

SHIP OPERATIONS COOPERATIVE PROGRAM

LOW SULFUR FUELS
APRIL 11, 2012

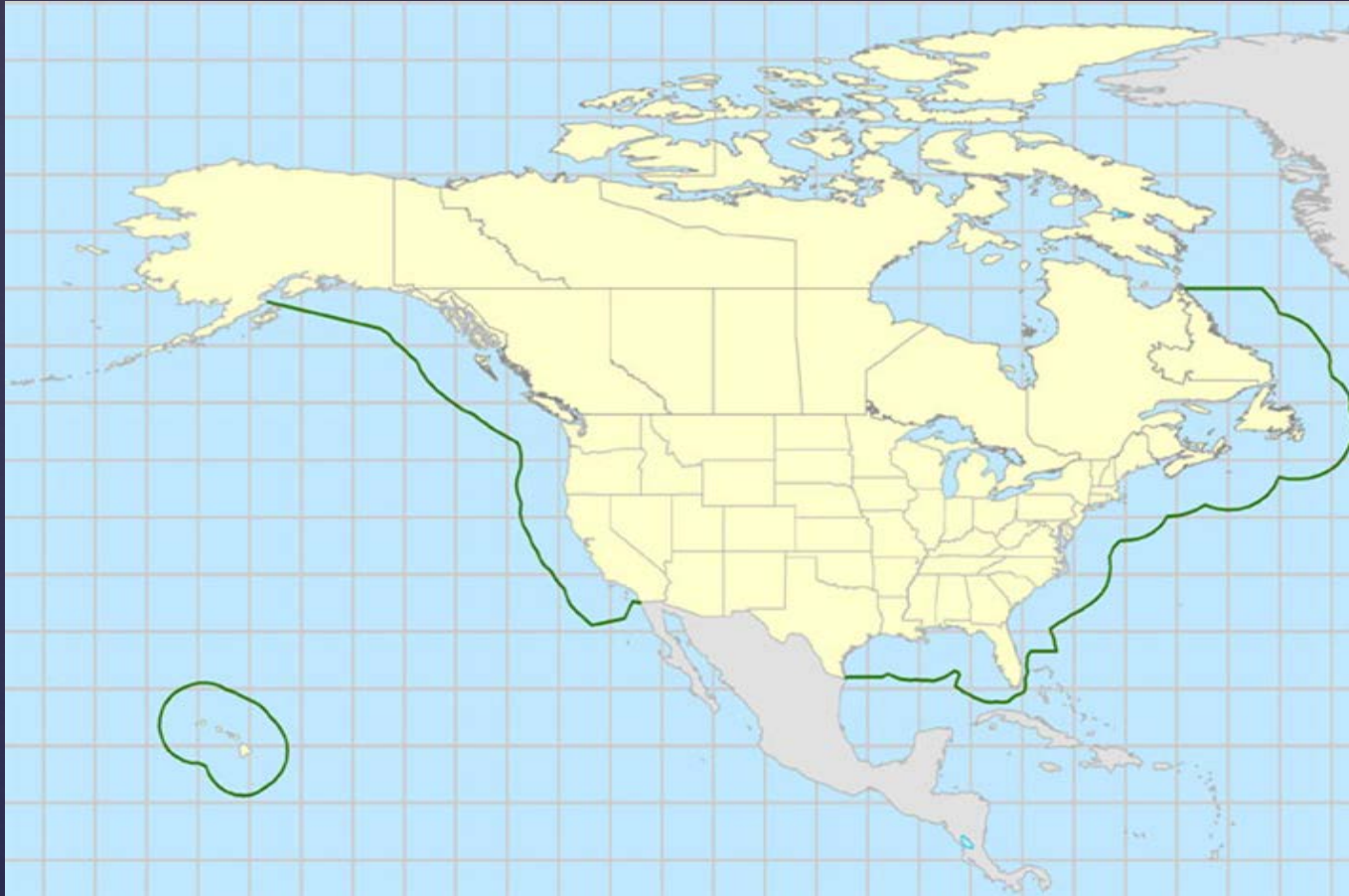


Established 1961

LARRY MESSINA

PRESIDENT
GLANDER INTERNATIONAL, INC.

SOx Limits on Ship Emissions



**North American 200 nm, ECA 1.0% Max Sulfur starting
August 1, 2012
0.1% Distilled fuel in 2015**

New Regulations Pose The Following Problems For Vessels

1. AVAILABILITY OF THE PRODUCTS
2. SEGREGATION OF THE PRODUCTS ABOARD SHIPS
3. ENGINE LUBRICANTS FOR CHANGE IN SULFUR ON M/E
(EXTENDED USE 200mn)
4. MORE ENGINE MAINTENANCE DUE TO FUEL CHANGES
5. NON COMPLIANCE TESTING COST INCREASE
6. SPECIFICATION TESTING COST INCREASE
7. ALL THE ABOVE EQUALS EXPENSE EXPENSE EXPENSE



1% FUEL AVAILABILITY

Will 1% BE AVAILABLE IN THE U.S.?

THE ANSWER IS YES

BUT...



EACH PORT WILL PRESENT A UNIQUE SITUATION

INITIALLY SOME SUPPLIERS ARE WAITING TO SEE DEMAND BEFORE COMMITTING TO AVAILABILITY.

TANKAGE WILL BE AT A PREMIUM, NOT ALL SUPPLIERS WILL HAVE LS IN A GIVEN PORT. THE ONLY LS MAY BE MGO.

ASK FOR SPECS, ESPECIALLY VISCOSITY.

SUPPLIERS WILL HAVE MINIMUM QUANTITY REQUIREMENTS I.E., OPERATIONALLY YOUR VESSEL MAY HAVE TANK SPACE FOR 100 MTS OF LS BUT THE SUPPLIER MAY HAVE A 200 MT MINIMUM.

BARGE CAPACITIES MAY BE DIMINISHED DUE TO SEGREGATION OF 2 OR 3 PRODUCTS ON A SINGLE BARGE.

SOME PORTS CURRENTLY SUPPLY FUEL EX-PIPE. LS MAY ONLY BE AVAILABLE AT CERTAIN TIMES.



International Inc.

NORTHEAST USA 1%

BOSTON/PORTLAND MAINE

- GLOBAL Available
- SPRAGUE Possibly available by August

NEW YORK / PHILLY

- CONOCO Available now in New York
- HESS Available Now NY and Philly
- BP Should have end of July
- GLOBAL Available NY and Philly
- CHEMOIL NY - June/July 2012, Philly – still working on it

BALTIMORE

- HESS Available now

NORFOLK

- HESS Looking into
- BOMINFLOT Available now



SOUTHEAST USA 1%

CHARLESTON

- HESS Currently not available, no plans for it yet
- COLONIAL Available by August

JACKSONVILLE / SAVANNAH

- COLONIAL Available by August

PORT CANAVERAL

- VITOL Available by August
- TRANSMONTAIGNE Available by August

PORT EVERGLADES / MIAMI

- TRANSMONTAIGNE Available by August



GULFCOAST USA 1%

TAMPA

- TRANSMONTAIGNE Available by Aug
- MIDSTREAM Available by Aug

MOBILE/PASCAGOULA

- SPECIALTY Currently available
- CHEVRON Not Available
- MIDSTREAM Limited Availability

NEW ORLEANS

- STONE Currently available
- NUSTAR Not available
- CHEMOIL Available by August
- BOMINFLOT Available by August
- BRIGHT OIL Not available

HOUSTON

- MATRIX Available by Aug
- CHEMOIL Available by Aug
- EXXON Not available
- BOMINFLOT Available by Aug
- BP Not available
- TOTAL Not available
- CONOCO Not available
- NUSTAR Available by Aug
- CHEVRON Not available

CORPUS CHRISTI

- ENJET Not available
- VALERO Not available



WESTCOAST USA 1%

SAN DIEGO

-Jankovich Plans to blend with ULSD (low CST) if needed or supply MGO

LOS ANGELES

-Chemoil Available by August, Depending on Demand

-Chevron Available by August, spot Basis

-Nustar No current plans for LS

-PDI Currently Available

-Dolphin Currently Blending LS

-Conoco No plans for LS

SAN FRANCISCO

-Conoco No plans for LS

-Chevron Currently no LS, Awaiting Demand



NORTHWEST USA / CANADA 1%

PORTLAND/PORT ANGELES

- CONOCO Probably blend with ULSD or cutters
- CHEVRON Not available
- TESORO Available by August

SEATTLE

- CONOCO; Probably blend with ULSD or cutters
- CHEVRON Not available
- US OIL No plans for LS

VANCOUVER BC

- ICS Currently not available
- MARINE PETROBULK Available by August

HAWAII

- TESORO Available by August





FUEL SPECS

ALL 1% IS NOT CREATED EQUAL

Current ISO 8217:2010
RMG 380

DENSITY max .991 VIS 380 CST
SULFUR STATUTORY REQUIREMENTS
VANADIUM 350max
AL + SIL 60max

TYPICAL US SPECS
RMG 380

API 11.5 VIS 370 CST SULFUR 2%-3.5%
AL + SIL 30 VANADIUM 100-200

TYPICAL US SPECS
LS RMG 380

API 12.0 VIS 360 CST SULFUR 0.95%
AL + SIL 50 VANADIUM 100

1% BY BLENDING
W/ ULSD

API 23 VIS 20-40 CST SULFUR 0.95%
AL + SIL 15 VAN <100
*CCAI WILL BE 890
THIS IS NOT WITHIN ISO 8217 SPEC

ISO 8217:2010 Marine Fuel Specifications

			A											
			10	30	80	180	180	380	500	700	380	500	700	
Viscosity at 50°C	mm ² /s	Max	10.0	30.0	80.0	180.0	180.0	380.0	500.0	700.0	380.0	500.0	700.0	
Density at 15°C	kg/m ³	Max	920	960	975	991	991					1010		
Micro Carbon Residue	% m/m	Max	2.5	10.0	14.0	15.0	18.0					20.0		
Aluminium + Silicon	mg/kg	Max	25	40		50	60							
Sodium	mg/kg	Max	50	100		50	100							
Ash	% m/m	Max	0.04	0.07			0.10					0.15		
Vanadium	mg/kg	Max	50	150			350					450		
CCAI	-	Max	850	860			870							
Water	% V/V	Max	0.30	0.50										
Pour point (upper) , Summer B	°C	Max	6			30								
Pour point (upper) , Winter B	°C	Max	0			30								
Flash point	°C	Min	60.0											
Sulphur C	% m/m	Max	Statutory requirements											
Total Sediment, aged	% m/m	Max	0.10											
Acid Number E	Mg KOH/g	Max	2.5											
Used lubricating oils (ULO):			The fuel shall be free from ULO, and shall be considered to contain ULO when either one of the following conditions is met:											
Calcium and Zinc; or	mg/kg	-	Calcium > 30 and zinc >15; or											
Calcium and Phosphorus			Calcium > 30 and phosphorus > 15.											
Hydrogen sulphide D	mg/kg	Max	2.00											
(A)	This residual marine fuel grade is formerly DMC distillate under ISO 8217:2005.													
(B)	Purchasers shall ensure that this pour point is suitable for the equipment on board, especially in cold climates.													
(C)	The purchaser shall define the maximum sulphur content according to the relevant statutory requirements.													
(D)	Effective only from 1 July 2012.													
(E)	Strong acids are not acceptable, even at levels not detectable by the standard test methods for SAN. As acid numbers below the values stated in the table do not guarantee that the fuels are free from problems associated with the presence of acidic compounds, it is the responsibility of the supplier and the purchaser to agree upon an acceptable acid number.													

AVAILABILITY AROUND THE WORLD

MAJOR PORTS WHERE 1% IS AVAILABLE

Freeport, Bahamas

Curacao

Genoa

St. Eustatius

Trinidad

Singapore

Colombia

Brazil

Gibraltar

Off West Africa

Quebec

Piraeus

Montreal

Halifax

Naples

Portugal

Barcelona

Malta

Most European Countries/Baltic Ports

San Juan

Argentina



MAJOR PORTS WHERE 1% IS NOT AVAILABLE

Durban

Capetown

Fujairah

Panama

Istanbul

Suez

Peru

Venezuela

Alpha Zone

China

Japan

Jeddah

Korea

Colombo



COSTS ASSOCIATED WITH 1% FUEL

CURRENT PREMIUMS FOR LS 1% AROUND THE WORLD

Rotterdam	+60.00mt	Colombia	+ 75.00-100.00mt
Gibraltar	+80.00mt	Freeport	+ 60.00mt
Piraeus	+100.00mt	St. Petersburg	+115.00mt
Brazil	+10.00mt	Falmouth	+ 60.00mt



EAST COAST USA 1% PREMIUMS

CURRENTLY NY PREMIUMS FOR 1% LS 380 ARE APPROXIMATELY 75.00mt
PHILADELPHIA, NORFOLK, BALTIMORE SLIGHTLY HIGHER

CURRENTLY NO LS IS AVAILABLE SOUTH OF NORFOLK. EXPECT THE
PREMIUM TO BE 90.00-100.00mt WHEN IT ARRIVES

CALCULATION FOR THE 1% PREMIUMS:

Example of NY cargo Prices, April 2012

No. 6 oil 1%	122.90bbl
No. 6 oil 3%	<u>110.10bbl</u>
DIFFERENCE	12.80

$12.80\text{bbl} \times 6.356 = 81.35\text{mt}$

No.6 oil 1%	122.90bbl
No.6 oil 2.2%	<u>112.30bbl</u>
DIFFERENCE	10.60

$10.60\text{bbl} \times 6.356 = 67.37\text{mt}$



GULFCOAST USA1% PREMIUMS

- THE US GULF COAST SUPPLIERS COVER A VAST AREA, FROM TAMPA TO CORPUS CHRISTI
- WHILE MOST PORTS REPORT, THE 1% WILL BE AVAILABLE COME AUGUST 1ST, ONLY NEW ORLEANS AND MOBILE CURRENTLY HAVE IT AVAILABLE ON A CONSISTANT BASIS
- CURRENT PREMIUMS ARE APPROXIMATELY 100.00 per MT OVER HS 380 PRODUCT
- AS MORE SUPPLIERS COME ON LINE. BASIC ECONOMICS DICTATE THE PREMIUMS WILL DEMINISH SLIGHTLY .



WESTCOAST USA 1% PREMIUMS

- CURRENTLY CALIFORNIA IS UNDER THE 24 MILE MGO ONLY RESTRICTION
- SUPPLIERS IN CALIFORNIA WAITING TO SEE IF DEMAND IS THERE, OTHERWISE VESSEL WILL BURN MGO FOR 200 MILES ON THEIR WAY BACK TO THE FAR EAST OR SOUTH AMERICA
- SUPPLIERS INDICATING IF THEY BRING IN LS BBLS THE PREMIUM WOULD BE 90.00-100.00mt
- THE PACIFIC NORTHWEST WILL HAVE 1% COME AUGUST BY BLENDING DOWN HS. VISCOSITY WILL BE APPROXIMATELY 40CST HOWEVER ...
- SUPPLIERS SAY THEY ARE BLENDING FOR CONTRACT CUSTOMERS AND 1% SPOT BBLS WILL BE VERY SCARCE
- EXPECT PREMIUMS TO BE IN THE 100.00 mt RANGE.



BARGING AND LS FUELS

THE GOOD NEWS IS, BARGE COMPANIES HAVE RISEN TO THE LS CHALLENGE

BARGE OPERATORS DEDICATING BARGE TANKS AND SEPARATE LINES FOR LS PRODUCT ON THE SAME BARGE AS HS

ALSO BARGE OPERATORS DEDICATING CLEAN MGO TANKS ON HEAVY FUEL BARGES

WILL NOT BE UNCOMMON TO HAVE HS, LS AND MGO DELIVERED TO A VESSEL ON SINGLE BARGE AT ONE RATE



BARGE AND SUPPLIER COSTS

NEW ECA REGULATION WILL CAUSE BARGE RATES TO RISE

ADDITIONAL TIME TO LOAD AND DELIVER 2 OR 3 PRODUCTS, HOSE HOOK-UPS, SAMPLING, ETC...

BARGE RATES IN THE NORTHEAST HAVE JUST RECENTLY INCREASED BY APPROXIMATELY 600.00 AND SURCHARGES WENT UP FROM 18% TO 28%

SUPPLIERS MAY HAVE TO TRUCK OR RAIL LS BBLS IN AT CONSIDERABLE EXPENSE OVER SHIPPED IN CARGOS

TERMINALING AND BLENDING WILL COST MORE AS SUPPLIERS NOW MUST HAVE ADDITIONAL TANKAGE TO BLEND AND STORE PRODUCT AS WELL AS SEGREGATED LINES FOR RECEIVING FUEL AND LOADING BARGES



CONCLUSION

IN SUMATION PLEASE TAKE INTO CONSIDERATION THE FOLLOWING SUGGESTIONS.

COMMUNICATION IS YOUR BEST FRIEND AND IS FREE. PURCHASING DEPARTMENTS, OPERATIONS DEPARTMENTS, SUPPLIERS AND BROKERS SHOULD ALL BE PART OF THE PLAN. FOREWARNED IS FOREARMED.

REMEMBER THE 1% REQUIREMENT IS ON THE SHIP OWNER TO BURN IT WITHIN THE ECA AREAS. IT IS NOT ON THE SUPPLIER TO HAVE IT

CHECK AHEAD, GIVE PLENTY OF NOTICE. ERROR ON THE SIDE OF CAUTION. INITIALLY FOR THE FIRST FEW MONTHS HAVE A PLAN "B" READY IN CASE THE LS IS NOT AVAILABLE AS PLANNED

CONSISTANCE OF SUPPLY MAY BE A PROBLEM INITIALLY

CALL GLANDER AND LET US HANDLE IT ALL FOR YOU.



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