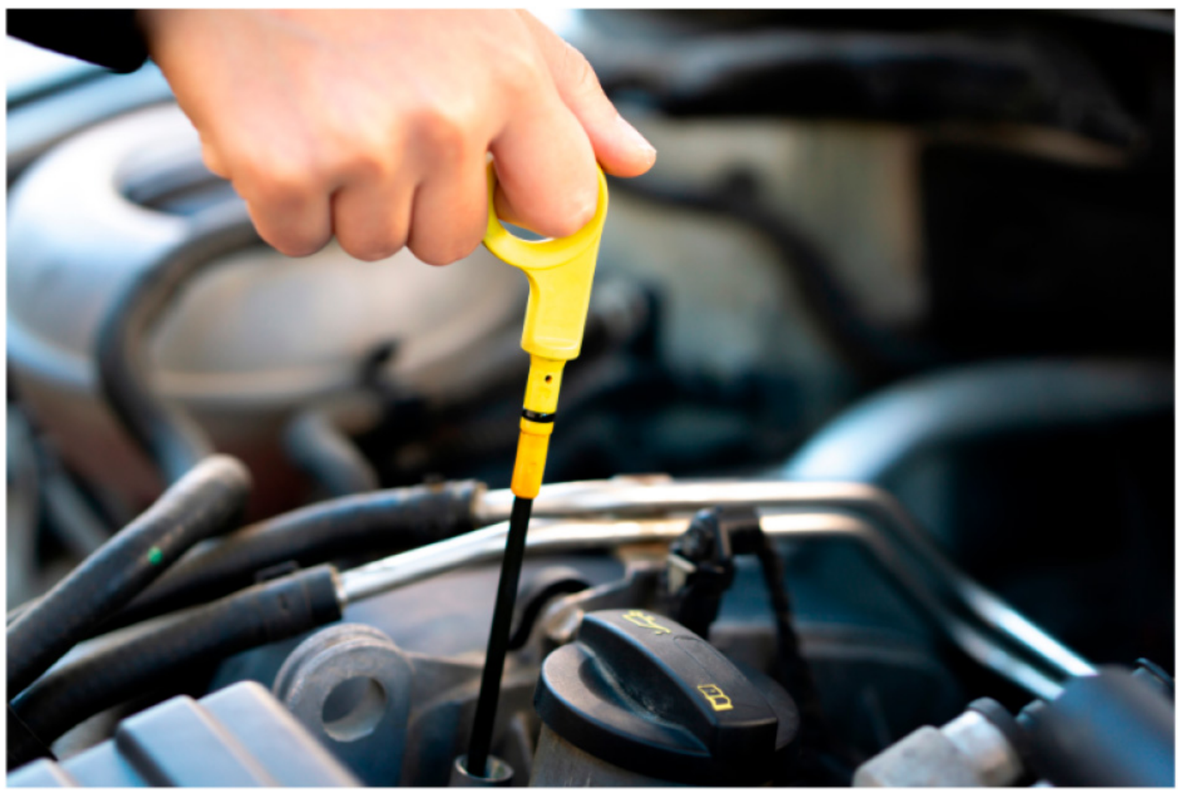
WORRIED ABOUT YOUR ENGINE HEALTH?

CLASSIC YACHT MARINE SURVEYORS

USE SCIENCE TO PUT YOUR MIND AT REST – OIL ANALYSIS SERVICE

Do you know oil tells a story and provides a working history of your equipment as well as the condition of your lubricant?

With an oil analysis, you can get a look inside your equipment and get the story without costly teardowns or unnecessary lubricant changes. This can reduce maintenance costs as well as provide peace of mind knowing that your equipment is safe and not wearing out at an excessive rate.



HOW DOES THE TEST WORK?

We work with Motorchecklab in Florida who are recognized as a leading lab skilled in analyzing potential issues in engines subject to the marine environment. The lab analyses the TBN (Total Base Number) to identify how fresh the oil is, uses a Spectral exam to look for abnormal wear in moving components as indicated by metals and contaminants in the oil, Viscosity to check for contaminants like fuel which reduces viscosity, other tests include measuring contamination by water, glycol (from anti-freeze intrusion) and fuel.

For diesel engines, Soot level is measured to detect improper air/fuel ratios, defective air intakes, faulty injectors, or even blow-by. For gas engines, Nitration products are measured to indicate potential corrosion and accelerated oil deterioration. Attached are example test results. We work with the lab to explain the implications of the tests and advise on any course of action recommended. If you want to have a look into the future of your engine contact us at: (817)-326-7762

CALL OR TEXT FOR APPOINMENT

(817)-326-7762

classicyachtsurveyors@gmail.com

M✓C™ *UNDERSTANDING YOUR REPORT*

	ENGINES	TRANSMISSIONS
ALUMINUM:	PISTONS, BEARINGS, HOUSINGS, THRUST WASHERS, BUSHINGS	TORQUE CONVERTER, THE CASE, THRUST WASHERS, HOUSINGS, GEAR AND VANE PUMPS
CHROMIUM:	COMPRESSION RINGS, LOW FRICTION BEARINGS, LINERS, CHROMATE COOLING SYSTEM	BALL AND ROLLER BEARINGS, ALLOY OF STEEL PARTS
COPPER:	BEARINGS, BUSHINGS, THRUST WASHERS, OIL COOLER, CLUTCHES, AND AN OIL ADDITIVE IN SOME GASOLINE ENGINE OILS.	CLUTCH PLATES, BRONZE BUSHINGS, OIL COOLER OXIDES, BRASS FITTINGS
IRON:	CRANKSHAFT, CYLINDERS, PISTONS, LINERS, BEARINGS, VALVE TRAIN	GEARS, BEARINGS, SHAFTS, SOME CASES, CLUTCH PLATES
LEAD:	BEARINGS, CONTAMINATION FROM LEADED GASOLINE	GEARS
TIN:	PISTON SKIRTS, BEARINGS, AND BUSHINGS.	SOME BEARING CAGES
SILICON:	AIRBORN DIRT, SEAL MATERIAL, GASKETS, USED IN SOME OIL ADDITIVES, SPRAY LUBRICANTS, WHEN FOUND WITH POTASSIUM INDICATES GLYCOL ISSUE	AIRBORN DIRT, SEALERS, GASKETS, USED IN SOME OIL ADDITIVES, SPRAY LUBRICANTS, WHEN FOUND WITH POTASSIUM INDICATES GLYCOL ISSUE, SAND-CASTED PARTS
POTASSIUM:	INDICATION OF GLYCOL OR SALTWATER INTRUSION, ADDITIVE IN SOME OILS	INDICATION OF GLYCOL OR SALTWATER INTRUSION, ADDITIVE IN SOME OILS
SODIUM:	FOUND IN SOME OIL ADDITIVES, GLYCOL, ENVIRONMENTAL COMTAMINANT OR SALT WATER	FOUND IN SOME OIL ADDITIVES, GLYCOL, ENVIRONMENTAL COMTAMINANT OR SALT WATER
WATER:	MEASURED IN % VOLUME, CAN BE INDICATION OF CONDENSATION, COOLING SYSTEM LEAK, OR OUTSIDE CONTAMINATION	
GLYCOL:	MEASURED IN % VOLUME, IN THE FORMULATION OF MOST COMMERCIAL COOLANTS	
OXIDATION:	THIS IS THE RESULTS OF OXYGEN IN THE AIR REACTING WITH THE OIL AT ELEVATED TEMPERATURES. THIS IS A NORMAL PROCESS AS THE OIL AGES. IF AN ENGINE IS OPERATED CONTINUOUSLY AT A HIGH TEMPERATURE FOR EXTENDED PERIODS, OR IF DRAIN INTERVAL IS OVER EXTENDED, OIL CHANGE IS RECOMMENDED.	
NITRATION:	FORMED DURING COMBUSTION PROCESS, LEADS TO ACCELERATED OIL DETERIORATION.	
SOOT:	NORMAL COMBUSTION BY PRODUCT OF DIESEL FUEL AND APPEARS AS CONTAMINANT IN THE OIL CAUSING AN INCREASE IN VISCOSITY. INDICATE AN INPROPER AIR/FUEL RATIO, DEFECTIVE AIR INTAKE, FAULTY INJECTORS, OR BLOW-BY	
VISCOSITY:	CALCULATED MEASUREMENT OF THE OIL'S ABILITY TO FLOW AND LUBRICATE, INDICATES IF OIL IS TOO THICK OR THIN	
TBN:	MEASUREMENT OF OIL'S ALKALINE BASE RESERVE, ADDITIVE IN OIL CAPABLE OF NEUTRALIZING ACIDIC CONTAMINANTS, WHEN TBN IS BELOW 3, IT IS AN INDICATION THE OIL IS NO LONGER SERVICEABLE	
FUEL DILUTION:	MEASURED IN % VOLUME, CAN INDICATE FAULTY COMBUSTION, RICH AIR/FUEL MIXTURE WHEN PRESENT BETWEEN 2%-5%. INJECTOR PROPBLEM OR INTERNAL FUEL LINE LEAK IS TYPICALLY INDICATED WHEN FUEL IS DETECTED AT HIGH LEVELS	

ACCURACY OF RECOMMENDATIONS IS DEPENDENT ON THE REPRESENTATIVE OIL SAMPLES AND COMPLETELY CORRECT DATA ON BOTH UNIT AND OIL. THIS ANALYSIS IS INTENDED AS AN AID IN PREDICTING MECHANICAL WEAR. NO GUARANTEE, EXPRESS OR IMPLIED, IS MADE AGAINST FAILURE OF THIS COMPONENT, MOTOR CHECK(OIL LAB LLC.) LIABILITY IN ANY CASE IS LIMITED TO THE COST OF THE REPORTED ANALYSIS.

OIL ANALYSIS REPORT EXAMPLES

PPA **Phone:** **Email:** **Fax:** ___-___-____	**Machine ID:** GIBRO TOO **Machine Year :** NA **Component Description:**	**Component ID:** CTYN4537C686 **Component Make:** UNIVERSAL **Component Model:** KUBOTA 850 **Component Year:** NA **Component Type :** DIESEL ENGINE **Component Location:** CENTER **Sump Capacity:** 5 Quarts	M✓C **MOTOR CHECK ANALYSIS CLINIC** 2000 N FLORIDA MANGO RD SUITE 104 WEST PALM BEACH FL 33409 561-684-7799

Sample ID	Date Taken	Hours on Component	Hours on Oil	Oil Weight	Oil Brand	Oil Type	Oil Changed	Date Analyzed	User Sample ID
7979	7/10/2018	0	0	15W40	YANMAR	N/A	No	7/10/2018	
Comments	PHYSICAL DATA SUGGESTS THAT OIL IS EITHER NEW OR LIGHTLY USED. ALL ENGINE WEAR RATES NORMAL. SAMPLE APPEARS FREE OF EXTERNAL CONTAMINATION. ANALYSIS INDICATES PROPER PERFORMANCE OF THE LUBRICANT AND UNIT.								

	Wear Metals(ppm)							Contaminant Metals (ppm)			Multi-Source Metals (ppm)					Additives (ppm)				
Sample ID	Iron	Chromium	Aluminum	Copper	Lead	Tin	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Nickel	Manganese	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
7979	7	2	<2	<2	<2	<2	X	8	<2	15	X	58	X	X	X	X	X	X	X	X

	Contaminants				Physical Properties								
Sample ID	Fuel	Soot	Water	Glycol	Nitration	TBN	Oxidation	V40C	V100C	VIndex	V40C Limit	V100C Limit	Visc Mode
7979	-	0.1	<0.1	-	2.5	9.6	<2.0	109	13.4	120	92 - 124	12.5 - 16.3	C

X = Not Applicable for Test Type
NOTE: HOURS OR MILES ON UNIT AND/OR HOURS OR MILES ON OIL: "0"= HOURS/MILES UNKNOWN. UNKNOWN HOURS OR MILES ON UNIT OR ON OIL *LIMITS THE ACCURACY OF THE TEST RESULTS*
*Accuracy of recommendations is dependent on representative oil samples and completely correct data on both unit and oil. This analysis is intended as an aid in predicting mechanical wear, no guarantee expressed or implied, is made against failure of this component. Motor√Check (Oil Lac LLC.) liability in any case is limited to the cost of the reported analysis.

MOTOR✓CHECK™ *ANALYSIS CLINIC*
2000 North Florida Mango Rd., Suite 104
West Palm Beach, Florida 33409
www.MotorCheckLab.com
Phone: (561) 684-7799
Fax: (561) 684-6402

KEY:

ABNORMAL | SEVERE | D = DETECTED | - = NOT DETECTED | X = NOT TESTED / NOT APPLICABLE | NA = NOT AVAILABLE | C = CALCULATED | M = MEASURED

CLASSIC YACHT MARINE SURVEYORS

CALL OR TEXT FOR APPOINMENT
(817)-326-7762
classicyachtsurveyors@gmail.com

www.classicyachtsurveyors.com