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TECHNICAL UPDATE: 2019/12/26



## Operational feedback and problems reported after use of VLSFO

Viswa Lab has been in the fore front of handling VLSFO fuel quality and its related problems. We want to bring to your attention some of the problem cases that have been reported after VLSFO usage.

- 1. We have seen an increased number of VLSFO usage since October 2019 indicating that the maritime industry has already accepted the challenge and is taking the responsibility of IMO 2020 regulations head on.
- 2. As of December 2019, majority of the samples we tested are of VLSFOs and MGOs.

## **Operational Problems Reported to Viswa Lab**

As the uptake of VLSFOs continues, we are seeing an increase in fuel related problems. The below table shows the list of issues reported to us in December.

Case	Supply Date	Prob reported date	Port	Problems Experienced	Root Cause
1	6-Dec-19	27-Dec-19	Antwerp	Vessel has reported trouble of Purifier with heavy sludge formation inside purifiers only	High sediment
2	7-Oct-19	17-Dec-19	GIBRALTAR	Fuel frozen in the tank	High pour point
3	5-Nov-19	10-Dec-19	Everingen- Netherlands	Heavy sludge accumulation one of the purifier shut down on heavy vibrations. Due to this, internal parts of the purifier damaged	In progress
4	14-Nov-19	9-Dec-19	Ghent- Belgium	8 hrs of purifying of new VLSFO 0.5% found excessive quantity of paraffin	Unstable fuel
5	30-Oct-19	12-Dec-19	Galveston-TX	Sludge at the purifier	In progress
6	2-Dec-19	14-Dec-19	Rio De Janeiro-Brazil	Excessive liner wear in all units	In progress
7	17-Dec-19	20-Dec-19	Balboa – Panama	No.3 HFO Purifier got problem with sludge accumulated inside, was not de-sludging.	Possible incompatibility
8	14-Nov-19	9-Dec-19	Long Beach	Discharge port for No.1 VLSFO purifier blocked by oil sludge	Possible stability issues



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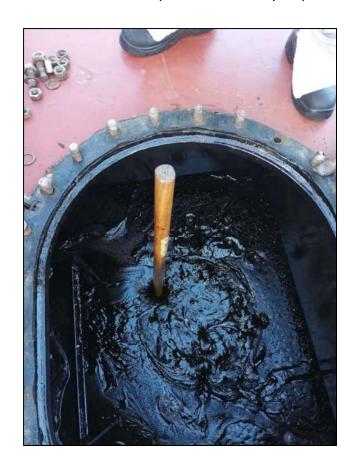
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9	NA	NA	NA	Premature liner wear- every three months	In progress
10	6-Dec-19	19-Dec-19	Long Beach	Fuel frozen in the tank	Wax deposition
11	15-Nov-19	27-Dec-19	Antwerp	FO purifier getting choked frequently. slowly turning in to hard asphalt	In progress
12	2-Dec-19	24-Dec-19	ISTANBUL	Vessel found higher sludge formation	High sediment
13	5-Nov-19	24-Dec-19	Rotterdam	Sludge is like bitumen clogged drain pipe and space around bowl body	In progress
14	3-Nov-19	22-Dec-19	Yeosu-Korea	Excess sludge generation in purifier and Piston ring breakage in ME	In progress

These 14 issues have been reported in month of December alone (the month is not over yet) and the majority of these have purifier choking issues. We have highlighted in red the crucial and serious cases being investigated. These vessels are experiencing premature liner wear after VLSFO usage.

Please see below some pictures shared by Ship crew.









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Dated: December 30<sup>th</sup> 2019