15 - 1.6 Loss of Containment (Oil Product)	Loss of Containment (Oil Product)	10	10	10	10	2	2	3	2	4.37
	FP PMSC RA (F) 16 - 1.1 Collision	Collision	6	3	3	3	2	2	4	8	4.37
30	FP PMSC RA (F) 16 - 1.2 Contact	Contact	5	5	5	5	8	8	4	6	5.7
102	FP PMSC RA (F) 16 - 1.3 Grounding	Grounding	4	4	4	4	4	4	4	4	4.0
85	FP PMSC RA (F) 16 - 1.4 Sinking / Capsize	Sinking / Capsize	5	5	2	5	5	5	3	5	4.3
44	FP PMSC RA (F) 16 - 1.5 Fire	Fire / Explosion	3	3	3	6	8	8	4	8	5.3
93	FP PMSC RA (F) 16 - 1.6 Loss of Containment (Oil Product)	Loss of Containment (Oil Product)	3	3	3	3	6	6	6	4	4.2
129	FP PMSC RA (T) 01 - 1.1 Collision	Collision	2	4	2	2	5	5	5	4	3.62
99	FP PMSC RA (T) 01 - 1.2 Contact	Contact	3	6	3	3	5	5	4	4	4.12
6	FP PMSC RA (T) 01 - 1.3 Grounding	Grounding	2	6	4	6	10	10	10	10	7.2
9	FP PMSC RA (T) 01 - 1.4 Sinking / Capsize	Sinking / Capsize	4	5	4	4	10	10	10	8	6.87
55	FP PMSC RA (T) 01 - 1.5 Fire / Explosion	Fire / Explosion	6	6	6	3	5	5	5	5	5.12
140 121	FP PMSC RA (T) 01 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	1	2	3	3	3	5	5	5	3.37
121	TT TWO TAY (1) 02 T.T COMSION	Collision	4	6	2	4	3	4	3	4	3.7
134	FP PMSC RA (T) 02 - 1.2 Contact FP PMSC RA (T) 02 - 1.3 Grounding	Contact	8	8	4	8	6	6	8	8	
85	FP PMSC RA (T) 02 - 1.3 Grounding FP PMSC RA (T) 02 - 1.4 Sinking / Capsize	Grounding Sinking / Capsize	3	3	3	6	2	4	3	4	3
13	FP PMSC RA (T) 02 - 1.4 SINKING / Capsize FP PMSC RA (T) 02 - 1.5 Fire / Explosion	Fire / Explosion	4	4	- 3	4	5	5	5	5	6.62
121	FP PMSC RA (T) 02 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	2	2	6	2	3	3	,		0.02
48	FP PMSC RA (T) 04 - 1.1 Collision	Collision	4	8	4	6	5	5	5	5	5.5
66	FP PMSC RA (T) 04 - 1.2 Contact	Contact	3	9	3	6	3	5	4	5	4.7
121	FP PMSC RA (T) 04 - 1.3 Grounding	Grounding	2	4	4	4	2	4	5	5	3.7
56	FP PMSC RA (T) 04 - 1.4 Sinking / Capsize	Sinking / Capsize	5	5	5	5	5	5	5	5	
25	FP PMSC RA (T) 04 - 1.5 Fire / Explosion	Fire / Explosion	8	8	6	6	5	5	5	5	
113	FP PMSC RA (T) 04 - 1.6 Loss of Containment (Oil Products)	Loss of Containment (Oil Products)	2	4	4	4	3	4	5	5	3.87
140	FP PMSC RA (T) 04 - 1.7 Allision	Allision	1	3	1	2	5	5	5	5	3.37
113	FP PMSC RA (T) 05 - 1.1 Collision	Collision	4	4	4	4	4	5	2	4	3.87
73	FP PMSC RA (T) 05 - 1.2 Contact	Contact	3	9	3	6	3	5	3	4	4
150	FP PMSC RA (T) 05 - 1.3 Grounding	Grounding	2	2	4	6	1	1	4	5	3.12
99	FP PMSC RA (T) 05 - 1.4 Sinking / Capsize	Sinking / Capsize	4	4	3	4	4	4	5	5	4.12
56	FP PMSC RA (T) 05 - 1.5 Fire / Explosion	Fire / Explosion	6	6	3	6	5	5	4	5	
150 38	FP PMSC RA (T) 05 - 1.6 Loss of Containment (oil product)	Loss of Containment (Oil Product)	2	2	6	4	1	1	4	5	3.12
38 48	FP PMSC RA (T) 06 - 1.1 Collision	Collision	3	6	6	3	8	6	4	8	5
160	FP PMSC RA (T) 06 - 1.2 Contact	Contact	5	5	5	5	6	6	4	6	5.2
160	FP PMSC RA (T) 06 - 1.3 Grounding	Grounding	3	3	3	3	3	4	2	3	
150	FP PMSC RA (T) 06 - 1.4 Sinking / Capsize	Sinking / Capsize	6	8	4	6	3	4	3	4	4.7
129	FP PMSC RA (T) 06 - 1.5 Fire / Explosion FP PMSC RA (T) 06 - 1.6 Loss of Containment (oil product)	Fire / Explosion Loss of Containment (Oil Product)	4	3	9	3 4	1	2	2	3	3.12
	FORTH PORTS LIMITED	Document ID	Orig	inal D	ate						
	FOR THE FOR TS LIMITED	FP PMSC (R) 2/03	J9								

FORTH PORTS LIMITED		Original Date Jul-13
Risk Ranking - Category	Review Due	Revised By / Date
	Ongoing	MM / August 2015



FORTH PORTS LIMITED Risk Assessment

			INSERT TITLE																				
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Preventative & Reactive (Most Likely)		Risk scored at Residual level (Most Likely)						level (Most Likely)				level (Most Likely)					(Wor	level st Cre	t Resi dible	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business										
1.1																							
1.2																							
1.3																							
1.4																							
1.5																							
			Risk Ranking			· <u> </u>				_	_	_											

Risk Assessment Scoring Matrix

LIKELIHOOD

- 1 = Extremely unlikely (More than 100 years)
- 2 = Remote (10 99 years)
- 3 = Reasonably likely (1 9 years)
- 4 = Likely (Once per Year)
- 5 = Frequent (More than once per year)

CONSEQUENCE

PEOPLE:

- 1 = None
- 2 = Minor, single slight Injury
- 3 = Slight, multiple moderate or single major injury
- 4 = Serious, multiple major injuries or single fatality
- 5 = Major, more than 1 fatality

ENVIRONMENT:

- 1 = localised spill < £5000,
- 2 = Minor spill Tier 1 local response,
- 3 = Moderate spill, Tier 2 some outside assistance
- 4 = Moderate spill, Tier 2 greater outside assistance
- 5 = Major spill, Tier 3 national response

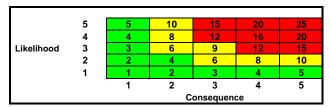
PROPERTY:

- 1 = negligible < £5000
- 2 = Minor > £5000
- 3 = Moderate >£50,000
- 4 = Serious, > £500,000
- 5 = major, > £2,000,000

BUSINESS:

- 1 = Negligible impact < £5000
- 2 = Minor impact > £5000
- 3 = Moderate impact > £50,000, bad local publicity, short term reduction of activity.

OVERALL RISK



RED The Higher numbers (Greater than 10) in the matrix are considered "High-risk", These activities should not be carried out without additional controls being put in place to reduce the

AMBER Hazards with risk factors within these bands (6 - 10) are termed "consider". These lower risk factors are considered acceptable, but still need careful monitoring to ensure that everything has been done to reduce the consequences and likelihood.

GREEN The lower numbers(5 and below) in the matrix are considered "low-risk", but should still be monitored to ensure that controls remain effective.

DEF

CAUSES
System Failure
Human Error / Failure
Environmental Conditions
CONTROLS
Aids to Navigation

Legislation & Guidance
Conservancy
Emergency Plans

INITIONS

DEFINITION

A breakdown of any system hardware or operating system. Examples of a system failure include but is not limited to:

- Any technical failure on board a vessel / craft
- Technical failure with the VTS monitoring system
- AtoN failure
- Error with survey data
- Failure with conservancy maintenance & verification process
- Techinical failure with the lock gates
- Techinical failure resulting in loss of dock level

Human failure examples can be:

- Failure of FTNS to follow and execute proper processes and procedures.
- Bridge team Error
- Human error due to lack of care or attention
- Human error due to violation of law, procedure or guidance

Environmental Condition exmples can include, but are not limited to:

- High winds
- Rough Seas
- Restricted visibility
- Strong current / tide
- Siltation

An Aid to Navigation is a device, system or service, external to vessels, designed and operated to enhance safe and efficient navigation of individual vessels and/or traffic.

These can include but are not limited to:

- Buoys
- Lights
- Lighthouses
- Sound signals
- Portable Pilot Unit (PPU)
- AIS
- ECDIS
- RADAR
- GPS
- Port Entry Lights

Legislation and guidance refers to all applicable legislation and guidance related to the navigational safety of vessels, examples of these can include but is not limited to:

- Forth Ports Bye Laws
- General Directions
- Marine Procedures Guidelines and Information
- Towage Guidelines
- All other relevant international and national legislation
- Notice to Mariners
- Surveying and survey programming
- Promulgation of survey data
- Dredging and dredging programme
- Aids to Navigation maintenance and verification
- Forth Ports contingency plans
- Local Authority contingency plans
- National contingency plans



		Fo	rth River Passage - Standard Vessel												
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(M	ored a leve Most Li	el ikely)				leverst C	el		Score	MRFs: 064/19 (engine failure), 051/19 (Technical failure), 034/19 (blackout), 091/19 (non compliance with VTS), 094/19 (Close quarters), POLREPs: 15.11.20,
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard Risk	
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	3	9	9	9	9	2	10	10	10	8	9.25	Most likely: Collision between small vessel and larger vessel around the bridges area resulting in minimal damage.
1.2	Contact	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	3	3	6	3	6	1	5	5	4	5		Worst credible: Collision between VLCC and cruise vessel resulting in total loss of vessels and loss of life. Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: High speed impact with bridge resulting in extreme damage to vessel and bridge, and loss o life.
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Aids to Navigation Conservancy Weather Forecasting / Tidal Predictions Emergency Plans Notice to Mariners Legislation & Guidance	3	3	9	9	6	1	5	5	5	5	5.875	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans Weather Forecasting / Tidal Predictions Aids to Navigation Conservancy Notice to Mariners	1	5	5	4	4	1	5	5	5	4	4.625	Most likely: Vessel sinks outwith main shipping areas, all crew safely abandon ship
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans Weather Forecasting	3	6	9	6	9	2	10	10	10	10	8.75	Worst credible: Cruise vessel sinks resulting in total loss of vessel and loss of life. Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Emergency Plans Weather Forecasting / Tidal predictions Conservancy Vetting (Tankers)	4	8	8	8	8	1	3	5	5	5	6.25	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content	Reviewed	Changes Made	
Overall vessel numbers calling a	REPs reviewed. I Forth, also vessel type and size. ize of ongoing projects.	References to FCBC removed. Causes simplified - definitions tab added for greate	r detail.
FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 1/07	Revised By / Date CHM, MM, HMFO, HMFI, HMDD, Man Tow&PV / Oct 2012	
Risk Assessment - Forth River	Review Due	Revised By / Date	
Passage (Standard Vessel)	Aug-23	AMM / August 2021	



		Port of Leit	th - Arrival / Sailing Leith Approach Buoy t	о Ве	erth	ı									MRFs: 23/21 (Contact), 12/21 (contact), 081/20 (Contact), 075/20(Allision), 044/20 (Contact), 043/20
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Risk		ored a leve ost Li	el ikely)			Wors	level st Cre	t Resid)	Risk Score	(Contact), 031/20 (Contact), 02/20 (Contact), 02/20 (Contact), 031/20 (Contact), 031
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard R	
1,1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	4	6	9	6	6	2	6	6	6	6	6.375	Most Likely: Collision with small vessel resulting in no damage. Worst Credible: Collision involving cargo vessel and cruise ship. Resulting in the loss of vessel and los of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Quay edge 'cargo clear' demarkation Cranes properly stowed on quayside Swing Bridge Procedure Forth Ports H&S Procedures Aids to Navigation	5	5	10	10	10	2	6	8	6	8	7.875	Most Likely: Slow speed impact with quay resulting in minimal damage to vessel or jetty. Worst Credible: Large impact resulting in extreme damage to vessel and infrastructure. Quayside no
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations)	3	3	6	6	3	2	6	8	8	10	6.25	Ionger able to operate and vessel requiring repair possible death / loss of containment. Most Likely: Vessel grounded in soft mud and floats on following tide without damage. Worst Credible: Vessel hard aground, cannot be refloated at the Port enterance. Port is closed indefinally and major damage to vessel.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	4	4	5	4	1	4	4	5	5	4.375	Most Likely: Vessel sinks in approach to port, total loss of ship, and crew abandon ship. Worst Credible: Vessel sinks in approach to port, total loss of ship and crew.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	1	3	3	3	2	1	4	4	3	4	3.25	Most Likely: Small fire on-board quickly extinguished.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	3	6	6	1	2	3	4	4	3.875	Worst Credible: Uncontrollable fire, total loss of vessel, crew and cargo. Most Likely: Small spill of non-persistent product. Worst Credible: Large scale spill which cannot be contained resulting in port closure and extensive environmental impact.
1.3	Loss of Dock Level (Lock Gate Operations)	System Failure Human Error Environmental Conditions	Lockgate operational procedures Port Planned Maintenance system Lock Gates - Interlocks to prevent opening all lock gates simultaneously Training / Auditing of Port Staff	3	3	3	3	9	1	5	5	4	5	4.625	Most Likely: Loss of containment but does not result in significant loss of dock level. Possible impact to large draft movements. Worst Credible: Large loss of dock level. Deep drafted vessel take the bottom of dock. Possible large scale damage to vessels and infrastructure.

Content Reviewed	Changes Made
MRFs and POLREPs reviewed.	
Overall vessel numbers calling at Forth, also vessel type and size.	
Number, nature, and size of ongoing projects.	
	Causes simplified - definitions tab added for greater detail.

	Document ID FP PMSC RA (F) 2/05	Risk Assessment Team / Date MM, HMFO / 3rd Dec2012
Risk Assessment - Port of Leith	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



	Port of Rosyth - Arrival / Sailing No1 Rosyth Channel Buoy to Berth													
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris	(Mc	ored at level	ely)	ual		Wors	level t Credi		Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Droperty Property	±	Business	Likelihood	1	Property Pro		Hazard Risk	MRFs: 077/19 (Contact) 065/19 (potential contact),
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	2	4	6	4	4	1	5	5 4		4.5	Most likely: Collision between small workboat and larger vessel at slow speed resulting in minima damage and no injuries. Worst credible: Collision between two cruise vessels resulting in loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Quay edge 'cargo clear' demarkation Cranes properly stowed on quayside Swing Bridge Procedure Forth Ports H&S Procedures Aids to Navigation	3	6	9	6	3	1	5	5 4	4	5.25	
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling	2	2	6	4	6	1	4	4 4	4 4	4.25	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	1	4	4	5	4	1	4	4 8	5 5	4.375	
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans	1	3	3	3	2	1	4	4 3	3	3.125	Most likely: Small fire on beard which is quickly and easily extinguished
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	3	3	3	6	6	2	4	6 8	8	5.5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRFs reviewed - contact.	
Vessel numbers, size, and type in the area.	
Ongoing projects that have an impact.	
	Causes simplified - definitions tab added for greater detail.
	References to FCBC removed.

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F) 03/06	MM, HMFO / 9th Jan 2013
Risk Assessment - Port of Rosyth	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



		Port of Me	thil - Arrival / Sailing Methil Pilot Station t	о Ве	rth]
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris	(M	leve lost L	el Likel	•	ıl R		lev orst C	el redib		Score	MRF 01/21 (contact),021/20 (Contact),
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Τ.	Т.	Risk Blsipess	poodiledi	olinean ol	Property Property	Environment Environment		Hazard Risk	
1.	Collision with Small Commercial Vessel / Leisure vessel	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	4	4		2 4	:	2 1	0 6			5.25	Most likely: Vessel collides with small craft resulting in no damage to the larger vessel an no/minor to damage to the smaller vessel. Results in no injuries to persons Worst credible: Vessel collides heavily with small craft resulting in extensive damage to both vessels and multiple injuries/fatalities
1.3	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Dock Gatemen Procedures Barge proforma	5	5	10	1	5 5		2 (5 8	6	0	6.375	Most likely: Vessel makes light contact with object/quay resulting in no/minor damage to the vessel and quay Worst credible: Vessel makes heavy contact with object/quay resulting in extensive damage to both vessel and quay and possible injuries
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Dock gate procedure	2	2	4		4 2	: :	2 .	1 6	6	6	4.25	Most likely: Vessel runs aground with no damage to vessel, no pollution and can be refloated with the tide Worst credible: Vessel runs aground causing extensive damage to the vessel, major pollution and blocking entrance to ports
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Dockgate operational procedures Port Planned Maintenance system Training / Auditing of Port Staff Dock gate procedure Aids to Navigation	1	4	3	:	2 3		1	5 3	4	4	3.5	Most likely: Vessel sinks/capsizes outwith entrance of harbour with everyone safely evactuated and no loss of life Worst credible: Vessel sinks/capsizes in entrance of harbour with multiple fatalities and total loss of vessel
	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans	1	3	3	:	3 2	1		1 4	3	3	3.125	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.0	S Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	3	•	6 6	1	1	2 3	3	В	3.625	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
1.	Loss of Dock Level (Lock Gate Operations)	System Failure Human Error Environmental Conditions	Dockgate operational procedures Port Planned Maintenance system Training / Auditing of Port Staff Dock gate procedure	3	3	3	;	3 3	2	2 4	2 6	6	6	4	Most Likely: Loss of containment but does not result in significant loss of dock level. Possible impact to large draft movements. Worst Credible: Large loss of dock level. Deep drafted vessel take the bottom of dock. Possible large scale damage to vessels and infrastructure.

Content Reviewed	Changes Made
MRFs; likelihood of contact in light of submitted MRF, other MRF types	
considered.	
Changes to guidelines or procedures affecting Methil	
Number of vessels calling, other traffic in the vicinity, and vessel type calling.	Causes simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED		Risk Assessment Team / Date HMFO, HMDD, MM / 16th Jan 2013
Risk Assessment - Port of Methil	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



	Methil Energy Park - Arrival/Sailing Methil Pilot Station to Berth													No relevant MRFs since previous review
Ref.	Hazard	Causes	Controls	Ris	Risk scored at Residual level			1	level	Residua				
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	H	Ť	Over	all Ri	a k	(t Credi		Risk Score	
	, , , , , , , , , , , , , , , , , , , ,			Likelihood	People	Property	۱	Business	Likelihood	П		Business	Hazard Ris	
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy External standby tugs audited and issued with restricted towage licence for emergencies.	2	4	4	4	4	2	Œ	6	6 6	5	Most likely: Collision between small craft and larger vessel at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two commercial vessels resulting in loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside / Seabed Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering SE Quayside Regulations & Risk Assessment External standby tugs audited and issued with restricted towage licence for emergencies.	4	8	8	4	4	2	Œ	6	6 6	6	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Large vessel contacts quayside at high speed resulting in significant damage to vessel, quayside, and serious injuries / loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Survey / dredging Programme / Schedule (By Operator) SE Quayside Regulations & Risk Assessment	3	3	6	6	6	2	æ	6	6 8	5.875	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering SE Quayside Regulations & Risk Assessment External standby tugs audited and issued with restricted towage licence for emergencies.	1	4	4	5	4	1	4	4	5 5	4.375	
1.6	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	4	4	2	2	1	4	4 :	3 3	3.25	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Survey Programme / Schedule (By Operator)	2	2	4	4	4	1	2	3 ;	3 3	3.125	

Content Reviewed	Changes Made
Changes to guidelines or procedures affecting Methil Number of vessels calling, other traffic in the vicinity, and vessel type calling.	Causes simplified - definitions tab added for greater detail.

		Risk Assessment Team / Date HMFO, HMDD, MM / 23rd Jan 2013
Risk Assessment - Methil SE Berth	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



		Port of Kirkcald	y - Arrival / Sailing Close Approaches of D	ock	to l	Ber	th		_						MRF: 083/20 (Near Miss grounding),
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		lev		sidual	ı		ored a leve	ı		Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	T.	Environment Environment	Business	Likelihood	People	П	Environment Environment	Business	Hazard Risk	
1.	Collision / Allision with Small Commercial Vessel / Leisure vessel / other Kirkcaldy vessel	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2		4		ਜ <u>਼ੌ</u>	2			e Envi	B.	5.25	Most likely: Collision between Kirkcaldy vessel and small commercial, leisure, or fishing vessel resulting in minimal damage Worst credible: Collision between outbound Kirkcaldy vessel and other vesse in anchorage resulting in extreme damage and loss of life.
1.3	2 Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Additional fenders on West breakwater Fixed Lighting on East Pier	4	4	4	4	4	2	6	œ	6	6	5	Most likely: Vessel has slow speed impact with quayside whilst berthing resulting in minimal damage. Worst credible: High speed impact with quayside whilst berthing resulting in extreme damage to vessel and quayside, and loss of life.
1.3	Grounding Refer also to: Risk Assessment (F&T) 7	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations)	2	2	4	4	2	2	6	8	8	8	5.25	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	4	3	2	3	1	5	3	4	4	3.5	Most likely: Vessel sinks outwith main shipping areas, all crew safely abandor ship Worst credible: Vessel sinks resulting in total loss of vessel and loss of life.
1.3	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans	1	3	3	3	2	1	4	4	3	3	3.125	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.0	S Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	2	2	4	4	1	2	3	3	4	3	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
No change to vessel traffic and only one MRF.	Causes simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED		Risk Assessment Team / Date HMFO, HMDD, MM / 23rd Jan 2013
Risk Assessment - Port of Kirkcaldy	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



		Port of Burntisla	nd - Arrival / Sailing Close Approaches of	Doc	k to	Ber	rth								MRFs: 04/21 (Contact),
Ref.	Hazard	Causes	Controls	Ris	k sco	ored at		idual	Risk		ed at f	Residua		ө	
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	H		ost Lik	kely)		(Wors	t Cred		4	k Score	
	(Event leading to a consequence)		(what action it now nequent)	Likelihood	People	Property	ŧ		Likelihood	П	Property -	Business Business		Hazard Risk	
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	4	9	6	6	2	8	8	6 8	6	5.675	Most likely: Collision at slow speed between large vessel and small commercial, leisure, or fishing vessel resulting in minimal damage Worst credible: Collision and high speed between two large vessesl and resulting in extrem damage and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures Dock Gatemen Procedures	5	5	10	5	5	2	4	8	6 6	6	6.125	Most likely: Vessel has slow speed impact with quayside whilst berthing resulting in minima damage. Worst credible: High speed impact with quayside whilst berthing resulting in extreme damage to vessel and quayside, and loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Dock Gate Procedure	3	3	6	6	6	2	6	6	6 6	47	5.625	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Dock Gate Procedure	2	4	6	4	6	1	15	4	3 4			Most likely: Vessel sinks, all crew safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, cargo, and loss of life.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans	2	4	4	4	4	1	4	4	3 3	:	3.75	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	4	4	4	œ	8	2	4	6	6 6			Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
1.7	Loss of Dock Level (Lock Gate Operations)	System Failure Human Error Environmental Conditions	Port Planned Maintenance system Training / Auditing of Port Staff Dockgate Procedure	3	3	3	3	3	2	2	6	6 6		4	Most likely: Fault with gates which is repaired before major loss of dock level. Worst credible: Fault with gates which cannot be repaired before major loss of dock level resulting in vessels aground with extreme damage.

Content Reviewed	Changes Made
MRFs review - contact - likelihood already 5. Vessels calling at B'island - number, type, size. Other operatrions in the area i.e. rigs.	
	Causes simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED		Risk Assessment Team / Date HMFO, MM / 16th Jan 2013
Risk Assessment - Port of	Review Due	Revised By / Date
Burntisland	Aug-23	AMM, August 2021



		Inverkeithi	ng - Arrival / Sailing Saint David's Beacon t	о Ве	erth	1									MRF: 020/19 (Contact)
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		lev	at Res el Likely)	idual			leve	t Res		Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Τ.	Environment Environment	Business	Likelihood	People	Dverty Arabot	Environment Environment	Business	Hazard Risk S	
1.1	Collision / allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	4	6	4	4	1	5	5	4	4	4.5	Most likely: Collision between small craft and larger vessel at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two commercial vessels resulting in loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Fendering Cranes properly stowed on quayside Forth Ports H&S Procedures	3	6	9	9	9	2	6	8	6	6	7.375	Most likely: Vessel has slow speed impact with buoy or quay resulting in minimal damage. Worst credible: Large vessel contacts quayside at high speed resulting in significant damage to vessel, quayside, and serious injuries / loss of life.
1.3	Grounding Refer also: Risk Assessment (F&T) 7	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations)	2	2	4	4	2	2	4	6	6	8	4.5	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to port, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Prilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	4	3	2	3	1	5	3	4	4	3.5	Most likely: Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks in harbour approach resulting in total loss of vessel and loss of life.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans	2	6	6	4	4	1	4	4	3	4	4.375	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	2	2	2	4	4	1	2	3	3	4	3	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRFs submitted consiered; increase in amount of contact related MRF's.	
Traffic numbers and vessel type, as well as other movements in the	
vacinity of Inverkeithing.	
	Causes / controls simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 8/04	Risk Assessment Team / Date HMFO, HMDD, MM / 23rd Jan 2013
Risk Assessment - Inverkeithing	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



Braefoot Jetty - Arrival / Sailing Eastern Limits to Berth MRFs reviewed: No relevant MRF since last review Risk scored at Residua Risk scored at Residu Causes Controls Hazard (Most Likely) What can go wrong How can it go wrong Preventative & Reactive (Event leading to a consequence) (What action & how frequent) Overall Risk Overall Risk System Failure Human Error 1.1 Collision / Allision FTNS Legislation & Guidance Aids to Navigation Environmental Conditions Most likely: Collision between small workboat and larger vessel at slow speed Weather Forecasting / Tidal Predictions esulting in minimal damage and no injuries. Emergency Plans Towage Conservancy Worst credible: Collision between two laden tankers resulting in loss of vessels, loss of life and large scale pollution 1.2 Contact System Failure Pilotage FTNS Human Error Legislation & Guidance Environmental Conditions Aids to Navigation Weather Forecasting / Tidal Predictions Jetty Obstruction Emergency Plans Towage 6.75 Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Conservancy Jetty Regulations Jetty Supervisor Worst credible: Large vessel contacts jetty at high speed resulting in significant damage to vessel, jetty, and serious injuries / loss of life. 1.3 Grounding System Failure uman Error FTNS Legislation & Guidance Environmental Conditions Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Jetty Regulations Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to port, extreme damage and loss of contaminent. 1.4 Sinking / Capsize System Failure FTNS Legislation & Guidance Aids to Navigation **Environmental Conditions** Weather Forecasting / Tidal Predictions Emergency Plans 4.5 Towage Conservancy Jetty Regulations Most likely: Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks in approach to jetties resulting in total loss of vessel and loss of life. 5 Fire / Explosion System Failure Human Error Environmental Conditions FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Most likely: Small fire on board which is quickly and easily extinguished. Conservancy Jetty Regulations Norst credible: Uncontrollable fire, total loss of vessel and cargo, loss of life and arge scale pollution 1.6 Loss of Containment (Oil Products) System Failure Pilotage (Within compulsory pilotage Area) Forth Ports Byelaws & General Directions for Navigation Environmental Conditions Emergency Plans / OPRC Weather Forecasting Most likely: Small spill of non-persistant product that dissipates naturally. Marine Guidelines & Port Information

Worst credible: Large scale spill which cannot be contained resulting in port

closures and extensive environmental impact.

Conte	nt Reviewed	Changes Made	
	failure for a vessel calling the Jetty ted, as well as type and size.	Causes / controls simplified - definitions tab added for greater detail.	
FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date	
	FP PMSC RA (F) 9/05	HMFO, HMD, MM / 23rd Jan 2013	

Revised By / Date AMM, August 2021

Risk Assessment - Braefoot Jetty

Review Due

Jetty Regulations



			Navigational Nisk Assessment												
		Port of Gran	ngemouth - Arrival/Sailing Hen & Chickens	to E	Bertl	1									
Ref.	Hazard	Causes	Controls	Ris	k sco	red a	ı			scor	level			Score	
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	Likelihood			all Ris		Likelihood	C	veral	I Risk		Hazard Risk Sc	MRFs: 18/21 (steering failure), 086/20 (Contact), 071/20(Contact), 068/20(Contact), 065/20 (Contact), 065/20 (Contact), 068/20 (Contact), 069/20 (Contact), 069/20 (Contact), 091/20 (Contact),
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Diversionary Channel Jetty / Terminal Guidelines STS Operations Manual Vessel vetting (tankers)	2	6	6	6	6	1	5			5	5.5	Most likely: Collision between inbound / outbound vessel and small vessel a slow speed resulting in minimal damage. Worst credible: Collision between inbound/outbound Grangemouth tankers higher speed resulting in total loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Quayside Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Restricted Air Draft Procedures Cranes properly stowed on quayside Dockhead Staff Ship Specific Towage Requirements (IPOS Entries) STS Operations Manual Jatty / Terminal Guidelines Vessel vetting (tankers)	5	5	10	5	5	2	6	10	8	10	7.375	Most likely: Vessel has slow speed impact with lead in or fenders resulting i minimal damage. Worst credible: Vessel has high speed impact with lock structure resulting i exreme damage to vessel, locks, and loss ofbusiness due to potential port closure.
1.3	Grounding	Technical Failure Human Error Enviornmental Conditions Surveying Omission Failure of Aids to Navigation Unknown Underwater Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations)	3	3	6	3	6	2	2	10	6	10	5.75	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Cargo operations procedures (Including MCA Bulk-handling Regulations) Jetty / Terminal Guidelines Vessel vetting (tankers)	1	4	3	4	5	1	5	5	5	5	4.5	Most likely: Vessel sinks, all crew safely abandon ship Worst credible: Vessel sinks between H&C and locks resulting in total loss: vessel & cargo, channel closure, and loss of life.
	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Emergency Plans / OPRC Legislation & Guidance Weather Forecasting Jetty/Terminal Guidelines Vessel vetting (tankers)	2	4	4	4	4	2	10	10	8	10	6.75	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire on vessel containing munitions, total los: vessel and cargo, and loss of life.
	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Bunkering Procedure Cargo operations procedures (Including MCA Bulk-handling Regulations)	3	3	3	6	3	1	3	3	5	5	3.875	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in por closures and extensive environmental impact.
1.7	Loss of Dock Level	System Failure Human Error Environmental Conditions	Lockgate operational procedures Port Planned Maintenance system Lock Gates - Interlocks to prevent opening all lock gates simultaneously Training / Auditing of Port Staff Impounding Pumps	2	4	4	4	4	1	3	5	3	5	4	Most likely: Fault with gates which is repaired before major loss of dock leve Worst credible: Fault with gates which cannot be repaired before major loss dock level resulting in vessels aground with extreme damage.

Content Rev	riewed	Changes Made	
MRFs reviewed - significant number of	of contacts - one major contact,	Causes / controls simplified - definitions tab added for greater deta	l.
FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 10/06	Risk Assessment Team / Date DMM, HMFI / 19th Dec 2012	
Risk Assessment - Port of	Review Due	Revised By / Date	
Grangemouth Hen & Chickens to	Aug-23	AMM August 2021	

071/20(Contact), 1), 060/20 (Contact), 33/20(Contact), 027/20 9, 101/20 (contact), 12/19, 029/19, 044/19,	
12/19, 029/19, 044/19, 103/19 (Contact))	
el and small vessel at	
rangemouth tankers at of life.	
or fenders resulting in	
s structure resulting in fue to potential port	
following tide with	
ed resulting in major ninent.	
esulting in total loss of	
sily extinguished.	
munitions, total loss of	
ssipates naturally.	
ined resulting in port	
ajor loss of dock level.	
red before major loss of mage.	



	Crombie Berthing/Sailing No sig												No significant MRFs during time from previous review.	
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)		(Mo	level ost Lil	l kely) all Ris	sk	(Overall Risk		rd Risk Score		
				Likelihood	People	Property	Environme t	Business	Likelihood	People	Property Environme	t Business	Hazar	
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	4	6	6	6	1	5		4 4	5	Most likely: Collision between Crombie vessel and small vessel at slow speed resulting in minimal damage Worst credible: Collision between Crombie vessel carrying munitions and inbound/outbound Grangemouth tanker resulting in total loss of vessels and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Jetty Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Restricted Air Draft Procedures Cranes properly stowed on quayside	3	6	6	3	3	2	6	8	8 8		Most likely: Vessel has slow speed impact with jetty whilst berthing resulting in minimal damage. Worst credible: High speed impact with jetty whilst berthing resulting in extreme damage to vessel and jetty, and loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions Unknown Underwater Obstruction	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage	2	2	4	2	2	1	3	4	4 4		Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	4	5	3	5	1	4	5	3 5		Most likely: Vessel sinks outwith main shipping areas, all crew safely abandon ship Worst credible: Vessel sinks in main channel near Crombie resulting in total loss of vessel, channel closure, and loss of life.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Jetty/Terminal Guidelines	3	6	6	3	6	1	5	5	4 5	5	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire on vessel containing munitions, total loss of vessel and cargo, and loss of life.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Bunkering Procedure Standby vessel for bunkering operations	2	2	4	6	6	1	3	3	4 4		Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
No MRFs since pervious review.	
Number of vessels calling at Crombie, as well as type and size.	Causes / controls simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F) 11/06	DMM, HMFI / 19th Dec2012
Risk Assessment - Crombie	Review Due	Revised By / Date
	Aug-23	AMM, August 2021



	Hound Point - Arrival/Sailing Eastern Limits to Berth													MRFs since previous review: 0	
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		ored a leve lost Li	el	idual	level ວັດ (Worst Credible) ທີ		k Score				
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Τ.	Environmen t	Business	Likelihood	People		t conment	Business	Hazard Risk	
1.1	Collision / Allison	System Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Hound Point Marine Guidelines	2	2	6	2	6	1	3	5	5	5	4.25	Most likely: Collision between small workboat and larger vessel at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between two laden tankers resulting in loss of vessels, loss of life and large scale pollution
1.2	Contact	System Failure Human Error Environmental Conditions Jetty Obstruction	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Fendering Hound Point Marine Guidelines	3	3	6	3	6	2	6	10	8	10	6.5	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Large vessel contacts jetty at high speed resulting in significant damage to vessel, jetty, and serious injuries / loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions Unknown Underwater Obstruction	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Hound Point Marine Guidelines	2	2	8	2	6	1	1	5	3	5	4	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to port, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Hound Point Marine Guidelines	1	3	5	5	5	1	3	5	5	5	4.5	Most likely: Vessel sinks, all crew / passengers safely abandon ship. Worst credible: Vessel sinks in approach to jetties resulting in total loss of vessel and loss of life.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Towage Emergency Plans Hound Point Marine Guidelines	3	6	9	3	9	1	5	5	5	5	5.875	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel and cargo, loss of life and large scale pollution
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage (Within compulsory pilotage Area) - 2 Pilots FTNS Forth Ports Byelaws & General Directions for Navigation Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Hound Point Marine Guidelines	2	4	4	6	6	1	3	3	5	5	4.5	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Reviewed	Changes Made
MRFs; No contacts since last review	
Changes to guidelines or procedures affecting HP.	
Number of vessels calling, and other traffic in the vicinity.	
	Causes / controls simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED	Risk Assessment Team / Date DMM, HMFI / 19th Dec 2012
Risk Assessment - Houndpoint Arrival / Sailing Eastern Limits to	Revised By / Date AMM, August 2021



		Cruise V	essels at Anchorage (Hound Point / Nev	vhav	/en)										MRF: 050/20(Fouled anchor), 057/20 (fouled anchor), 043/19 (fouled anchor), 76/19 (engine failure),
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris		level	l kely)			(Wors	level	dible	·)	k Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People		Environment	Business	Hazard Risk	
1.	1 Dragging Anchor	System Failure Human Error Environmental Conditions	Designated and proven anchorages Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	5	5	10	5	5	1	4	5	5	5	5.5	Most likely: Vessel drags anchor, then pays out more chain resulting in no further dragging. Worst credible: Vessel drags anchor resulting in vessel going aground or making contact with bridge/Hound Point Terminal. Vessel suffers extreme damage and possibbilty of loss of life.
1.3	2 Contact	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	6	6	4	6	1	5	5	5	5	5.25	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Vessel has high speed impact with bridge/jetty resulting in significant damage to vessel and loss of life.
1.:	3 Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Tender pack	3	6	9	6	9	1	5	5	5	5	6.25	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in majo disruption to ports, extreme damage and loss of contaminent.
1.2	4 Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	5	5	5	5	1	5	5	5	5	5	Most likely: Vessel sinks, all crew and passengers safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, and loss of life
1.3	5 Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	6	6	6	6	1	5	5	5	5	5.5	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.	5 Loss of Containment (Oil Products) - Refer also to FP PMSC RA (F&T)5	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	6	6	3	1	2	4	4	4	4	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in por closures and extensive environmental impact.

Content Reviewed	Changes Made
MRFs review -3 fouled anchor incidents, subject anchorage area has since been dredged. Other traffic in the vicinity - type, size, density Cruise specific procedures, forms and guidelines.	Causes / controls simplified - definitions tab added for greater detail.

		Risk Assessment Team / Date HMFO, MM, DMM, HMD, MT&PV / 13th Feb 2013
Risk Assessment - Cruise Vessels at	Review Due	Revised By / Date
Anchorage (Hound Point / Newhaven)	Aug-23	AMM, August 2021



FORTH PORTS LIMITED

Risk Assessment - Forth - River Transit + Berthing/Sailing Small Aug-23

Document ID FP PMSC RA (F) 14/06 Risk Assessment Team / Date MT&PV, HMFO, MM, DMM, HMD / 13TH Feb 2013

Revised By / Date AMM, August 2021

Forth - River Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workbo								tc)								
Ref. Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		ed at F level st Like		ual		- 1	ed at F evel Cred	Residu	al	Score			
(Event leading to a consequence)	- I san san nga mang	(What action & how frequent)		O	verall	l Risk			0	verall	Risk		Risk Scor			
			Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	00000	Hazard	MRFs: 045/19 (engine failure), 22/21 (grounding), 10/21(contact), 09/21 (contact), 08/21 (contact), 070/20 (contact), 059/20(blackout), 058/20 (contact), 052/20 (collision with buoy), 023/20 (towline) parted), 022/20 (collision), 005/20 (contact), 001/20 (contact), 101/19 (engine failure) 086/19 (technical failure), 78/19 technical failure), 033/19 (collision),		
1.1 Collision / Allision	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance General Directions (GD19) Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Liaison with Local Authorities & Boat Clubs Audit and license procedure	5	5	10	10	5	2	8	8	6 8	3		Most likely: Collision between two small workboats at slow speed resulting in minimal damage an no injuries. Worst credible: Collision between two small commercial craft at high speed resulting in loss of vessels and loss of life.		
1.2 Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Floating Debris	FTNS Legislation & Guidance General Directions (GD19) Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Liaison with Local Authorities & Boat Clubs Audit and license procedure	5	5	10	5	5	2	10	8	8 6	6		Most likely: Small workboat slow speed impact with floating debris resulting in minimal damage. Worst credible: Contact with bridge, quayside, jetty at high speed resulting in significant damage loss of life.		
1.3 Grounding	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance General Directions (GD19) Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Liaison with Local Authorities & Boat Clubs Audit and license procedure	3	6	6	6	6	2	6	8	6 8	3	6.5	Most likely: Vessel grounds in soft mud and refloats on following tide with damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports,		
1.4 Sinking / Capsize	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance General Directions (GD19) Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Liaison with Local Authorities & Boat Clubs Audit and license procedure	1	5	5	4	5	1	5	5	4 :	5	4.75	extreme damage and loss of contaminent. Most likely: Vessel sinks, all crew safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, and loss of life.		
1.5 Fire / Explosion	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance General Directions (GD19) Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Liaison with Local Authorities & Boat Clubs Audit and license procedure	4	4	4	4	8	2	6	6	4 6	5	5.25	Most likely: Small fire on board which is quickly and easily extinguished.		
1.6 Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	FTNS Legislation & Guidance General Directions (GD19) Weather Forecasting / Tidal Predictions Emergency Plans Conservancy Liaison with Local Authorities & Boat Clubs Audit and license procedure	5	5	5	5	5	2	6	4	6 6		5.25	Worst credible: Uncontrollable fire, total loss of vessel and cargo, and loss of life. Most likely: Small spill of non-persistant prodcut that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensenvironmental impact.		
		Observed Mr. I														
Content Re reral contact incidents with one major in		Changes Made Causes / controls simplified - definitions tab add														



		Cruise Vess	el Tender Operations (Newhaven / Hour	nd P	oin	t)									MRF: 067/19 (Contact)
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	Risk scored at Residual level (Most Likely) (Worst Credible)				l edible))	sk Score				
	(Exert leading to a consequence)		(macadan a non noquent)	Likelihood	People	Over handoud	Environmen t	Business	Likelihood	People		Environmen t	Business	Hazard Risk	
1.1	Collision / Allision	System Failure Human Error Environmental Conditions	Legislation & Guidance FTNS Weather Forecasting, Tidal Predictions & Monitoring Tender Pro-forma & Passage Planning Tender Pack Ruling Depth and UKC document	3	6	3	3	3	2	8	8	4	8	5.375	Most likely: Collision between two tenders at slow speed resulting in minimal damage and no injuries. Worst credible: Collision between large vessel and tender carrying passengers resulting in loss of tender and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Floating Debris	FTNS Legislation & Guidance Weather Forecasting / Tidal Predications & Monitoring Tender Traffic Control Procedures Tender Proforma and Passage Planning Tender Pack	5	5	5	5	5	2	8	8	4	6	5.75	Most likely: Tender has slow speed impact with buoy resulting in minimal damage. Worst credible: Tender has high speed impact with pontoon resulting in significant damage to tender and loss of life.
1.3	Grounding	System Failure Human Error Environmental Conditions Uncharted Object	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans Conservancy Tender Proforma and Passage Planning Tender Pack	4	4	4	4	4	2	4	4	4	4	4	Most likely: Tender grounds in soft mud and refloats on following tide with damage. Worst credible: Tender hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans Conservancy Tender Proforma and Passage Planning Pack Tender	1	5	5	2	5	1	5	5	3	5	4.375	Most likely: Tender sinks, all crew and passengers safely abandon ship Worst credible: Tender sinks resulting in total loss of vessel and loss of life.
1.5	Fire	System Failure Human Error Environmental Conditions	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans	3	3	3	3	6	2	8	8	4	8	5.375	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	FTNS Weather Forecasting / Tidal Predictions Legislation & Guidance Emergency Plans Conservancy Tender Proforma and Passage Planning Pack	3	3	3	3	3	2	6	6	6	4	4.25	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.

Content Rev	iewed	Changes Made	
Greatly reduced amount of cruise training impacted the amoun		Causes / controls simplified - definitions tab added for greater of	detail.
FORTH PORTS LIMITED	Document ID FP PMSC RA (F) 15/05	Risk Assessment Team / Date MM, DMM, HMFO March 2014	
Risk Assessment - Cruise Vessel Tender Operations (Hound Point /	Review Due Aug-23	Revised By / Date AMM, August 2021	



	Port of Leitl	n - Arrival / Sailing Le	eith Approach Buoy to Berth with Jack-Up	Bar	ge o	on L	Leit	h Ap	pro	ach	nes				MRFs: 23/21 (Contact), 12/21 (contact), 081/20 (Contact), 075/20(Allision), 044/20 (Contact), 043/20
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Mc	red at level ost Lik Overa	l kely)		((Wor	level st Cre	t Resid I edible) all Risk)	Risk Score	(Contact), 031/20 (Contact), 020/20 *(Contact), 21/20 (Contact), 41/19 (Allision), 74/19 (technical malfunction), 81/19 (contact), 084/19 (contact)
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard F	
1.1	Collision / Allision	System Failure Human Error Environmental Conditions Jack-Up Barge in Approach Channel	Pilotage (Compulsory over 40m) Console Controller FTNS (Notice to Mariners) Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage (Additional Towage assessed on case by case basis) Aids to Navigation Conservancy Vessel moves assesed on case by case basis with regards to manoeuvrability	4	7	10	6	10	2	6	6	6	6	7.125	Most Likely: Collision with small vessel / Jack-up Barge resulting in minor damage. Worst Credible: Collision involving cargo vessel and Jack-Up Barge. Resulting in the loss of vessel , barge and loss of life.
1.2	Contact	System Failure Human Error Environmental Conditions Jack-Up barge at Jetty	Pilotage (Compulsory over 40m) Console Controller FTNS (Notice to Mariners) Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage (Additional Towage assessed on case by case basis) Aids to Navigation Conservancy Vessel moves assesed on case by case basis with regards to manoeuvrability	5	7	10	6	10	2	6	6	6	6	7.125	Most Likely: Slow speed impact with quay resulting in minimal damage to vessel or jetty.
															Worst Credible: Large impact resulting in extreme damage to vessel and infrastructure. Quayside no
1.3	Grounding	System Failure Human Error Environmental Conditions Change of Approach to due to Jack-Up Barge	Pilotage (Compulsory over 40m) Console Controller FTNS (Notice to Mariners) Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage (Additional Towage assessed on case by case basis) Aids to Navigation Conservancy Vessel moves assessed on case by case basis with regards to manoeuvrability	3	3	6	6	3	2	6	8	8	10	6.25	longer able to operate and vessel requiring repair possible death / loss of containment. Most Likely: Vessel grounded in soft mud and floats on following tide without damage. Worst Credible: Vessel hard aground, cannot be refloated at the Port entrance. Port is closed indefinaitly and major damage to vessel.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	1	4	4	5	4	1	4	4	5	5	4.375	Most Likely: Vessel sinks in approach to port, total loss of ship, and crew abandon ship.
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Forth Byelaw & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information	1	3	3	3	2	1	4	4	3	4	3.25	Worst Credible: Vessel sinks in approach to port, total loss of ship and crew. Most Likely: Small fire on-board quickly extinguished.
1.6	Loss of Containment (Oil Products)	System Failure Human Error Environmental Conditions	Pilotage Console Controller FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Aids to Navigation Conservancy	3	3	3	6	6	1	2	3	4	4	3.875	Worst Credible: Uncontrollable fire, total loss of vessel, crew and cargo. Most Likely: Small spill of non-persistent product. Worst Credible: Large scale spill which cannot be contained resulting in port closure and extensive environmental impact.
	Loss of Dock Level (Lock Gate Operations)	System Failure Human Error Environmental Conditions	Lockgate operational procedures Port Planned Maintenance system Lock Gates - Interlocks to prevent opening all lock gates simultaneously Training / Auditing of Port Staff	3	3	3	3	9	1	5	5	4	5	4.625	environmental impact. Most Likely: Loss of containment but does not result in significant loss of dock level. Possible impact to large draft movements. Worst Credible: Large loss of dock level. Deep drafted vessel take the bottom of dock. Possible large scale damage to vessels and infrastructure.

Content Reviewed	Changes Made
MRFs and POLREPs reviewed.	
Overall vessel numbers calling at Forth, also vessel type and size.	
Number, nature, and size of ongoing projects.	
	Causes simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED		Risk Assessment Team / Date MM, MO / 11th October 2021							
Risk Assessment - Port of Leith	Review Due Oct-23	Revised By / Date							



	Tay River Passage - Standard Vessel														
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris	(Mc	level st Li	kely)			(Wors	ed at R level t Credi	ble)	ıal	Risk Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People		Environmen t	Business	Likelihood		Property Environmen	_	Dusiliess	Hazard Ris	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	2	4	2	2	1	5	5	5 4	4	3.625	Most Likely: Collision with small lesuire craft. Worst Credible: Collision with cruise vessel.
1.2	Contact	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	6	3	3	1	5	5	4 4	4	4.125	Most Likely: Contact with ATON's while underway in fairway. Worst Credible: Extremly heavy landing structural damage to Quay and vessel
1.3	Grounding	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	2	6	4	6	2	10	10 1	0 1	0	7.25	Most Likely: Grounding on soft material, no loss of containment and vessel able to float off on following tide Worst Credible: Grounding on solid sea bed, loss of containment vessel unable to refloat.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	4	5	4	4	2	10	10 1	0 8	В	6.875	Most Likely : slow sinking Worst Credible: fast sinking
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Weather Forecasting / Tidal Predictions Emergency Plans	3	6	6	6	3	1	5	5 5	5 5	5	5.125	Most Likely: Small fire onboard, quickly extinguished. Worst Credible: Tanker uncontrolable fire, vessel total loss.
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Vetting (Tankers)	1	1	2	3	3	1	3	5 8	5 5	5	3.375	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closure and extensive environmental impact.
1.7	Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Consensancy	1	1	3	1	2	1	5	5	5 5	5	3.375	Most Likely: Allsion with small leisure vessel. Worst Credible: Allision with large cruise vessel.

Content Reviewed	Changes Made
All content reviewed	Causes / controls simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (T) 1/05	DMM, HMD 13th Dec 2012
Risk Assessment - River Passage Tay	Review Due	Revised By / Date
(General)	Aug-23	AMM August 2021



		Port of Dundee - A	rrival/Sailing Close Approaches to	Rive	er B	Ber	ths								
Ref.	Hazard	Causes	Controls		Res	sidua	ored al lev likely	el		Res	idual	red a	1	Score	
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	Likelihood	r	Ove	rall R	isk	Likelihood	\mathbf{I}		all Ri	_	Hazard Risk S	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Ads to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	4	6		4	1	3	4	3	4	3.75	Most Likely: Collision with small lesuire craft. Worst Credible: Collision with berthed cruise vessel
1.2	Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	Pilotage FTNS Legislation & Guidance Adis to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Outpayled Clear from Obstructions Port Assistant AIS Beacon on Horseshoe Buoy	4	8	8	4	8	2	6	6	8	8	7	Most Likely: Heavy landing on Quay with minor damage Worst Credible: Extremly heavy landing structural damage to Quay and vessel
1.3	Grounding	System Failure Human Error Environmental Conditions	Plotage FTNS Legislation & Guidance Adds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	3	3	6	1	2	4	3	4	3.5	Most Likely: Grounding on soft material, no loss of containment and vessel able to float off on following tide Worst Credible: Grounding on solid sea bed, loss of containment vessel unable refloat.
1.4	Sinking / Capsize	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	4	4	3	4	1	5	5	5	-5	4.375	Most Likely: slow sinking Worst Credible: fast sinking
1.5	Fire / Explosion	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Legislation & Guidance Adds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	9	9	6	6	1	5	5	5	8	6.625	Most Likely: Small fire onboard, quickly extinguished . Worst Credible: Tanker uncontrolable fire, vessel total loss.
1.7	Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Adis to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	1	3	1	2	1	5	5	O)	5	3.375	Most Likely: Allsion with berthed vessel or rig with minor damage. Worst Credible: Allision with berthed cruise vessel significant damage.
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Legislation & Guidance Adds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	3	6	3	1	2	4	4	5	3.75	Most Likely: Ballast water contaminated and discharged causing minimal pollution. Worst Credible: Full loss of cargo.

Content Re	eviewed	Changes Made
All content reviewed		Causes / controls simplified - definitions tab added for greater detail
FORTH PORTS LIMITED	Document ID FP PMSC RA(T) 2/05	Risk Assessment Team / Date DMM. HMD 13th Dec 2012
Risk Assessment - Dundee	Review Due	Revised By / Date
Arrival/Sailing Port Approaches to	Aug-23	AMM August 2021



	Port of Dundee - Large Vessel - Arrival/Sailing Port Limits to Berth														
Ref.	Hazard	Causes	Controls			Overa					Overs	II Risk		×	
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard Risk Score	
1.1	Collision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legishation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	4	8	4	6	1	5	5	5	5	5.25	Most Likely: Collision with small lesuire craft. Worst Credible: Collision with berthed cruise vessel.
12	Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	Pilotage FTNS Legislation & Guidance Adis to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	3	3	g	3	6	1	3	5	4	5	4.75	Most Likely: Heavy landing on Quay with minor damage Worst Credible: Extremly heavy landing structural damage to Quay and vessel
1.3	Grounding	System Fallure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	2	4	4	4	1	2	4	5	5	3.75	Most Likely: Crounding on soft material, no loss of containment and vessel able to float off on following tide: Worst Credible: Grounding on solid sea bed, loss of containment vessel unable to refloat.
1.4	Sinking / Capsize	System Fallure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	5	5	5	5	1	5	5	5	5	5	Most Likely: Stow sinking Worst Credible: Fast sinking
1.5	Fire / Explosion	Collision/Allision Contact Grounding Human Error Technical Failure Loss of Containment	Pilotage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	2	8	8	6	6	1	5	5	5	5	6	Most Likely: Small fire ornboard, quickly estinguishe
1.6	Loss of Containment (oil products)	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidence Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy Vetting (Tankers)	2	2	4	4	4	1	3	4	5	5	3.875	Most Like; I Balast water contaminated and discharged causing minral golden. Worst Credible: Full loss of cargo.
1.7	Allision	System Failure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Conservancy	1	1	3	1	2	1	5	5	5	5	3.375	Most Likely, contact with anchored vessel causing minimal damage. Woss Credible: Alliston with berified cruise vessel causing algricant damage.

Content Reviewed	Changes Made
All content reviewed	Causes / controls simplified - definitions tab added for greater detail.

		Risk Assessment Team / Date DMM, HMD 13th Dec 2012
Risk Assessment - Large Tanker		Revised By / Date
Arrival/Sailing Port Limits to	Aug-23	AMM, August 2021
Berth		



	Port of Dundee - Oil Rigs - Arrival/Sailing Port Limits to Berth											MRF: 048/20 (contact)			
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	F	(M	lev ost L			,	Re:	k sco sidua rst Cr Over	l lev	el ole)	Hazard Risk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard F	
1.1	Callision	System Failure Human Error Environmental Conditions	Plictage FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning meeting Conservancy Towage Audit Declaration / Tug Vetting	2	4	4	4	4	1	4	5	2	4	3.875	Most Likely: Collision with small leisure craft while underway. Worst Credible: Collision with standard vessel in fairway.
	Contact	System Failure Human Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay Communication Error	Pilotago / Townaster FTNS Legislation & Guidance Alds to Navigation Weather Forecasting Tidal Predictions Emergency Plants Towage Planning meeting Conservancy Additional Fendering (if achievable on berth) Towage Audit Declaration / Tug Vetting Simulation Trials	3	3	9	3	6	1	3	5	3	4	4.5	Most Likely: Contact with navigational buoy Worst Credible: Contact with berthed vessel/rig
1.3	Grounding	System Fallure Human Error Environmental Conditions	Pilotage FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Toweage Conservancy Towage Audit Declaration / Tug Vetting Simulation Trials Horshoe Buoy Identified by AIS Unit Port Entry Light/Virtual Buoys	2	2	2	4	6	1	1	1	4	5	3.125	Most Lkely: Grounding on soft material, no loss of containment and vessel able to float off on following tide Worst Credible: Grounding on solid sea bed, loss of containment vessel unable to refloat.
	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	Pilotage / Townaster FTNS Lagislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning meeting Conservancy Towage Audit Declaration / Tug Vetting Simulation Trials	1	4	4	3	4	1	4	4	5	5	4.125	Most Likely: Sinking of rig outside of navigational channel no loss of containment. Worst Credible: Sinking within navigational channel loss of containment.
	Fire / Explosion	Collision Contact Human Error Technical Failure Loss of Containment	Pilotage / Townsster FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plant Towage Planning meeting Conservancy Towage Audit Declaration / Tug Vetting	3	6	6	3	6	1	5	5	4	5	5	Most Likely: Small fire on vessel, extinguished on board Worst Credible: Large fire on rig, complete loss.
1.6	Loss of Containment (oil products)	System Fallure Human Error Environmental Conditions	Pilotago / Townaster FTNS Legislation & Guidance Adds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Towage Planning meeting Conservancy Towage Audit Declaration / Tug Vetting Bunkering Procedure	2	2	2	6	4	1	1	1	4	5	3.125	Most Likely: Small loss of non-persistant oil product Worst Credible: Large spill of persistant product

Content Reviewed	Changes Made
All content reviewed	Causes / controls simplified - definitions tab added for greater detail.

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (T) 5/05	DMM, HMD 09th January 2013
		·
Risk Assessment - Port of Dundee	Review Due	Revised By / Date
- Oil Pine - Arrival/Sailing Port	Aug-23	AMM August 2021



	Tay - River Transit + Berthing/Sailing Small Commercial Craft (Tugs, Workboats etc.)									MRF:					
Ref.	Hazard	Causes	Controls	Risi		leve	el	sidual		Risk Resid	lual le	evel		Score	
	What can go wrong (Event leading to a consequence)	How can it go wrong	Preventative & Reactive (What action & how frequent)	poo	<u> </u>	Over	ikely) rall Ri	sk	T	\vdash	verall	Risk	_	Risk	
				Likelihood	People	Property	Environmen	Business	Likelihood	People	Property	Environmen	Business	Hazard	
1.1	Collision	Technical Failure Bridge Team Error Environmental Conditions	FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs	3	3	6	6	3	2	8	6		8	5.5	Most Likely: Collission with leisure user on river. Worst Credible: Collision with other small vessel causing loss of bot vessels.
1.2	Contact	Technical Failure Bridge Team Error Environmental Conditions Change to Shore Infrastructure / Obstruction on the Quay	FTNS Legislation & Guidance Alds to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs	5	5	5	5	5	2	6	6	4	6	5.25	Most Likely: Light contact with the quayside while berthing. Worst Credible: Contact with another berthed small vessel.
1.3	Grounding	Technical Failure Bridge Team Error Environmental Conditions Surveying Omission	FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs Conservancy	3	3	3	3	3	1	3	4	2 ;	3	3	Most Likely: Grounding of smalli vessel on soft silt, refloated on sam tide (tidal basin). Worst Credible: Grounding on hard rock, causing loss of containment, unable to refloat on same tide.
1.4	Sinking / Capsize	Collision Contact Grounding Technical Failure Bridge Team Error	FTNS Legislation & Guidance Aids to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs	2	6	8	4	6	1	3	4	3	4	4.75	Most Likely: sinking o small vessel outside of navigational channel, r loss of containment. Worst Credible: Sinking of small vessel within navigational channel with loss of containment.
1.5	Fire / Explosion	Collision Contact Grounding Human Error Technical Failure Loss of Containment	FTNS Tay Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Survey / dredging Programme / Schedule Plict Vessel training & Certification Good Housekeeping Towage Guidelines Small Vessel SMS	3	3	3	3	3	1	4	4 :	2 :	3	3.125	Most Likely: small fire which is extinguished by crew. Worst Credible: Major fire leading to total loss of vessel.
1.6	Loss of Containment (oil products)	Collision Grounding Human Error Contact Technical Failure Sinking / Capsizing Fire / Explosion Environmental Conditions	FTNS Legislation & Guidance Aldis to Navigation Weather Forecasting / Tidal Predictions Emergency Plans Audits Liaison with Local Authoritys & Boat Clubs Bunkering Procedure	4	4	4	8	4	1	1	2 :	3 :	3	3.625	Most Likely: Small loss of non-persistant oil product. Worst Credible: Large spill of persistant product.

Content Reviewed	Changes Made
All content reviewed	Causes / controls simplified - definitions tab added for greater detail. Pilot Vessels removed as they have own SMS & Ras

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (T) 6/04	DMM, HMD 09th January 2013
		·
Risk Assessment - River Tay	Review Due	Revised By / Date
Transit + Berthing/Sailing Small	Aug-23	AMM, August 2021



	Forth & Tay - Vessels at Anchor															
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Preventative & Reactive				Risk scored at Residual level (Most Likely)					dual	Risk Score	MRF: 022/22 Loss of Anchor 069/21 (Dragging Anchor) 050/20 (fouled anchor), 049/20(fouled anchor), 017/18 (Dragging Anchor)	
				Likelihood	People	Ι.	Environmen t	Business	Likelihood	People	Property	_	Business	Hazard R		
1.1	Dragging Anchor	Environmental Conditions Human Error / Failure System Failure	Designated and Proven Anchorages FTNS Weather Forecasting / Tidal Predictions Towage Byelaws & General Directions Pilotage Emergency Plans / OPRC	5	5	5	5	5	2	8	10	10	10	7.25	Most likely: Vessel drags anchor, then pays out more chain resulting in no further dragging. Worst credible: Vessel drags anchor resulting in vessel going aground or making contact with bridge/jetty. Vessel suffers extreme damage and possibbilty of loss of life.	
1.2	Contact	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Towage Byelaws & General Directions Weather Forecasting / Tidal Predictions Designated and Proven Anchorages Notice to Mariners Emergency Plans / OPRC	2	4	6	4	4	1	5	5	5	5	4.75	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Vessel has high speed impact with bridge/jetty resulting in significant damage to vessel and loss of life.	
1.3	Grounding	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) Passage plan — master / pilot information exchange FTNS Towage Weather Forecasting / Tidal Predictions & Tidal Monitoring Designated and Proven Anchorages Emergency Plans / OPRC	2	2	4	2	4	1	1	5	5	5	3.5	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.	
1.4	Sinking / Capsize	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions	3	3	3	3	3	1	5	5	5	5	4	Most likely: Vessel sinks, all crew safely abandon ship Worst credible: Vessel sinks resulting in total loss of vessel, and loss of life.	
	Fire / Explosion	Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting	1	2	2	1	1	1	5	5	5	5	3.25	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.	
1.6	Loss of Containment (Oil Products)	Environmental Conditions Human Error / Failure System Failure	Pilotage (typically only Cruise vessels @ Newhaven + South Queensferry) FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Notice to Mariners Marine Guidelines & Port Information Bunkering Procedure	3	3	3	3	3	2	4	10	10	10	5.75	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.	

Content Reviewed	Changes Made
All	Updated Causes to new standard
Controls	Specified that pilotage is only used for Cruise vessels @ Newhaven/ S Queens.
Dragging Anchor	Decrease in Most Likely Property Risk
Contact	Decrease in Most Likely Business Risk
Grounding	Most likely risks reduced
Loss of Containment	Most Likely Risks reduced / Worst Credible Likelihood and risk increased
	·

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 1/06	DMM, HMFO, HMFI, HMD, MT&PV / 11th Jan 2013
Risk Assessment - Vessels at Anchor	Review Due	Revised Bv / Date
	Jul-24	July 2022, MMT



			Forth & Tay - Towage Operations												
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Likelihood		ost L Ove	el ∟ikely) erall R			(Wors	Property Pro	ible) Risk		S	MRF: 29/2022 (Loss ofComms)23/2022 (Contact)20/2022 Contact) 14/2022 (Contact) 13/2022 Contact) 03/2022 (Contact) 03/2022 (Contact) 03/2022 (Contact) 03/2022 (Contact) 03/2021 (Longoruso occurence) 016/2021 (Longoruso bridel) 07/02/(contact), 02/20(collision), 005/20(contact), 002/20(contact), 01/20(Contact), 106/19 (incorrect bridel), 082/19 (potential grounding), 080/19 (parted towline), 074/18 (Grounding), 026/19 (Contact)
1.1	Capsizing / Flooding	Environmental Conditions Human Error / Failure System Failure	Towage Guidelines Tug SMS FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions Pilotage Crew Training Pre Operations Checks/ Briefings	3		3	Ш		2		10 1				ost Likely: Tug experiences girting but is able to recover with no significant consequence/damage
1.2	Fire	Environmental Conditions Human Error / Failure System Failure	FTNS Tug SMS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting Marine Guidelines & Port Information Notice to Mariners Crew Training & Certification Good Housekeeping Towage Guidelines	2	4	4	2	4	1	5	5	5 5	4.	. 25	ost Likely: Vessel suffers a minor fire which is extinguished quickly and results in no significant damage
1.3	Allision	Environmental Conditions Human Error / Failure System Failure	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predications Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Tue SMS Correct Tables (Cuellifications	5	5	10	5	10	2	10	10	5 10	8.	125 M.ve	ost Likely: Vessel makes minor contact with pier/jetty/object resulting in no significat damage to either th essel or object and no injuries forst Credible: Vessel makes heavy conact with an object resulting in significant damage to both the essel and object with injuries/fatalities
1.4	Collision	Environmental Conditions Human Error / Failure System Failure	Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predications Marine Guidelines & Port Information Towage Guidelines Notice to Mariners Turs SMS Core Training (Qualifications	2	2	4	2	4	1	5	5	5 5		4 M	ost Likely: Tug collides with another vessel at slow speed resulting in no significant damage to either sesel and no injuries forst Credible: Tug collides with another vessel at high speed resulting in possible loss of the vessels and juries/fatalities
1.5	Grounding	Environmental Conditions Human Error / Failure System Failure	FTNS Byelaws & General Directions Emergency Plans Weather Forecasting / Tidal Predications - spelling Marine Guidelines & Port Information Towage Guidelines Notice to Mariners The State Communication (Challifications) Changes Made	3	6	9	3	9	2	10	10 1	10 10	8.	375 Mid	ost Likely: Vessel reuns aground but suffers no significant damage and is able to be refloated with the

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Grounding	Increase in likelihood - Grounding
Man Overboard / Personal injury	Removed - RA included in Towage Risk assesments
Fire	Removed - Control - Latest sounding chart availiable
Contact	Changed to Allision
Allision	

MT&PV, MM, HMFO, DMM, HMD / 13th Feb 2013
Revised By / Date
July 2022, MMT



	Forth & Tay - Immobilised Vessels (at Anchor or Alongside)									MRF 015/15 (Fire) 072/19 (Fire)					
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Mc	level st Lil				(Wors	level	dible	e)	Risk Score	
	(= oncode ing to a sensequence)		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Likelihood	People		Environmen t	Business	Likelihood		Property	_	Business	Hazard Ri	
1.1	Allision Refer also to FP PMSC RA (F&T) 1	Human Error Technical Failure Enviromental Conditions	Byelaws & General Directions Weather Forecasting & Monitoring Marine Guidelines & Port Information Standby Tug at Anchor FTNS Extra Moorings	2	4	6	4	2	2	6	8	8	8	5.75	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Vessel has high speed impact with bridge/jetty resulting in significant damage to vessel and loss of life.
1.2	Grounding Refer also to FP PMSC RA (F&T) 1	Human Error Technical Failure Enviromental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting & Monitoring Marine Guidelines & Port Information Notice to Mariners Standby Tug at Anchor	3	3	3	3	3	1	3	5	4	5	3.625	Most likely: Vessel grounds in soft mud and refloats on following tide with minimal damage. Worst credible: Vessel hard aground, cannot be refloated resulting in major disruption to ports, extreme damage and loss of contaminent.
1.3	Fire / Explosion Refer also to FP PMSC RA (F&T) 1	Human Error Technical Failure	Pilotage FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting	3	6	9	3	6	1	5	5	5	5	5.5	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.

Full review	
	Causes updated to match with standard causes in definitions
Contact - Changed to Allision	Most Likely Business Risk reduced
	Worst Case Likelihood and People risk increased
Grounding	Most Likelly Likelihood increased + All risks increased
·	Worst Case Business risk increased
Fire/Explosion	Most Likely People Risk increased / Environmental risk decreased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 3/06	MM, DMM / 26th Feb 2013
Risk Assessment - Immobilised	Review Due	Revised By / Date
Vessels	Jul-24	July 2022, MMT



	Forth & Tay - Bunkering Operations In Dock											POLREP (Leith) 07/18 - 97/19 (Gmth bunker without permission)			
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)		(Me	ored a level ost Li	l kely)			(Wo	lev orst C	at Res rel rediblerall Ri	e)	Risk Score	
				Likelihood	People	Property	Environmen t	Business	Likelihood	People	Property	Environmen	Business	Hazard R	
1.1	Collision with bunker vessel and receiving vessel	Human Error Technical Failure Enviromental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Maniners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring/Unmooring Procedures Terminal Procedures Lock Gates Bunkering Procedures	2	6	6		2	1	5	5		5	4.5	Most likely: Slow speed collision between both vessels resulting in minimal damage and no loss of containment Worst credible: Heavy collision between both vessels resulting in extreme damage, loss of life and loss of con
1.2	Contact	Human Error Technical Failure Enviromental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To MannerS Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring Procedures	3	3	6	3	3	2	8	10	8	8	6.125	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Vessel has high speed impact with quayside resulting in significant damage to vessel and loss of life.
	Loss of Conrainment (Oil Products)	Human Error Technical Failure Enviromental Conditions	Pilotage FTNS - Scheduling, VTS Forth Bylaws & General Directions N To M Emergency Plans / OPRC Weather Forecasting Weather Parameters Fenders either side of manifold Mooring Procedures Bunkering Procedure Vetting (Bunker Vessel) Bunkering Procedures Lock Gates Port Traffic Managment	3	3	3	3	3	1	1	4	4	5	3.25	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
1.4	Fire/Explosion	Human Error Technical Failure	Pilotage FTNS - Scheduling, VTS Bylaws & General Directions Notices To Mariners Emergency Plans / OPRC Weather Forecasting Weather Forecasting Weather Parameters Bunkering Procedure. Mooring Procedures Vetting (Bunker Vessel)	1	2	2	2	1	1	5	5	5	5	3.375	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Collision	Worst Case - Env risk increased
Contact - Changed to Allision	Most Likelihood increased
	Worst Case People Risk increased
Loss of containment	Most Likely Environ / Business increased
	Worst Case People/ property risk decreased + Business risk decreased
Fire/Explosion	Most likely All risks decreased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 4/06	HMFO, HMFI, MM, HMD, DMM 20th Feb 2013
Risk Assessment - Bunkering	Review Due	Revised By / Date
Operations In Dock	Jul-24	July 2022, MMT



	Forth & Tay - Bunkering Operations Tidal Waters											MRF: 05/2022 (Mooring Line Parting) 04/2022 (Mechanical fail			
Ref.	Hazard	Causes	Controls Preventative & Reactive	Ris	k sco	red at level		idual			leve	it Resi		Score	
	What can go wrong (Event leading to a consequence)	How can it go wrong	(What action & how frequent)	В	_	Overa		sk		ì	Over	all Ris	_	Risk	
				Likelihood	People	Property	Environmen t	Business	Likelihood	People	Property	Environmen t	Business	Hazard	
1.	Collision with bunker vessel and receiving vessel	Human Error Technical Failure Enviromental Conditions	Pilotage Passage plan / berthing plan — master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring/Unmooring Procedures Bunkering Procedure	3	6	6	3	3	1	4		5	5	4.625	Most likely: Slow speed collision between both vessels resulting in minimal damage and no loss of containment Worst credible: Heavy collision between both vessels resulting in extreme damage, loss of life and loss of containment
1.2	Contact	Human Error Technical Failure Enviromental Conditions	Pilotage Passage plan / berthing plan – master / pilot information exchange FTNS - Scheduling,VTS Bylaws & General Directions Notice To Mariners Weather Parameters Emergency Plans / OPRC Tugs Fenders Mooring Procedures Bunkering Procedure	2	4	2	2	2	1	5	5	5	5	3.75	Most likely: Vessel has slow speed impact with buoy resulting in minimal damage. Worst credible: Vessel has high speed impact with quayside resulting in significant damage to vessel and loss of life.
1.5	Loss of Containment (Oil Products)	Human Error Technical Failure	Pilotage FTNS - Scheduling, VTS Bylaws & General Directions N To M Emergency Plans / OPRC Weather Forecasting Weather Parameters Fenders either side of manifold Mooring Procedures Bunkering Procedure Vetting (Bunker Vessel) Oil Pollution response standby vessel	3	3	3	3	6	1	1	4	5	5	3.75	Most likely: Small spill of non-persistant product that dissipates naturally. Worst credible: Large scale spill which cannot be contained resulting in port closures and extensive environmental impact.
1	Fire/Explosion	Human Error Technical Failure	Pilotage FTNS - Scheduling, VTS Bylaws & General Directions Notices To Mariners Emergency Plans / OPRC Weather Forecasting Weather Parameters Tugs Bunkering Procedure. Mooring Procedures Vetting (Bunker Vessel) Bunkering Procedure	1	2	2	2	1	1	5	5	5	5	3.375	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Collision	Most Likely All Risks decreased
Contact - Changed to Allision	Most Likely - Likelihood decreased and people / property decreased
	Worst Case - People/ Env / Business risk increased
Loss of Containment	Most Likely - All risks increased
	Worst Case - People / Env / Business Risks increased Property risk decreased
Fire / Explosion	Most Likely All Riskd increased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 5/06	HMFO, HMFI, MM, HMD, DMM 20th Feb 2013
Risk Assessment - Bunkering	Review Due	Revised By / Date
Operations Tidal Waters	.lul-24	July 2022 MMT



	Forth & Tay - NAABSA Berths								No relevant MRF's since previous review						
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Me	leve ost Li	nt Res el ikely)			(Wors	red at level at Cree	dible	•)	Risk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People		Environment	Business	Hazard Ris	
1.:	² Capsize/Flooding	Human Error Technical Failure Enviromental Conditions	FTNS Byelaws & General Directions Emergency Plans / OPRC Weather Forecasting / Tidal Predictions NAABSA Berth Procedure NAABSA Berth Inspections Survey Programme	2	2	2	4	2	1	5	5	5	5	3.75	Most likely: Vessel takes on water which is contained resulting in no long term damage to the vessel and no injury Worst credible: Vessel capsizes resulting in total loss of vessel and multiple fatalities
1.	3 Fire	Human Error Technical Failure Enviromental Conditions	NAABSA Berth Procedures Emergency Procedures Welcome Pack	3	6	9	3	6	1	5	5	5	5	5.5	Most likely: Small fire on board which is quickly and easily extinguished. Worst credible: Uncontrollable fire, total loss of vessel, and loss of life.
1.	Hull Damage	Human Error Enviromental Conditions	NAABSA Berth Procedures Emergency Procedures Welcome Pack NAABSA Inspections Survey Programme Weather Forecasting / Tidal Predictions & Monitoring Byelaws & General Directions	1	1	2	1	3	1	5	5	5	5	3.375	Most likely: Vessel suffers minor hull damage which can be easily repiaired and no injuries occur. Worst credible: Vessel suffers extensive hull damage resulting in flooding

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Lack of Containment	Removed
Contact	Removed
Capsize / Flooding	Most Likely - Likelihood and Risks reduced
Fire	Most Likely - Likelihood increased and Property risk reduced
	Worst Case - Likelihood decreased, Environment Risk increased
Hull Damaged	Most Likely - Likelihood decreased, Property and env risk decreased
	Worst Case - Likelihood decreased, all risks increased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 06/06	DMM, HMFO, HMFI, HMD, MT&PV / 11th Jan 2013
Risk Assessment - NAABSA Berths	Review Due	Revised By / Date
	Jul-24	July 2022 MMT



	Forth & Tay - Diving Operations										No relevant MRFs since previous review				
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		red at level ost Lik		dual			ed at I level at Cred	Residua lible)		Score	
	(Event leading to a consequence)		(What action & how frequent)	Likelihood	People	Dvera https://doi.org/10.000/10.0000	Environment III	k Business	Likelihood	People	P.	Risk Business		Hazard Risk	
1.1	Swamping / turbulence / interaction	Human Error Enviromental Conditions	Forth Ports Dive Procedure (Permit) Dive Signals displayed Established Communications FTNS Exclusion Zones Speed Restrictions Notice to Mariners Dive Supervisor Local Monitoring	3	9	6	3	6	2	10	4	2 10	6		Most Likely: Passing vessel comes too close or passes at speed which will alarm divers and possibly result n minor injury. Worst Credible: Passing vessel comes too close or passes at speed which results in fatality to diver.
1.2		Human Error Enviromental Conditions	Forth Ports Dive Procedure (Permit) Established Communications FTNS Exclusion Zones Notice to Mariners	1	3	2	1	2	1	5	5	3 5	3	.25	Most Likely: Vessel makes contact with diver / dive boat resulting in minor injuries. Worst Credible: Vessel makes contact with diver / dive boat resulting in fatalities and loss of dive boat.

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Swamping	Most Likely - People, Property and Buisness Risks increased
	Worst Credible Likelihood and buisness risk increased, Property and Environment Risk increased
Contact	Most Likely - Business Risk increased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 7/04	HMFI/HMFO/HMD/MM/CHM 03rd Sep 14
Risk Assessment - Diving Operations	Review Due	Revised By / Date
	Jul-24	July 2022 MMT



		Forth & Tay - Recreational Events (e.g.swim events)												MRF 068/2018 - Swim Event	
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(M	leve lost Li	el			(Wor	red at level st Cre	dible)		Risk Score	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Environment	Business	Hazard Ri	
1.	1 Collision / contact	Human Error Enviromental Conditions	Event Notification Form Notice to Mariners Exclusion Zones (as considered appropriate) FTNS Planning Meetings (Where appropriate) Appropriate Safety Craft Established Communications Localised monitoring by Event Organisers	2	6	2	2	6	1	5	2	3	5	3.875	Most Likely: Contact between participant and other water user resulting in alarm or minor inury. Worst Credible: Contact between participant and other water user resulting in fatality.
1.	Swamping / interaction / turbulence	Human Error Enviromental Conditions	Event Notification Form Notice to Mariners Exclusion Zones (as considered appropriate) FTNS Planning Meetings (Where appropriate) Appropriate Safety Craft Established Communications Localised monitoring by Event Organisers	2	6	2	2	2	1	5	5	3	5	3.75	Most Likely: Passing vessel comes too close or passes at speed causing alarm and possibly result in minor injury. Worst Credible: Passing vessel comes too close or passes at speed which results in falality.

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Collision	Most Likely - Property Risk increased
	Worst Credible - Property and Environment Risk decreased / Buisness risk increased
	Most Likely - People Risk increased
Swamping	Worst Credible - Property, Environment and business risk increased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 8/04	HMFI/HMFO/HMD/MM/CHM 03rd Sep 14
Risk Assessment - Recreational	Review Due	Revised By / Date
Events	Jul-24	July 2022, MMT



	Forth & Tay - Underwater Cables & Pipelines										No relevant MRFs since previous review			
Ref.	Hazard What can go wrong (Event leading to a consequence)	Causes How can it go wrong	Controls Preventative & Reactive (What action & how frequent)	Ris	(Mos	ed at R level st Likel	•	I Ris	(Wors	level t Cre		1	k Score	
	(Etain leading to a consequence)		(maracion a non negatiny	Likelihood		Ι,	Business	Likelihood			ent	Business	Hazard Risk	
1.1	Contact	Human Error Technical Failure Enviromental Conditions	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	2	2		2 2	1	2		5	5	3.125	Most Likely: Minor contact is made with a pipeline/cable resulting in no significant damage Worst Credible: Pipleine/Cable receives heavy contact resulting in substantial damage causing widespread pollution or major loss of supply from cables
1.2	Fire / Explosion	Human Error Technical Failure Enviromental Conditions	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	1	1	1	1 1	1	3	5	5	5	2.75	Most Likely: Small fire at production end resulting in minimal impact to pipeline Worst Credible: Major fire/explosion at production end resulting in severe damage to a pipeline and extensive widespread pollution
1.3	Loss of Containment / Power / Communication	Human Error Technical Failure Enviromental Conditions	FTNS Emergency Procedures (Pipeline Damage Procedure) Pilotage Marine Guidelines & Port Information Byelaws & General Directions Exclusion Zone Survey Programme and Schedule Weather Forecast / Tidal Information & Monitoring Aids to Navigation	2	2	2	2 2	1	2	5	5	5	3.125	Most Likely: Minor loss of containment/supply which is rectified quickly and results in no widespread pollution/effects Worst Credible: Major loss of containment resulting in extensive and widespread pollution/loss of powere, data

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Pipeline Damage	Removed as similar to other hazards
Contact - changed to Allision	Most Likely - Property and Business risk increased
	Worst Credible - People risk decreased / Environment risk increased
Fire / Explosion	Most Likely - All risks reduced
	Worst Credible People Risk Reduced
Loss of Containment	Most Likely All risks reduced
	Worst Credible People risk reduced / Environment risk increased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date						
	FP PMSC RA (F&T) 9/03	CHM/MM 18th Feb 2015						
Risk Assessment - Underwater Cables & Pipelines	Review Due	Revised By / Date						
	Jul-24	July 2022, MMT						

		Marine Pollution (Tidal Waters)												POLREP: 05/2022 (Leaking Gangway Seal) 08/2021 (Cruise Tender)07/2021 (Oil sheen) 05/21 (Oil Sheen) 02/2021 (Cruise tender) Limeklins (19/2/19), N. Queensferry (12/8/19), Bridges (09/3/20), Pittenweem(15.11.20),
Ref.	Hazard What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	Ris		leve	nt Resi	idual			ed at R level t Credi	esidual ole)	Score	
	(Event leading to a consequence)	Them can it go mong	(What action & how frequent)			Over	all Ris	sk		(Overall	Risk	Risk S	
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Business	Hazard R	
4.4	Loss of Containment (oil product)	Human Error Technical Failure	FTNS Bunkering Procedure Byelaws & General Directions Pilotage Survey Programme / Schedule Marine Guidelines & Port Information Emergency Plans - OPRC Towage Guidelines Oil Terminal Guidelines Weather / tidal Forecasting & Monitoring Oil Spill Prediction Software Notice to Mariners	5	5	5	5	5	1	3	5 5	5	4.75	Most Likely: Minor pollution consisting of a light product which has no adverse effects on the marine environment and dissipates naturally Worst Credible: Major widespread pollution consisting of a heavy product which results in extensive adverse effects to the marine environment/wildlife requiring significant resources to tackle

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions
Loss of Containment	Most Likely EnvironmentRisk Decreased

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date
	FP PMSC RA (F&T) 10/03	CHM, MM, DMM, HMD / 12th August 2015
		•
Risk Assessment - Marine Pollution	Review Due	Revised By / Date
(Tidal Waters)	.lul-24	July 2022 MMT

	Marine Pollution (Enclosed Dock)										D1/2021 (Oil Sheen) 03/2021 (Oil Sheen) 04/2021 (Black Soot)06/2021 (Oil Sheen) Leith (19/2/19) (1/9/19), (07.04.20), (21.10.20) (27.1.21) Gmth - (17.6.20), (21.7.20), (9.12.20), (15.1.21)(18.3.21) Burntistand - (27.1.21)			
Re	What can go wrong	Causes How can it go wrong	Controls Preventative & Reactive	(M		level (Most Likely)			Risk scored at Residual level (Worst Credible)			le)	Score	
	(Event leading to a consequence)		(What action & how frequent)		Overall Risk		k	Overall Risk		Risk				
				Likelihood	People	Property	Environment	Business	Likelihood	People	Property	Business	Hazard	
			FTNS Bunkering Procedure Byelaws & General Directions Pilotage Survey Programme / Schedule Marine Guidelines & Port Information Emergency Plans - OPRC Towage Guidelines Oil Terminal Guidelines Notice to Mariners Lock Gates	5	5	5	5	5	1	5	5 5	5	5	Most Likely: Small scale pollution consisting of a light product which is contained within a dock and dissipates naturally Worst Credible: Major pollution consisting of a heavy product which cannot be contained with the dock and results in extensive damage to the marine environment requiring extensive resources to tackle

Content Reviewed	Changes Made
General	Causes updated to match with standard causes in definitions

FORTH PORTS LIMITED	Document ID	Risk Assessment Team / Date				
	FP PMSC RA (F) 11/03	CHM, MM, DMM, HMD / 12th August 2015				
Risk Assessment - Marine Pollution	Review Due	Revised By / Date				
(Encolsed Docks)	.lul-24	July 2022 MMT				