Environmental

Environmental Risk Analysis and Mitigation Plan

2024 Newport to Bermuda DOUBLEHANDED

S/V Artemisia USA43738

Item	Pollution Risk	Risk event	**Risk Event Frequency** (1 low chance of occurance-5 Certain chance)	**Severity** (1 Minimal impact -5 catastrophic impact)	**Risk Score** Severity x Freq (1 Least- 25 Worst) *>13 requires solid mitigation*	Mitigation 1	Mitigation 2	Mitigation 3	Mitigation Actions Achieved as of 5/24/2024
1	Diesel spill	Diesel Transfer from Jerry Cans	5	4	20	Spill Proof transfer pump	Oil Absorbent cloth	paper towels	*Built spill kit to carry on board comprised of oil absorbant towels, oil sorb sausage, absorbant towels, garbage bags to contain; carrying small battery operated transfer pump to eliminate need for pouring jerry cans*
2	Plastic litter	Plastic waste/litter going overboard	3	4	12	Remove and dispose of plastic wrappers prior to loading on board	Use recyclable AL foil in lieu of plastic wraps, AL cans in lieu of plastic bottles where possible.	bring reusable plastic containers for food instead of single use; repack snacks in refillable containers and recycle single use containers on land	*Crew briefing, pre-race prep to remove unnecessary plastic/repackage*
3	Black Water	Black water discharge in coastal/marine/protected waters.	2	3	6	Clearly label Y Valve positions	Lock on Y Valve	Crew briefing regarding discharge of waste and head use in port	*Crew briefing, replaced y valve with one that is clearly labeled jan 2024.*
4	Oil leaks into bilge	Oil/fuel leaks from engine- blown hose or component, loose fitting, etc	2	5	10	Engine inspection and proper restraint of hoses to prevent chafe	Cellulose oil-sorb pad in bilge	oil sorb pads stowed for use	*Inspected engine and replaced of worn hoses, added chafe sleeves to dedicated oil hoses; oil sorb pad in bilge under engine, regular inspection schedule includes daily bilge/engine check; spill kit from Item 1 replenished with additional absorbent towels for engine coolant, other fluids.*
5	Garbage	Having too much trash and not enough room to stow requiring legal discharge overboard	4	3	12	Remove and dispose of as much packaging as possible prior to loading on board	Dedicated recycling bin for metal/cans and recycable plastics apart from trash	Crew to bring reusable water bottles, insulated mug. Boat to provide metal utensils, reusable dishes. Boat to provision w/ bulk drinks (gatorade mix) instead of individual plastic water bottles, gatorades, etc.	*All 3 mitigations are enacted*
6	Bottom Paint	Bottom paint particles in sensitive marine environments with bottom cleanings, grounding, general use.	5	2	10	Maintain bottom in good condition to minimize particles introduced to local environment from bottom.	Maintain charts and adequate watch to reduce risk of grounding/damage from grounding.	Collect bottom washing runoff/do not clean in water in areas of increased environmental sensitivity	*mitigations 1, 2, 3 enacted.*
7	Other hazardous chemical	Cleaning and painting chemicals leak into bilge or water	4	3	12	Carry environmentally friendly cleaners, soap	Necessary chemicals, solvents, etc to be carried in secondary packaging to contain spill if primary container ruptures; Store these fluids on top of absorbent pads.	Tape or other mechanical means to secure container lids for hazardous or environmentally unfriendly liquids.	Spare engine fluids to have lids secured with tape,stored in large ziplock bags, and on top of absorbant pads. Carry white vinegar spray solution in lieu of other harsh chemicals for cleaning, minimize amount of acetone, solvents carried aboard.
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