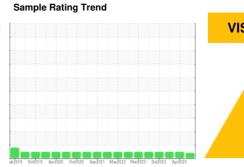


OIL ANALYSIS REPORT









DIAGNOSIS

Recommendation

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

Fuel content negligible. There is no indication of any contamination in the oil.

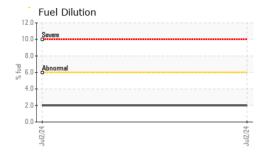
Fluid Condition

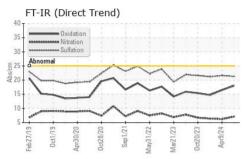
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

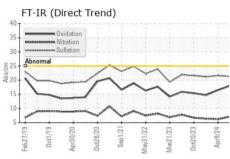
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		ML0002026	ML0001170	ML0000128
Sample Date		Client Info		02 Jul 2024	09 Apr 2024	23 Jan 2024
Machine Age	hrs	Client Info		14101	13489	13139
Oil Age	hrs	Client Info		612	500	515
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				MARGINAL	NORMAL	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	4	5	4
Chromium	ppm	ASTM D5185m	>10	0	<1	0
Nickel	ppm	ASTM D5185m	>10	0	1	0
Titanium	ppm	ASTM D5185m		0	1	2
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	2
Lead	ppm	ASTM D5185m	>20	0	1	<1
Copper	ppm	ASTM D5185m	>15	<1	<1	<1
Tin	ppm	ASTM D5185m	>10	0	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron		AOTA DE LOS		74	011	418
ווטוטם	ppm	ASTM D5185m		74	314	410
Barium	ppm	ASTM D5185m ASTM D5185m		0	<1	0
	• • • • • • • • • • • • • • • • • • • •					
Barium	ppm	ASTM D5185m		0	<1	0
Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m		0 53	<1 91	0 84
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 53 <1	<1 91	0 84 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 53 <1 495	<1 91 1 511	0 84 <1 413
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 53 <1 495 1738	<1 91 1 511 1444	0 84 <1 413 1450
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 53 <1 495 1738 915	<1 91 1 511 1444 870	0 84 <1 413 1450 994
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	limit/base	0 53 <1 495 1738 915 1046	<1 91 1 511 1444 870 944	0 84 <1 413 1450 994 1262
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	limit/base >20	0 53 <1 495 1738 915 1046 3203	<1 91 1 511 1444 870 944 2817	0 84 <1 413 1450 994 1262 3295
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		0 53 <1 495 1738 915 1046 3203	<1 91 1 511 1444 870 944 2817 history1	0 84 <1 413 1450 994 1262 3295 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	>20	0 53 <1 495 1738 915 1046 3203 current	<1 91 1 511 1444 870 944 2817 history1	0 84 <1 413 1450 994 1262 3295 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20 >50	0 53 <1 495 1738 915 1046 3203 current 5	<1 91 1 511 1444 870 944 2817 history1 5	0 84 <1 413 1450 994 1262 3295 history2 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20 >50 >20	0 53 <1 495 1738 915 1046 3203 current 5 3	<1 91 1 511 1444 870 944 2817 history1 5 0 2	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	>20 >50 >20 >20 >6.0	0 53 <1 495 1738 915 1046 3203 current 5 3 0 2.0	<1 91 1 511 1444 870 944 2817 history1 5 0 2 <1.0	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1 <1.0
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	>20 >50 >20 >6.0 limit/base >3	0 53 <1 495 1738 915 1046 3203 current 5 3 0 2.0 current	<1 91 1 511 1444 870 944 2817 history1 5 0 2 <1.0 history1	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1 <1.0
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 ASTM D7844	>20 >50 >20 >6.0 limit/base >3	0 53 <1 495 1738 915 1046 3203 current 5 3 0 2.0 current 0.1	<1 91 1 511 1444 870 944 2817 history1 5 0 2 <1.0 history1 0.1	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1 <1.0 history2
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	>20 >50 >20 >6.0 limit/base >3 >20	0 53 <1 495 1738 915 1046 3203 current 5 3 0 2.0 current 0.1 7.1	<1 91 1 511 1444 870 944 2817 history1 5 0 2 <1.0 history1 0.1 6.2	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1 <1.0 history2 0.1 6.4
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 D7844 *ASTM D7624 *ASTM D76145	>20 >50 >20 >6.0 limit/base >3 >20 >30	0 53 <1 495 1738 915 1046 3203 current 5 3 0 2.0 current 0.1 7.1 21.3	<1 91 1 511 1444 870 944 2817 history1 5 0 2 <1.0 history1 0.1 6.2 21.6	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1 <1.0 history2 0.1 6.4 21.2
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 D7624 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	>20 >50 >20 >6.0 limit/base >3 >20 >30 limit/base	0 53 <1 495 1738 915 1046 3203 current 5 3 0 2.0 current 0.1 7.1 21.3 current	<1 91 1 511 1444 870 944 2817 history1 5 0 2 <1.0 history1 0.1 6.2 21.6 history1	0 84 <1 413 1450 994 1262 3295 history2 5 2 <1 <1.0 history2 0.1 6.4 21.2 history2

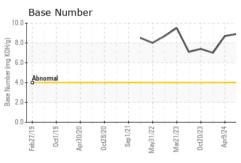


OIL ANALYSIS REPORT





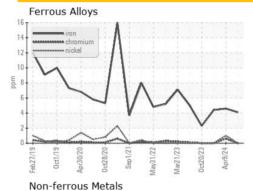


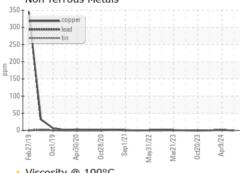


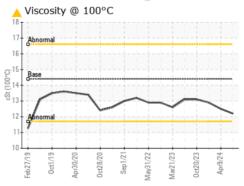
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

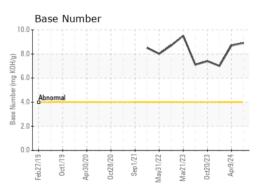
FLUID PROPERTIES		metnoa	ilmit/base	current	nistory i	nistory	
Visc @ 100°C	cSt	ASTM D445	14.4	12.2	12.5	12.9	

GRAPHS













Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Lab Number : 06234224 Unique Number : 11123058

: ML0002026

Received **Tested** Diagnosed

: 11 Jul 2024 : 16 Jul 2024

: 16 Jul 2024 - Jonathan Hester

2410 EVERGREEN RD SUITE 200 GAMBRILLS, MD US 21054

Certificate 12367

Test Package : CONST (Additional Tests: FUELDILUTION, PercentFuel, TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369.

Contact: RUSSELL HATFIELD RHATFIELD@RELIABLECONTRACTING.COM T: (410)987-1851

* - 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)

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