#	ITEM PROPOSED	DNV	FOBAS	VISWA LAB
1	Presence of H2S in liquid phase to limit of 2 mg/kg (Newly Introduced)	Disagrees. States that H2S in vapor form can be upto 20 times. This means 2 mg/kg can be upto 400 mg/kg. Since TLV is 10 ppm this is a serious safety issue. Expressing limit is wrong. More research should be carried out	Favors this. The proposal enhances safety and is technically robust	There are two issues here. How many cases of H2S ontaminated bunkers have been identified in the last one yr? This will help in putting this problem in perspective. Second, there are other toxic substances in bunker fuel such as organic acids. which could also be fatal when inhaled under heated conditions. No testing has been introduced for organic chemicals. It has been accepted for a long time that even though the H2S in liquid can be 2 mg/kg, it is possible to find in the vapor headspace 10 to 50 times of this depeding on various factors such as temperature, headspace configuration etc. What really matters for the ship is what they measure in the headspace which is what they are exposed to. Ideally if every ship is required to measure and record headspace H2S, it will be the best safety measure. The question is how the supplier is going to measure it before he supplies. How will he know if his supply may get rejected because of what the ship may measure onboard. These are important questions for which we do not have good anwers. It is better that we go for more research before introducing an additional test at this stage.**CONCLUSION** : More study before introducing this new test.
2	CCAI now introduced into standards ! To drop FCA Fuel tech Instrument	ECN produced by FCA should be accepted and it should replace CCAI	Wants to go with CCAI. Will continue to assess other methods to determine fuel Ignition and Combustion properties	VL has carried out independent research into this topic. Ignition and Combustion properties determined by Fueltech Insterument are not reliable. Marine engines using Santos Brazil fuel with ECN of 5 are running main machinery without any problems. On the other hand, some other fuels with high asphaltenes and MCR, though having reasonable ECN (19,20,21) are causing piston ring breakage in the main engine. VL has identified the problem as having to do with the amount of aromatics present in the fuel. Santos fuels have high aromatics and a low ECN does not seem to matter. Problem fuels with broken piston rings have low aromatic content. Therfore the computation of ECN in the intrument may have to be altered. Currently it is representative only of the ignition property and does not take cognisance of the combustion properties of the fuel. In slow speed engines and residual fuel, combustion and ignition are independent phenomena and an ECN based only on ignition property alone is an incorrect way to represent the ignition and combustion properties of the fuel. To sum up, once this computation of ECN is altered, we feel this instrument will definetely be able to characterize the fuel correctly. In the meantime, CCAI can be used only as

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				a guidance since CCAI numbers are not reliable. This is the situation that existed prior to ISO 8217:2005.
3	Blending biodiesel with marine fuel	No comment	Not a good idea. Should not be introduced now.	Agree that the blending should be deferred. The main risk is that if the biodiesel manufactured is not stable it can result in decomposition generating compounds which are acidic in nature and which will cause machinery damage.
4	Measurement precision ISO 4259	ISO 4259 should be applied in entirety	No comment	ISO 4259 provides an allowance for reproducibility variation among results. The supplier takes full advantage of this to his benefit. While a statistical precision standard may allow this latitude, a standard has a right to restrict a value to a certain number which cannot be a moving target. Recognizing this, the MEPC of IMO categorically took the standard that sulfur can never exceed 1.50% Period. This means that the supplier has to actually supply a fuel with only 1.42% max sulfur. This way, even if this fuel is tested in another lab and the maximum permitted variation is applied, it will still not cross 1.50%. VL takes the stand that this is the way the limits should be applied. For example, in case of density, a supplier today can supply fuel with 991 +1.5 = 992.5. Most of the existing purifiers (old type) cannot handle density over 991.0. Therfore the supplier should supply a fuel with density 991 ! 1.5 = 989.5 density. When this is tested in any lab, it should not cross 991.0. This simple interpretation will save a lot of confusion and also a lot of undue advantage taken by the supplier. In the case of density, the supplier is interested in pushing up the density since he is paid on the mass of the fuel but the fuel user will find that purifier cannot properly purifiy the high density fuel and he will pay for the use of a dirty fuel that results in higher wear and tear.
5	Viscosity limits of DMA and MGO	DNV states that the limit of 2 cSt @ 40 degC is incorrect and proposes a higher viscosity	No comment	The viscosity limit should be around 3.5 cSt so that there will be no need to fit chillers. Where engine temperature is higher because the engine has just used heavy fuel, the danger of viscosity dropping below 2 cSt will not be there. Based on over 4,000 diesel samples tested by Viswa Lab, the average viscosity @ 40 degC of distillate fuels is 3.71 cSt (for DMA alone is 3.65 cSt and MGO is 3.33 cSt). Viswa Lab proposes a change in the viscosity limits from 1.4 and 2.0 cSt to 3.5 cSt. This will take care of main engine problems that come up with viscosity less than 2 cSt in the engine entry point. There may not be a need to fit chillers/coolers in the fuel line.

6	Proposed RME 180 requirement	May not be available. Suggests RMG 180	No comment	Proposed RMG grade fuels likely to cause problems onboard sice the spec limits are too generous. Non avaiability applies only to 1 or 2 ports. The spec should not be bent to accommodate them.
7	Al+Si Limit (60 mg/kg)	DNV says in order to reduce from 60 mg/kg to 15 mg/kg as recommended by engine makers, purifiers should always work at 75% efficiency	No comment	VL carried out purifier efficiency tests both spectroscopically and through a patented particle count method. Purifier efficiencies can vary wildly from 30% to 60/70%. On the other hand the global average Al+Si value is only around 18.9 ppm. There is no need to specify 60 ppm. This is an unecessary concession to the supplier. The percentage of times whenAl+Si has exceeded 60 ppm is less than 0.7% (Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab) of the time and the percentage of times when Al+Si has exceeded 40 ppm has been about 8.9% of the times (Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab). Engine makers do not permit more than 15 ppm of Al+Si into the engine. If the limit is kept at 40 ppm, even if the purifier performs at 60% efficiency, catfines reaching the engine will fall within the limits specified by marine engine makers.
8	Lubricity (wear area limit of 520 microns)	Engine makers recommend carrying out this test for fuel with sulfur below 0.05% or 0.01%	No comment	Even though the limit is 0.1% (1000ppm), it is widely feared that suppliers will get diesel fuel from the automobile industry which are ultra low sulfur fuels (less 15 ppm). The draft standard gives an upper limit for sulfur but does not provide a lower limit. The standard can say not less than 0.05% and not more than 0.1%. This will cause some problems/inconvenience to suppliers. However if ultra low sulfur fuel is used in the engine, definetely lubricity problems will be encountered. The standards should say that if the DMA or MGO supplied has less than 0.05% sulfur, a lubricity test has to be carried out and the wear area limited to 520 microns. If sulfur content falls within 500 to 1000 ppm, no need to carry out lubricity test.
9	Stong Acid Number	No comment	No comment	The standard should specify which standard and the year should be given. This standard has undergone changes nearly every year as far as ASTM is concerned.
10	Acid Number	No comment	No comment	The limit should be stated when no napthenic acid is identified as 0.8 to 1.0. If napthenic acid is present, the limit should be set at 3.0. More important than these numbers is the pH value of the fuel. pH represents the active hydrogen which actually promotes corrosion. A method for extracting the acids from the bunker fuel and carrying out the pH on this acqueus medium

				should be specified along with the limit. It has to be noted that the bunker fuel can have a TAN of 5 or 10 and if it has a TBN of 5 or 10, it is totally neutralized and it has no corrosiove prperties. pH is the true indicator of the corrosive potential of the fuel.
11	TSP replaced by TSA	No comment	No comment	Where TSA shows high values, it should be subjected to thermal aging (TSP) and this value should be the final accepted value. TSA often gives high values if not performed correctly.
12	Oxidation Stability for Diesel Fuels	No comment	No comment	No comment at this time.
13	Lubricity	No comment	No comment	The proposed HFRR method of measuring lubricity is considered by some as inappropriate for the rubbing surface of the marine diesel engine which are mostly reciprocating. The HFRR method has a wide "permitted variation" of 102 micron. This whole topic may require further research
14	Water (limit is 0.5%)	No comment	No comment	Average water globally tested by Viswa Lab is 0.14% (Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab). Viswa Lab proposes a limit of 0.2%. Why provide a limit of 0.50%. Why not make the defacto into dejure? The other intersting fact is that the fuels supplied in Japan have an average water of only 0.06%, whereas at Singapore the average is 0.16% and in the ARA area is it 0.14%. The percentage of fuels which water over 0.2% was only about 11% (Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab)
15	MCR	No comment	No comment	The average MCR values of samples tested by Viswa Lab was 12.59.(Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab) The limit can be set at 15% instead of 15% and 18%. Globally, the percentage of fuels that had MCR over 15% was only about 16%.
16	Upper Pour point	No comment	No comment	The global average for pour point is 4.8 degC.(Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab) Why provide a UPP limit of 30 deg C. Why not 15 degC? The average sea water temperature for all oceans is 16.4 degC. This provides substantial risk of wax formation in the fuel if the temperature is not maintained 10 to 15 degC above the pour point. The percentage of samples that exceeded 15 degC was about 10% only.

17	Vanadium	No comment	No comment	The global average for Vanadium tested by Viswa Lab was 90.50 ppm.(Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab) The number of samples with Vanadium over 150 ppm is about 12.5%.(Based on average of over 40,000 samples received from all parts of the world and tested by Viswa Lab) Why not have a 150 ppm limit instead of 300 ppm?
18	Viscosity of Distillate fuels	No comment	No comment	The average viscosity @ 40 degC of distillate fuels is 3.71 cSt (for DMA alone is 3.65 cSt and MGO is 3.33 cSt).(Based on average of over 4,200 diesel samples received from all parts of the world and tested by Viswa Lab) Viswa Lab proposes a change in the viscosity limits from 1.4 and 2.0 cSt to 3.5 cSt. This will take care of main engine problems that come up with viscosity less than 2 cSt in the engine entry point
19	Water in Distillate Fuels	No comment	No comment	The global average for water for DMB fuels is 0.02%. The limit proposed of 0.30% is not necessary.