
SULPHUR CAP 2020 & COVID 19
Sulphur Cap 2020
Sulphur compliance
Quality / Stability
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Preventative measures
The perfect sample!
Sampling
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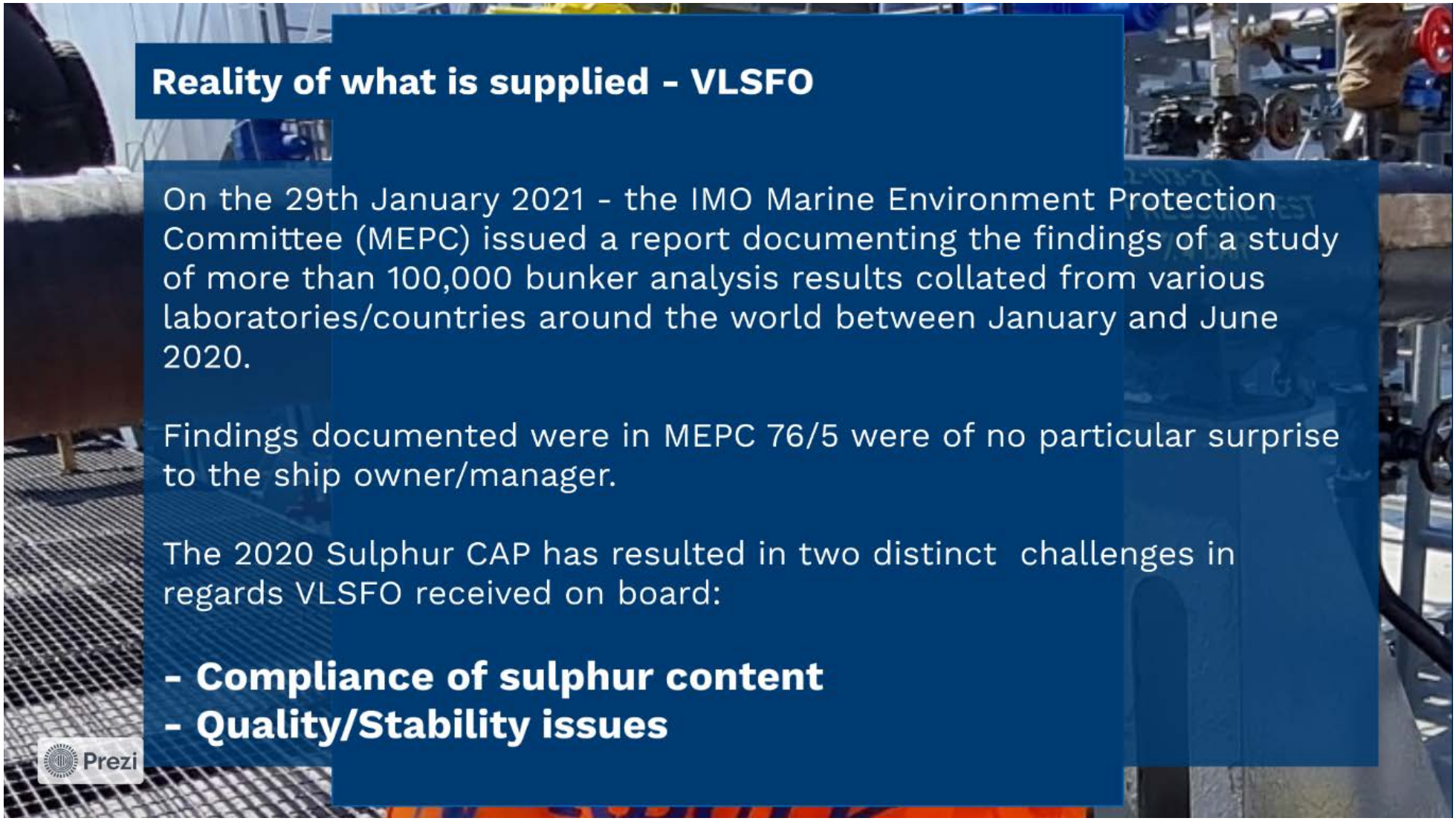
7.4 BAR
NORBULK
Prezi


Reality of what is supplied - VLSFO
On the 29th January 2021 - the IMO Marine Environment Protection Committee (MEPC) issued a report documenting the findings of a study of more than 100,000 bunker analysis results collated from various laboratories/countries around the world between January and June 2020.
Findings documented were in MEPC 76/5 were of no particular surprise to the ship owner/manager.
The 2020 Sulphur CAP has resulted in two distinct challenges in regards VLSFO received on board:
- Compliance of sulphur content
- Quality/Stability issues
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VLSFO - Sulphur compliance
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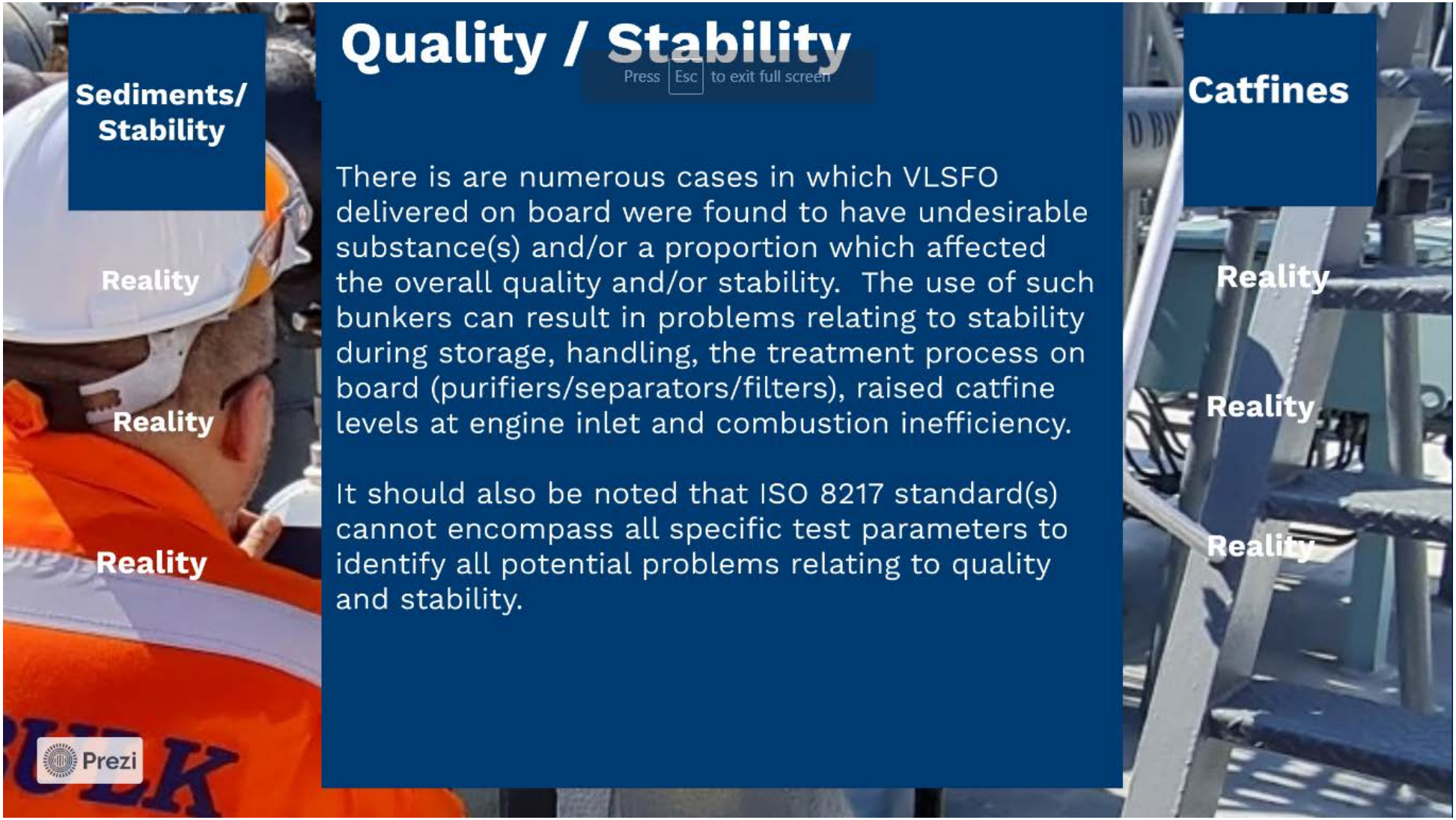
In order for refineries to provide VLSFO with a 0.50% sulphur limit additional processing/cutting with other stocks is carried out.
Industry experience and the findings of MEPC 76/5 is that the levels of sulphur within VLSFO were predominantly very close to 0.5% limit.
Results
Prezi
Presenter view

Analysis results

10 Sulphur: 94% of combined 2020 DM and RM fuels have a S content ≤ 0.50%, 1% in the range 0.50 < S ≤ 0.53% and 5% have a S content > 0.53%. In 2018, 69% of DM and RM samples had a S content > 0.53%.

S, mass%	2020 DM and RM		
	S ≤ 0.50	0.50 < S ≤ 0.53	S > 0.53
% of samples	94	1	5

Source : MEPC 76(5)


Sediments/
Stability
Reality
Reality
Reality
Quality / Stability
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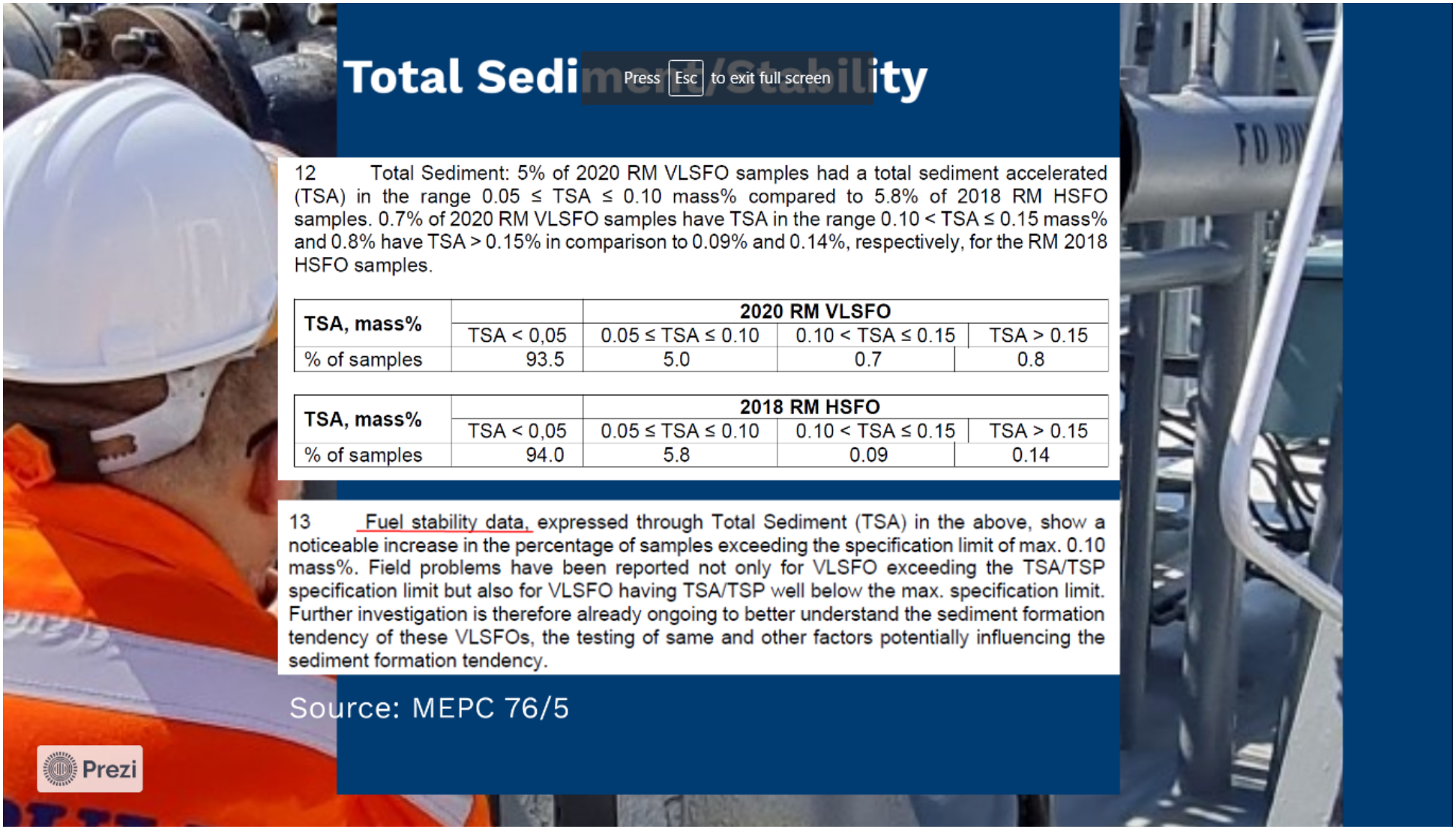
There is are numerous cases in which VLSFO delivered on board were found to have undesirable substance(s) and/or a proportion which affected the overall quality and/or stability. The use of such bunkers can result in problems relating to stability during storage, handling, the treatment process on board (purifiers/separators/filters), raised catfine levels at engine inlet and combustion inefficiency.
It should also be noted that ISO 8217 standard(s) cannot encompass all specific test parameters to identify all potential problems relating to quality and stability.
Catfines
Reality
Reality
Reality
Prezi



Total Sedi ment/Stabil ity

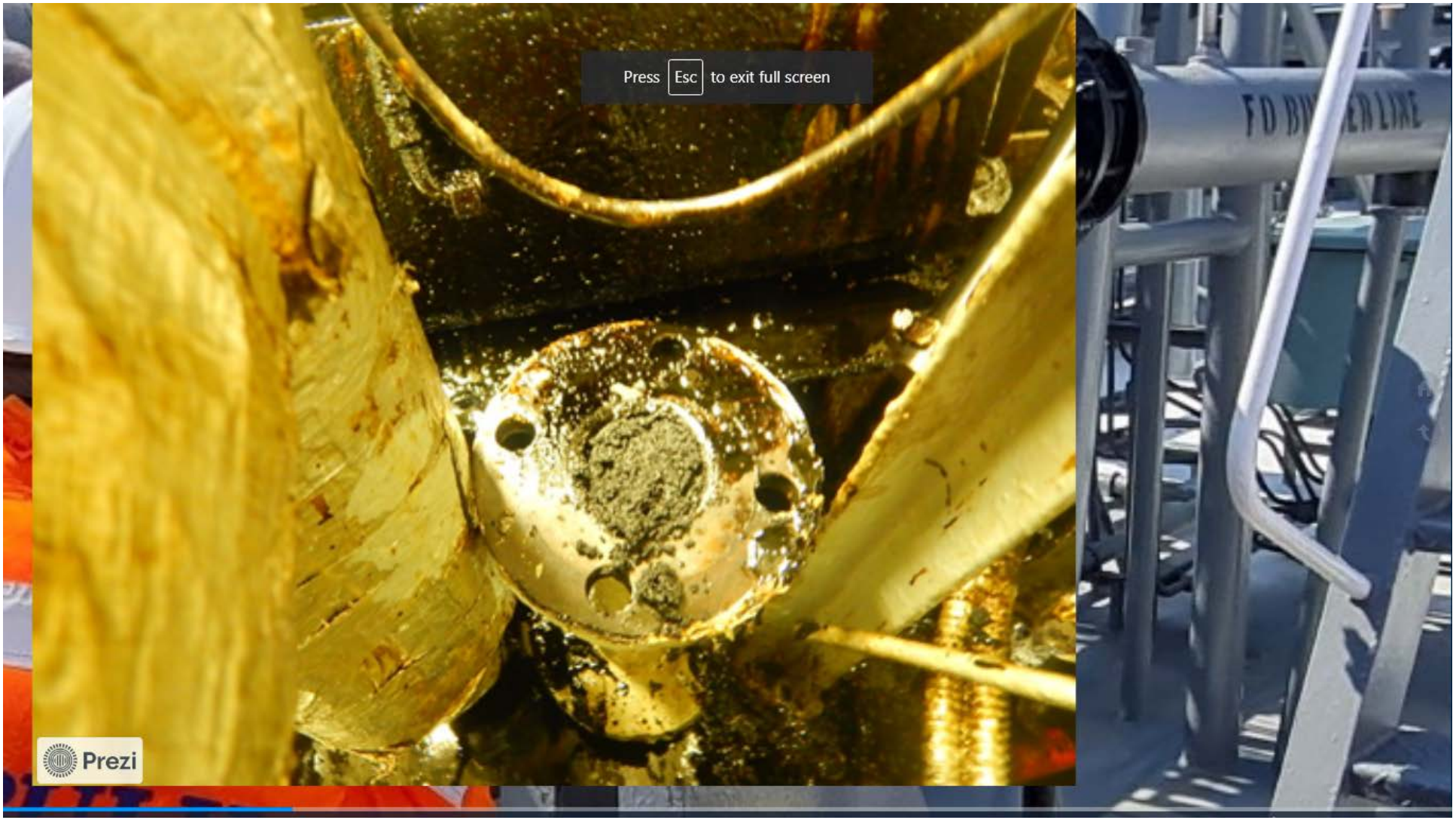
12 Total Sediment: 5% of 2020 RM VLSFO samples had a total sediment accelerated (TSA) in the range 0.05 ≤ TSA ≤ 0.10 mass% compared to 5.8% of 2018 RM HSFO samples. 0.7% of 2020 RM VLSFO samples have TSA in the range 0.10 < TSA ≤ 0.15 mass% and 0.8% have TSA > 0.15% in comparison to 0.09% and 0.14%, respectively, for the RM 2018 HSFO samples.

TSA, mass%	2020 RM VLSFO			
	TSA < 0,05	0.05 ≤ TSA ≤ 0.10	0.10 < TSA ≤ 0.15	TSA > 0.15
% of samples	93.5	5.0	0.7	0.8

TSA, mass%	2018 RM HSFO			
	TSA < 0,05	0.05 ≤ TSA ≤ 0.10	0.10 < TSA ≤ 0.15	TSA > 0.15
% of samples	94.0	5.8	0.09	0.14

13 Fuel stability data, expressed through Total Sediment (TSA) in the above, show a noticeable increase in the percentage of samples exceeding the specification limit of max. 0.10 mass%. Field problems have been reported not only for VLSFO exceeding the TSA/TSP specification limit but also for VLSFO having TSA/TSP well below the max. specification limit. Further investigation is therefore already ongoing to better understand the sediment formation tendency of these VLSFOs, the testing of same and other factors potentially influencing the sediment formation tendency.

Source: MEPC 76/5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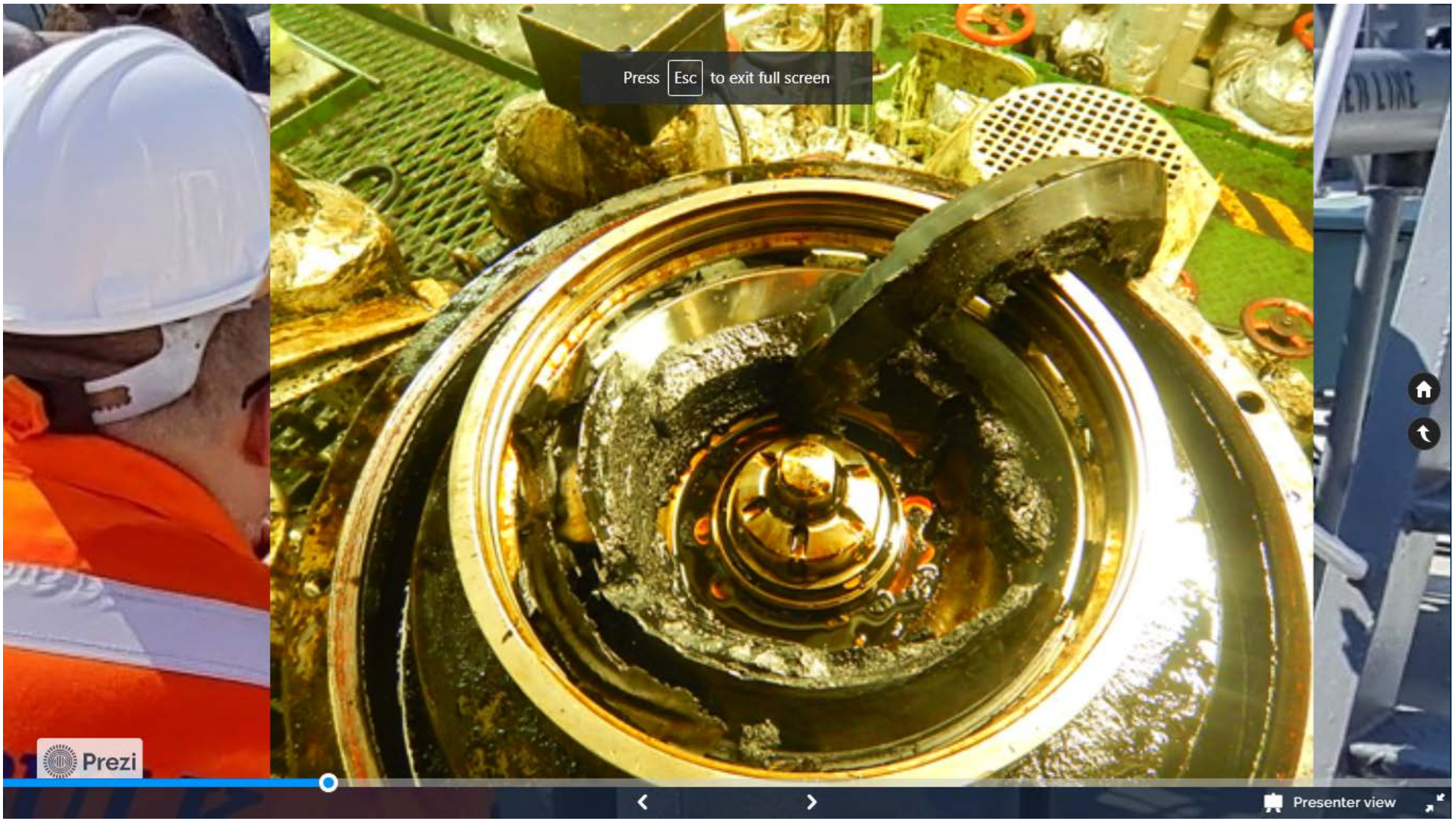
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Prezi
Presenter view

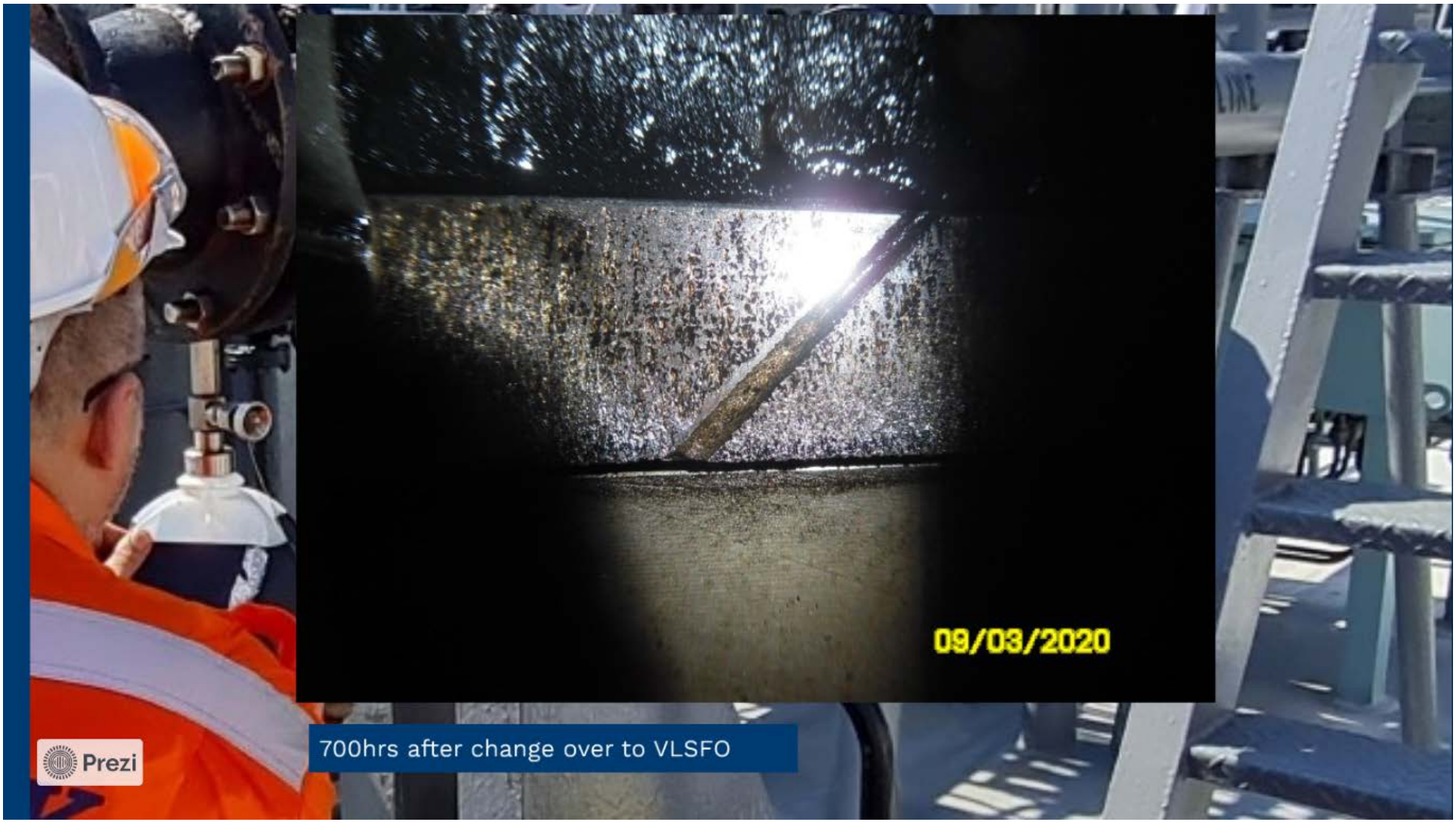
Catfines

11 Al+Si: 99.8% of 2020 RM VLSFO samples had a Al+Si (catalytic fines) content ≤ 60 mg/kg and 0.2% of samples had a Al+Si content > 60 ppm. In 2018, 98.5% of RM HSFO samples had a Al+Si ≤ 60 mg/kg and 2.5% of samples had a Al+Si content > 60 ppm.

Al+Si, mg/kg	2020 RM VLSFO		2018 RM HSFO	
	≤ 60	> 60	≤ 60	> 60
% of samples	99.8	0.2	98.5	1.5

Source: MEPC 76/5

Even though overall reports of catfines exceeding 60ppm has reduced when the fuels have stability/ purification issue the risk of catfine damage is greater.


09/03/2020
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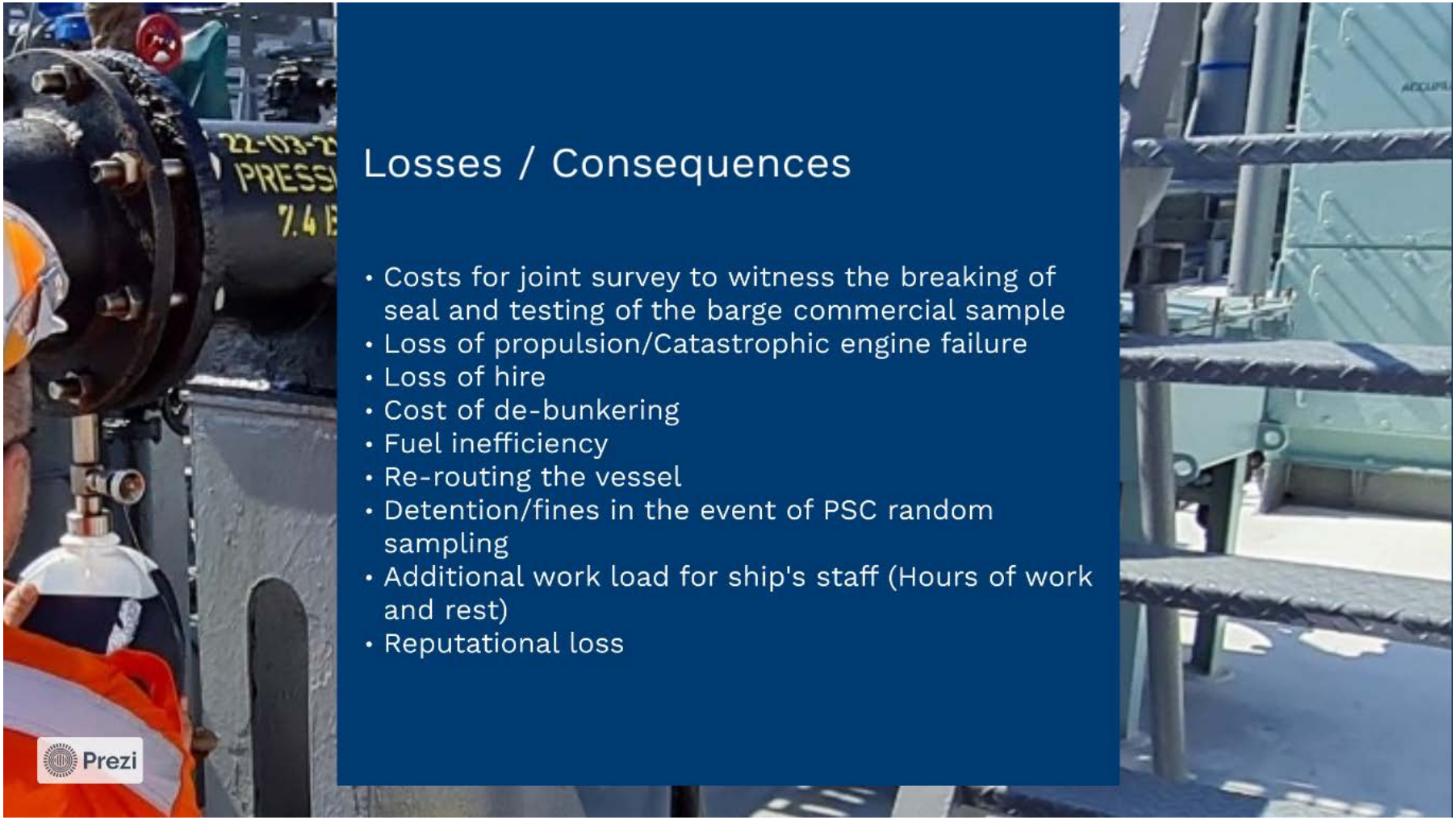
700hrs after change over to VLSFO

Preventative measures

- Sampling and prompt analysis of ship's sample
- Good management of bunkers (good levels existing bunkers)
- Avoid co-mingling of bunkers
- Regular fuel system audits
- Utilising fuel additives
- Strict monitoring and control of cylinder oil/feed rates
- Monitoring of scavenge drains for iron(Fe) concentrations
- Use of Cermet piston rings
- Upgrade of filter assemblies/correct micron rating (10um)
- Annual inspection and cleaning of settling and service tanks
- Inspection of bunker tanks
- Catfine tests on-board

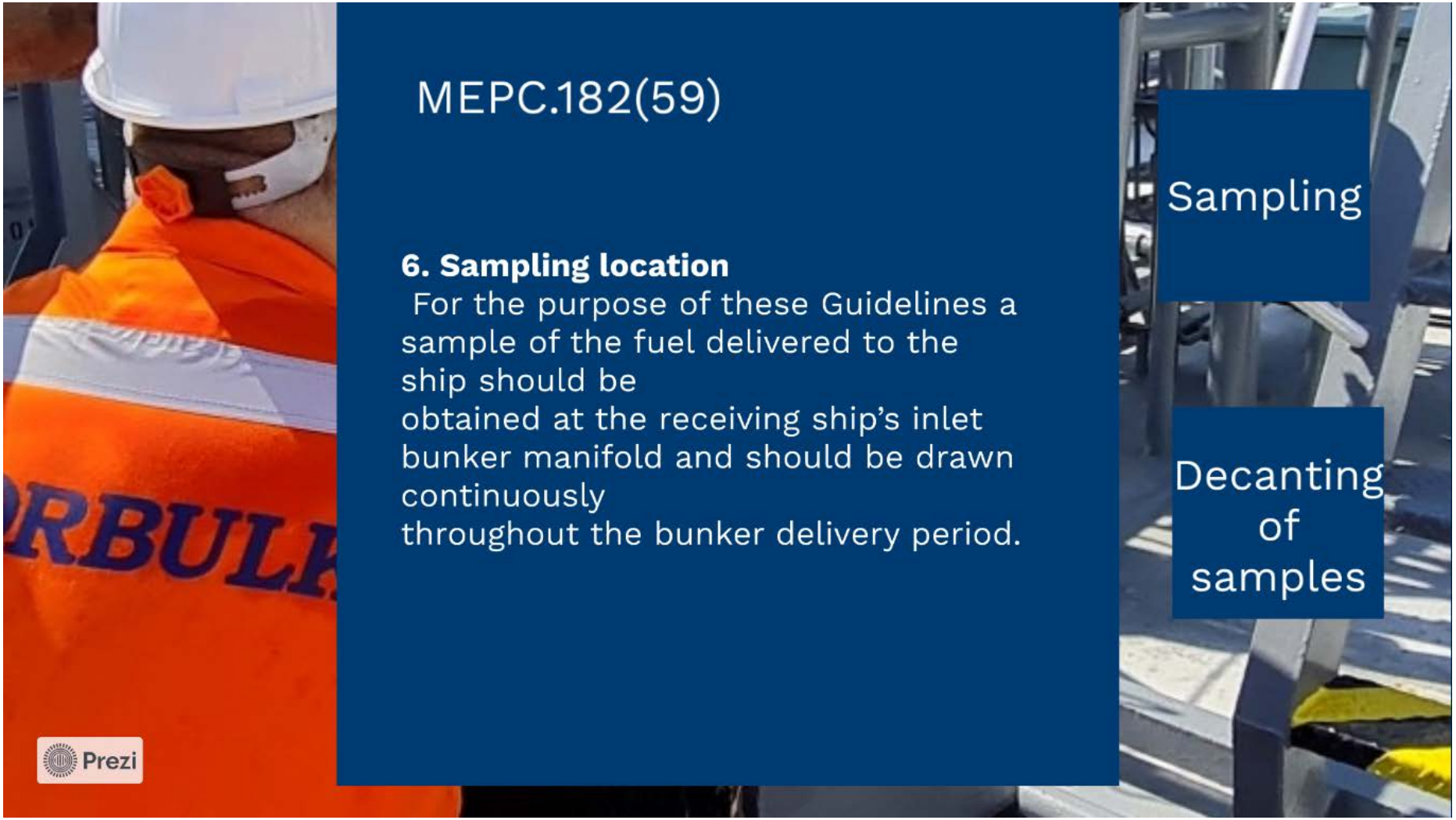
Basic Catfine test

Coarse Catfine test on-board


Losses / Consequences
• Costs for joint survey to witness the breaking of seal and testing of the barge commercial sample
• Loss of propulsion/Catastrophic engine failure
• Loss of hire
• Cost of de-bunkering
• Fuel inefficiency
• Re-routing the vessel
• Detention/fines in the event of PSC random sampling
• Additional work load for ship's staff (Hours of work and rest)
• Reputational loss
Prezi

Sampling

Majority of ship Owner's will conduct their own sampling and analysis of bunkers received. This ascertains if the product delivered is compliant in regards to sulphur content and ISO standard. These results can assist in assessing the overall quality of the fuel and potential problems with storage, treatment and consumption.


MEPC.182(59)
6. Sampling location
For the purpose of these Guidelines a sample of the fuel delivered to the ship should be
obtained at the receiving ship's inlet bunker manifold and should be drawn continuously
throughout the bunker delivery period.
Sampling
Decanting of samples
Prezi


PRESSURE TEST
7.4 BAR


LK


Joint Sampling
Sampling with COVID-19
Shipping industry worldwide have now had to operate within the constraints of COVID-19.
Whilst most companies have a robust and effective COVID-19 management plan, barge personnel frequently refuse to participate in joint sampling and simply accepting a LOP.
Remote sampling
Remote sampling
Remote decanting samples
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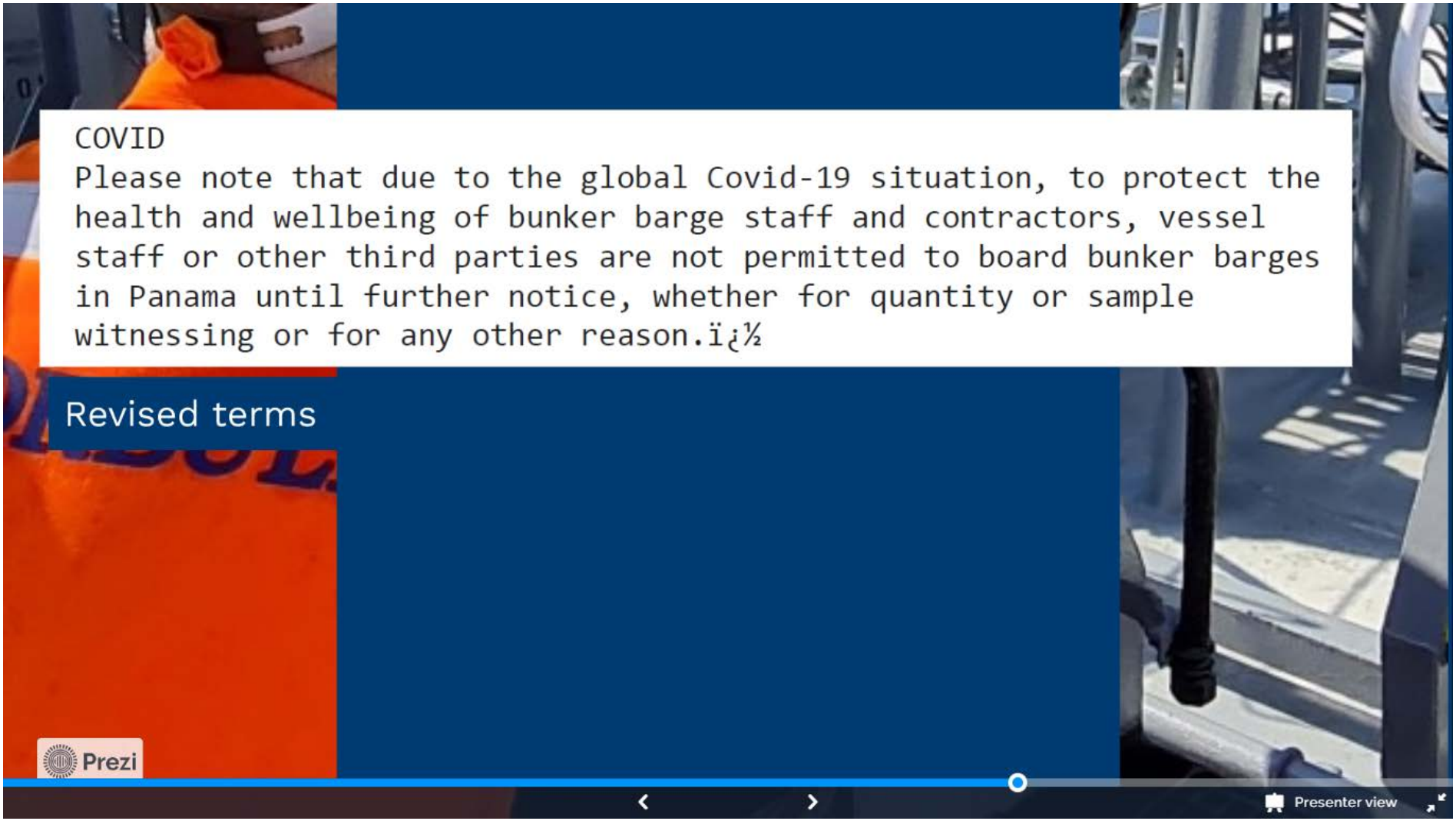
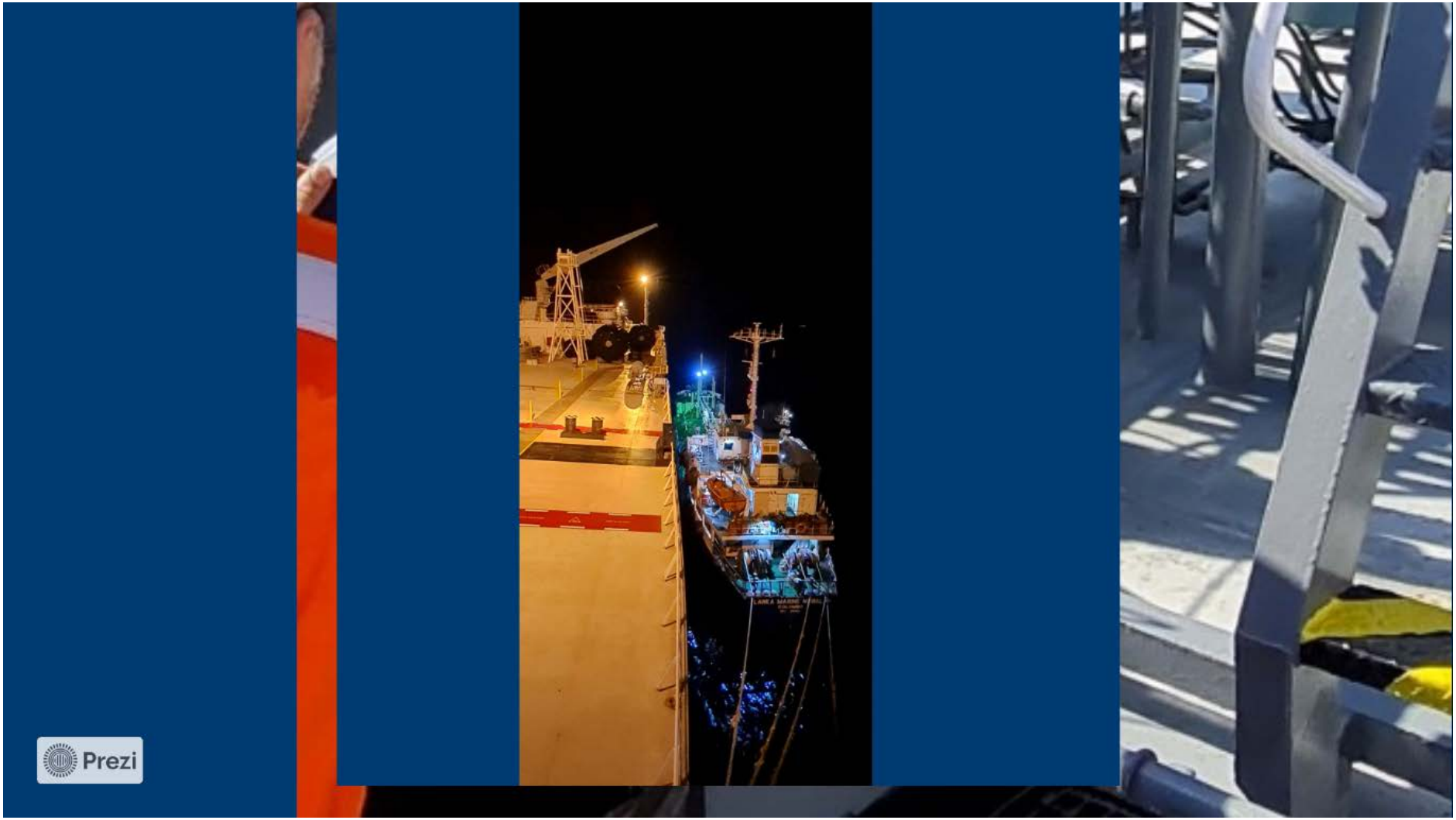
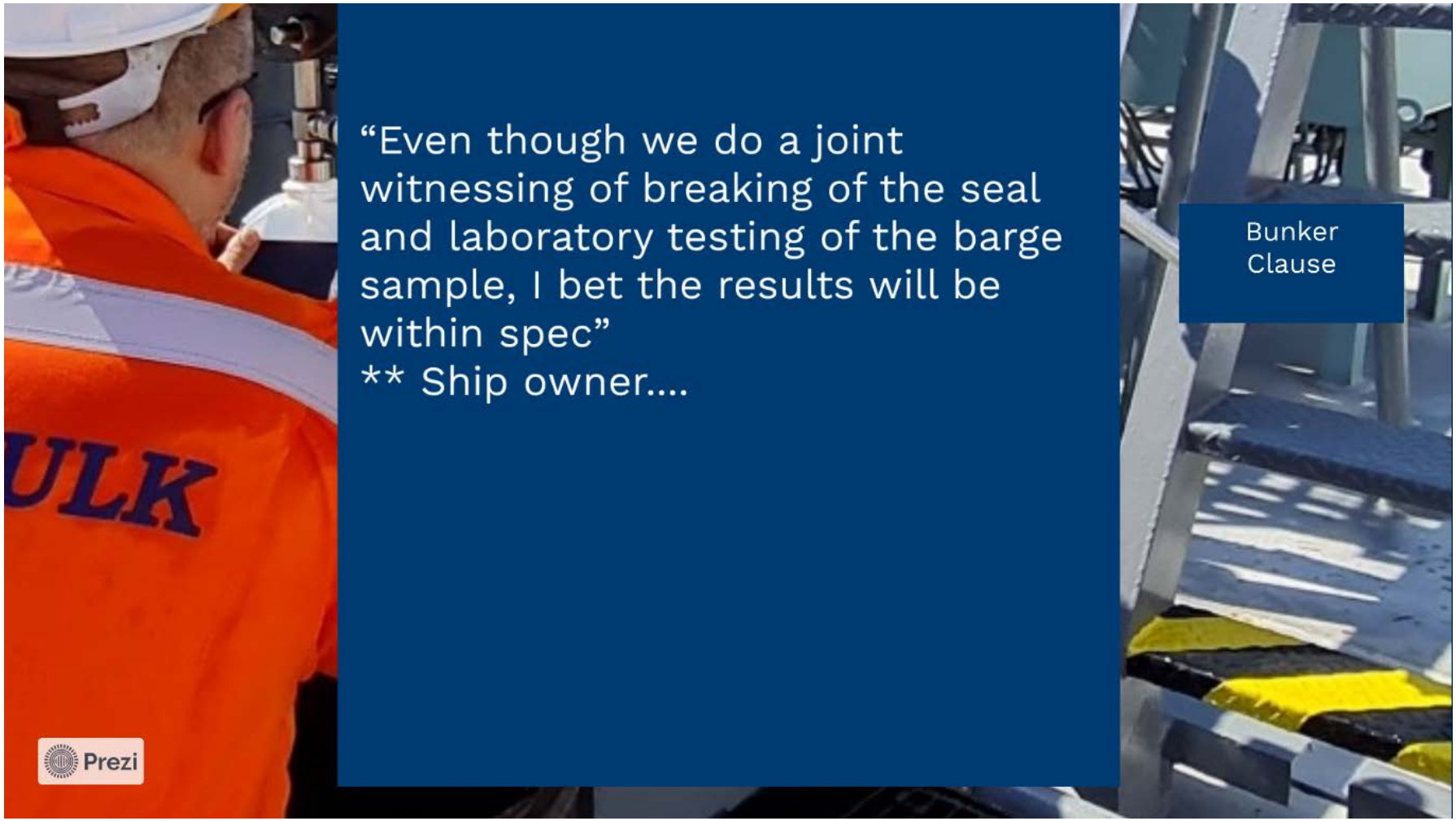

COVID
Please note that due to the global Covid-19 situation, to protect the health and wellbeing of bunker barge staff and contractors, vessel staff or other third parties are not permitted to board bunker barges in Panama until further notice, whether for quantity or sample witnessing or for any other reason.ï¿½
Revised terms
Prezi
Presenter view




COLOMBO


“Even though we do a joint witnessing of breaking of the seal and laboratory testing of the barge sample, I bet the results will be within spec”
** Ship owner....
Bunker Clause
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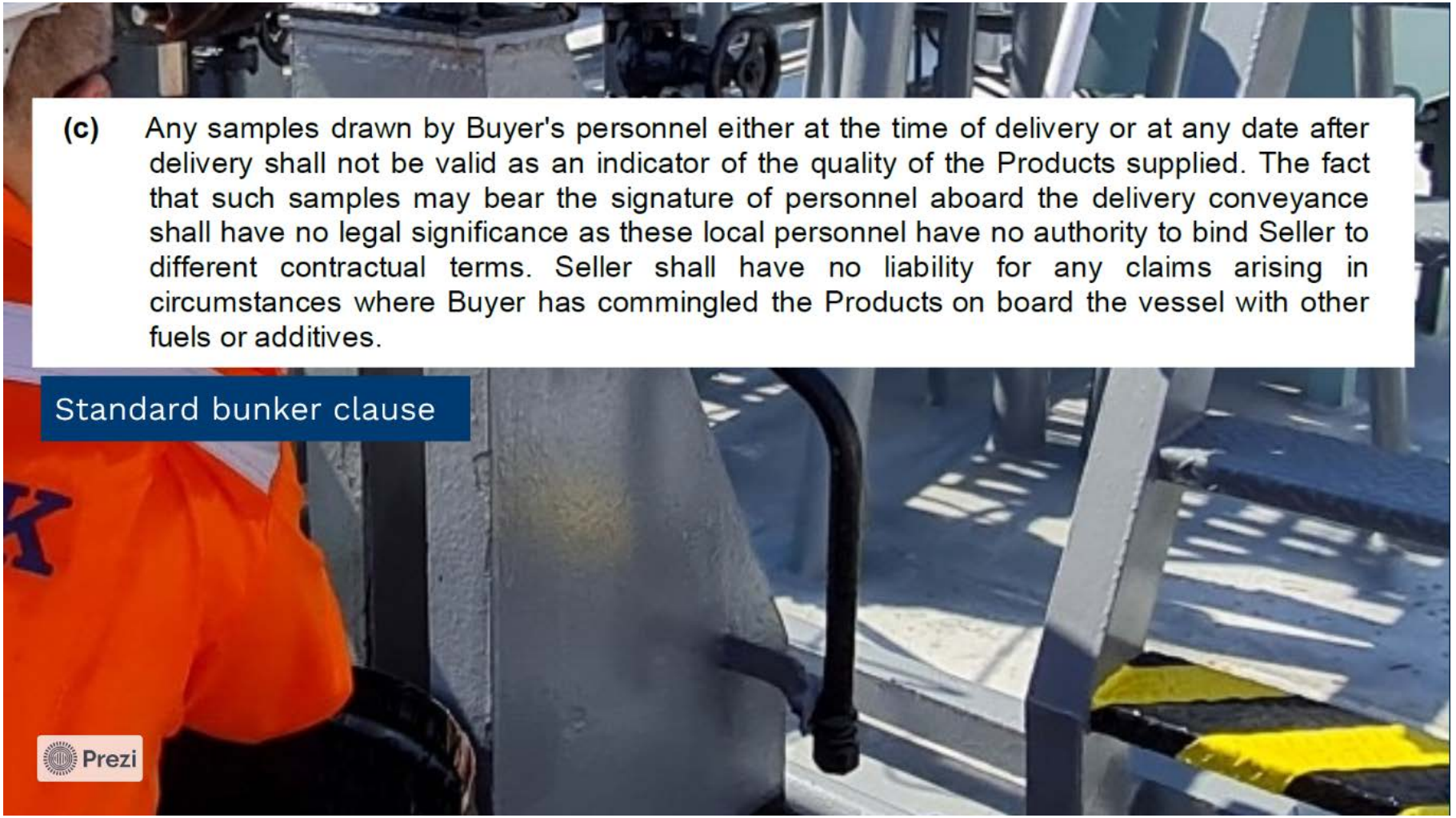
(c) Any samples drawn by Buyer's personnel either at the time of delivery or at any date after delivery shall not be valid as an indicator of the quality of the Products supplied. The fact that such samples may bear the signature of personnel aboard the delivery conveyance shall have no legal significance as these local personnel have no authority to bind Seller to different contractual terms. Seller shall have no liability for any claims arising in circumstances where Buyer has commingled the Products on board the vessel with other fuels or additives.
Standard bunker clause
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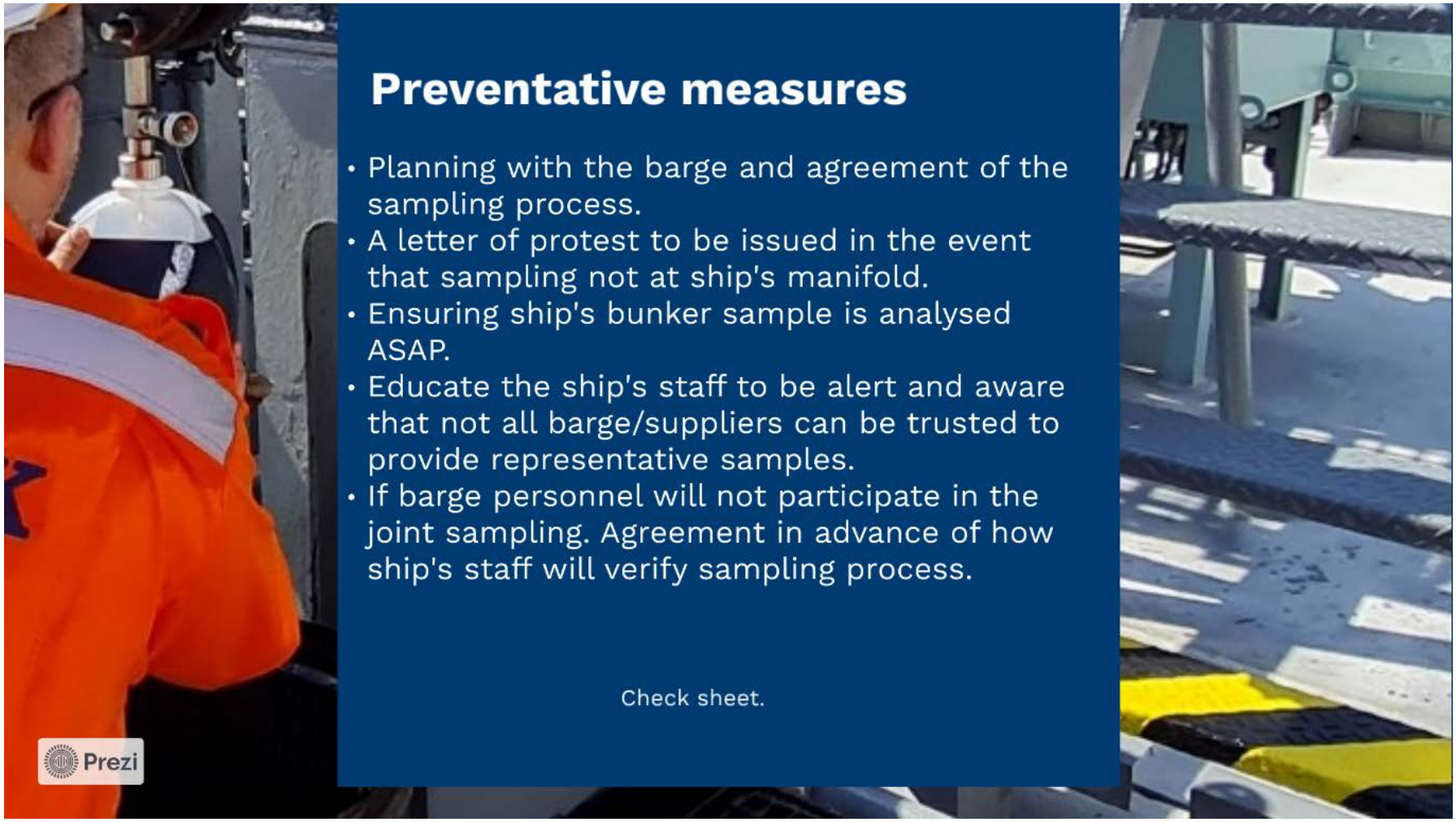
Preventative measures
• Planning with the barge and agreement of the sampling process.
• A letter of protest to be issued in the event that sampling not at ship's manifold.
• Ensuring ship's bunker sample is analysed ASAP.
• Educate the ship's staff to be alert and aware that not all barge/suppliers can be trusted to provide representative samples.
• If barge personnel will not participate in the joint sampling. Agreement in advance of how ship's staff will verify sampling process.
Check sheet.
Prezi

We can accept the sample process being drawn on the manifold of the bunker barge on the following conditions:

- The chief engineer and barge representative discuss and formally agree on the sampling process prior to the bunkering commencing.
- The sample is drawn at the barge manifold which is clearly visible from the main deck our vessel.
- Our ship's staff can monitor the filling of the cubitainer throughout the bunkering process to ensure homogeneous sample is drawn into cubitainer.
- Our ship's staff can sight proper mixing of the cubitainer prior to decanting into the respective sample bottles.

In the event that the above cannot be followed/agreed/implemented then letter of protest must be issued. Also, in the event that the barge sample is provided in advance of the bunkering process and/or clearly evident that correct sampling process is not conducted and/or barge are obstructive in enabling ship's staff verify correct sampling then the letter of protest must be issued as per previous and clearly stating these facts.

M/V: NorEaster
Barge: RTC 27
Date: 01 MAY 2021 BOSSON HFO BUNKERING

	Initials Ship	Initials Barge
1. CHIEF ENGINEER AND BARGE DISCUSSED AND AGREED IN ADVANCE SAMPLING PROCESS IF REQUIRED ON BARGE: **YES OR NO**		
2. LOCATION SAMPLE DRAWN: **BARGE MANIFOLD**		
3. IF BARGE SAMPLE, WERE SHIPS STAFF ABLE TO VERIFY CORRECT SAMPLING PROCESS THROUGHOUT (VISUAL) **YES OR NO**		
4 IF BARGE SAMPLE, WAS IT POSSIBLE TO VERIFY HOMOGENEOUS SAMPLE **YES OR NO**		
5 IF BARGE SAMPLE, WAS SAMPLE PROPERLY MIXED PRIOR TO DECANTING TO SAMPLE BOTTLES **YES OR NO**		
6. IF 1, 3, 4 OR 5 ANSWERED NO, WAS A LOP ISSUED? **YES OR NO**		

Signature
Ship' Ch. Eng. D Bausous

Signature
Barge Representative Domingos Figueiredo

Sampling on barge protocol

Conclusion / Summary

There is not one single barrier/measure that can prevent losses/damages in the event of bad/non-compliant bunker supply.