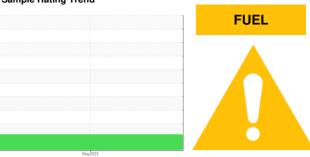


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

BOW THRUSTER

Diesel Engine

SAE 40W (--- QTS)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Tests confirm the presence of fuel in the oil.

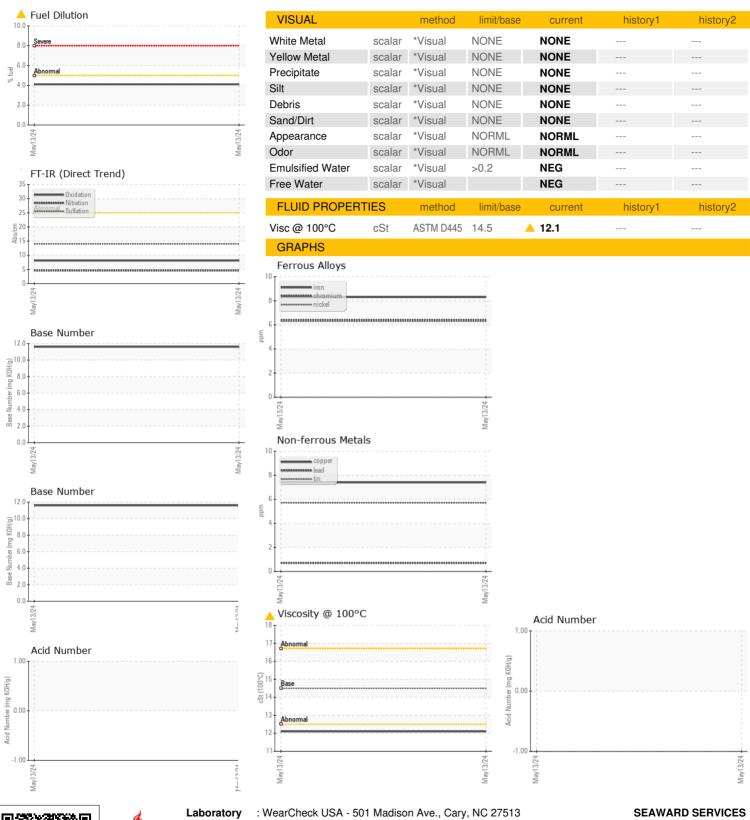
Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

				May2024		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0907660		
Sample Date		Client Info		13 May 2024		
Machine Age	hrs	Client Info		3213		
Oil Age	hrs	Client Info		3202		
Oil Changed		Client Info		Changed		
Sample Status				ABNORMAL		
CONTAMINATION	٧	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8		
Chromium	ppm	ASTM D5185m	>20	6		
Nickel	ppm	ASTM D5185m	>4	6		
Titanium	ppm	ASTM D5185m		7		
Silver	ppm	ASTM D5185m	>3	7		
Aluminum	ppm	ASTM D5185m	>20	7		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	7		
Tin	ppm	ASTM D5185m	>15	6		
Vanadium	ppm	ASTM D5185m		7		
Cadmium	ppm	ASTM D5185m		6		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 19	history1	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	19		
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	19 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12		
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12 7		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12 7 350		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12 7 350 3234		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12 7 350 3234 1000		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12 7 350 3234 1000 1049 4481		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		19 0 12 7 350 3234 1000 1049 4481		
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	19 0 12 7 350 3234 1000 1049 4481	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	19 0 12 7 350 3234 1000 1049 4481 current	 history1	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25	19 0 12 7 350 3234 1000 1049 4481 <u>current</u> 12 6		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20	19 0 12 7 350 3234 1000 1049 4481 current 12 6 8		history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20 >5 limit/base	19 0 12 7 350 3234 1000 1049 4481	history1	history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20 >5 limit/base >3	19 0 12 7 350 3234 1000 1049 4481	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20 >5 limit/base >3 >20	19 0 12 7 350 3234 1000 1049 4481	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	limit/base >25 >20 >5 limit/base >3 >20	19 0 12 7 350 3234 1000 1049 4481	history1 history1	history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D78185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	19 0 12 7 350 3234 1000 1049 4481	history1 history1 history1 history1	history2 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D78185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	limit/base >25	19 0 12 7 350 3234 1000 1049 4481	history1 history1	history2 history2



OIL ANALYSIS REPORT





Certificate 12367

Sample No.

: WC0907660 **Lab Number** : 06211318 Unique Number : 11084182

Received : 17 Jun 2024 **Tested**

: 19 Jun 2024 : 19 Jun 2024 - Angela Borella Diagnosed Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel, TAN Man)

222 PEARL ST NEW ALBANY, IN US 47150 Contact: PETER CHARBONNET

PCHARBONNET@HMS-SEAWARD.COM To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: SEANEW [WUSCAR] 06211318 (Generated: 06/22/2024 22:13:18) Rev: 1

Contact/Location: PETER CHARBONNET - SEANEW

T:

F: