CLAIMS

1. A low sulfur heavy marine fuel oil, consisting essentially of a 100% hydroprocessed high sulfur heavy marine fuel oil, wherein prior to hydroprocessing the high sulfur heavy marine fuel oil is compliant with ISO 8217: 2017 and is of merchantable quality as a residual marine fuel oil but has a sulfur content (ISO 14596 or ISO 8754) greater than 0.5 % wt. and wherein the low sulfur heavy marine fuel oil is compliant with ISO 8217 : 2017 and is of merchantable quality as a residual marine fuel oil and has a sulfur content (ISO 14596 or ISO 8754) less than 0.5 wt %.
2. The composition of claim 1, wherein the high sulfur heavy marine fuel oil has a sulfur content (ISO 14596 or ISO 8754) in the range from 1.0% wt. to 5.0% wt. and the low sulfur heavy marine fuel oil has a sulfur content (ISO 14596 or ISO 8754) in the range of 0.5% wt. and 0.05% wt.
3. The composition of claim 1, wherein the low sulfur heavy marine fuel oil has a sulfur content (ISO 14596 or ISO 8754) less than 0.1 wt %.
4. The composition of claim 1 wherein low sulfur heavy marine fuel oil has a maximum kinematic viscosity at 50C (ISO 3104) between the range from 180 mm^2 / s to 700 mm^2 / s; a maximum density at 15 °C (ISO 3675) between the range of 991.0 kg / m^3 to 1010.0 kg / m^3; a CCAI is in the range of 780 to 870 ; a flash point (ISO 2719) no lower than 60.0 °C a maximum total sediment – aged (ISO 10307-2) of 0.10 % wt. ; a maximum carbon residue – micro method (ISO 10370) between the range of 18.00 % wt. and 20.00 % wt. , and a maximum aluminum plus silicon (ISO 10478) content of 60 mg / kg.
5. A low sulfur hydrocarbon fuel composition consisting essentially of: a majority by volume of a 100% hydroprocessed high sulfur residual marine fuel oil and a minority by volume of Diluent Materials, wherein prior to hydroprocessing the high sulfur heavy marine fuel oil is compliant with ISO 8217: 2017 but has a sulfur content (ISO 14596 or ISO 8754) greater than 0.5 wt %; and wherein the low sulfur heavy marine fuel composition is compliant with ISO 8217 : 2017 and has a sulfur content (ISO 14596 or ISO 8754) less than 0.5 wt %; and wherein the Diluent Materials are selected from the group consisting of: hydrocarbon materials; non-hydrocarbon materials; and, solid materials and combinations thereof.
6. The composition of claim 5, wherein the 100% hydroprocessed high sulfur residual marine fuel oil is at least 75% by volume of the composition and the Diluent Materials are no more than 25% by volume of the composition.

7. The compositions of claim 5, wherein the 100% hydroprocessed high sulfur residual marine fuel oil is at least 90% by volume of the composition and the Diluent Materials are no more than 10% by volume of the composition.
8. The composition of claim 5 wherein the hydrocarbon materials are selected from the group consisting of: heavy marine fuel oil with a sulfur content (ISO 14596 or ISO 8754) greater than 0.5 wt; distillate based fuels; diesel; gas oil; marine gas oil; marine diesel oil; cutter oil; biodiesel; methanol, ethanol; synthetic hydrocarbons and oils based on gas to liquids technology; Fischer-Tropsch derived oils; synthetic oils based on polyethylene, polypropylene, dimer, trimer and poly butylene; atmospheric residue; vacuum residue; fluid catalytic cracker (FCC) slurry oil; FCC cycle oil; pyrolysis gas oil; cracked light gas oil (CLGO); cracked heavy gas oil (CHGO); light cycle oil (LCO); heavy cycle oil (HCO); thermally cracked residue; coker heavy distillate; bitumen; de-asphalted heavy oil; visbreaker residue; slop oils; asphaltinic oils; used or recycled motor oils; lube oil aromatic extracts; crude oil; heavy crude oil; distressed crude oil; and combination thereof; and wherein the non-hydrocarbon materials are selected from the group consisting of: residual water; detergents; viscosity modifiers; pour point depressants; lubricity modifiers; de-hazers; antifoaming agents; ignition improvers; anti rust agents; corrosion inhibitors; anti-wear additives, anti-oxidants (e.g. phenolic compounds and derivatives), coating agents and surface modifiers, metal deactivators, static dissipating agents, ionic and nonionic surfactants, stabilizers, cosmetic colorants and odorants and combination thereof; and, wherein the solid materials are selected from the group consisting of carbon or hydrocarbon solids; coke; graphitic solids; micro-agglomerated asphaltenes, iron rust; oxidative corrosion solids; bulk metal particles; paint particles; surface coating particles; plastic particles or polymeric particles or elastomer particles rubber particles; catalyst fines; ceramic particles; mineral particles; sand; clay; earthen particles; bacteria; biologically generated solids; and combination thereof.
9. The composition of claim 4 wherein low sulfur heavy marine fuel oil has a maximum kinematic viscosity at 50C (ISO 3104) between the range from 180 mm^2 / s to 700 mm^2 / s; a maximum density at 15 °C (ISO 3675) between the range of 991.0 kg / m^3 to 1010.0 kg / m^3; a CCAI is in the range of 780 to 870 ; a flash point (ISO 2719) no lower than 60.0 °C a maximum total sediment – aged (ISO 10307-2) of 0.10 % wt. ; a maximum carbon residue –

micro method (ISO 10370) between the range of 18.00 % wt. and 20.00 % wt. , and a maximum aluminum plus silicon (ISO 10478) content of 60 mg / kg.