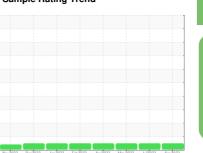


OIL ANALYSIS REPORT

Sample Rating Trend







CATERPILLAR D6 10033 (S/N KEW01101)

Component

Diesel Engine

PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

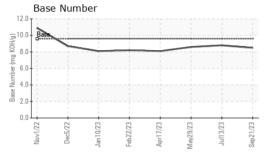
Fluid Condition

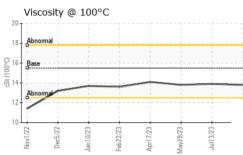
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

131110	`	NOVZOZZ	lec2022 Jan2023 Feb202	23 Apr2023 May2023 Jul2023	Sep2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0831353	WC0816192	WC0790987
Sample Date		Client Info		21 Sep 2023	13 Jul 2023	29 May 2023
Machine Age	hrs	Client Info		4241	3772	3278
Oil Age	hrs	Client Info		468	494	574
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	V	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	16	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	1	0
Lead	ppm	ASTM D5185m	>40	3	1	2
Copper	ppm	ASTM D5185m	>330	9	5	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 4	history1	history2 4
	ppm	ASTM D5185m				
Boron		ASTM D5185m	1	4	6	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	1 1 60	4 0	6 <1	4
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1 1 60	4 0 72	6 <1 67	4 0 57
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 1 60 1	4 0 72 <1	6 <1 67 <1	4 0 57 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 1 60 1 1010	4 0 72 <1 1037	6 <1 67 <1 1045	4 0 57 <1 928
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 1 60 1 1010 1070	4 0 72 <1 1037 1413	6 <1 67 <1 1045 1310	4 0 57 <1 928 1224
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	1 1 60 1 1010 1070 1150 1270	4 0 72 <1 1037 1413 1181	6 <1 67 <1 1045 1310 1154	4 0 57 <1 928 1224 1001
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	1 1 60 1 1010 1070 1150 1270	4 0 72 <1 1037 1413 1181 1493	6 <1 67 <1 1045 1310 1154 1423	4 0 57 <1 928 1224 1001 1261
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 1 60 1 1010 1070 1150 1270 2060	4 0 72 <1 1037 1413 1181 1493 4211	6 <1 67 <1 1045 1310 1154 1423 4007	4 0 57 <1 928 1224 1001 1261 3608
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 1 60 1 1010 1070 1150 1270 2060	4 0 72 <1 1037 1413 1181 1493 4211 current	6 <1 67 <1 1045 1310 1154 1423 4007 history1	4 0 57 <1 928 1224 1001 1261 3608 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 1 60 1 1010 1070 1150 1270 2060	4 0 72 <1 1037 1413 1181 1493 4211 current	6 <1 67 <1 1045 1310 1154 1423 4007 history1	4 0 57 <1 928 1224 1001 1261 3608 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25	4 0 72 <1 1037 1413 1181 1493 4211 current 4	6 <1 67 <1 1045 1310 1154 1423 4007 history1 4	4 0 57 <1 928 1224 1001 1261 3608 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	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25	4 0 72 <1 1037 1413 1181 1493 4211 current 4 2 <1	6 <1 67 <1 1045 1310 1154 1423 4007 history1 4 1 0	4 0 57 <1 928 1224 1001 1261 3608 history2 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	4 0 72 <1 1037 1413 1181 1493 4211 current 4 2 <1	6 <1 67 <1 1045 1310 1154 1423 4007 history1 4 1 0 history1	4 0 57 <1 928 1224 1001 1261 3608 history2 3 1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method *ASTM D7844	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	4 0 72 <1 1037 1413 1181 1493 4211 current 4 2 <1 current 0.6	6 <1 67 <1 1045 1310 1154 1423 4007 history1 0 history1 0.6	4 0 57 <1 928 1224 1001 1261 3608 history2 3 1 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25 >20	4 0 72 <1 1037 1413 1181 1493 4211 current 4 2 <1 current 0.6 7.6	6 <1 67 <1 1045 1310 1154 1423 4007 history1 4 1 0 history1 0.6 8.2	4 0 57 <1 928 1224 1001 1261 3608 history2 3 1 <1 history2 0.5 7.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	4 0 72 <1 1037 1413 1181 1493 4211 current 4 2 <1 current 0.6 7.6 19.6	6 <1 67 <1 1045 1310 1154 1423 4007 history1 0 6 8.2 19.3	4 0 57 <1 928 1224 1001 1261 3608 history2 3 1 <1 history2 0.5 7.6 20.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm	ASTM D5185m METHOD ASTM D5185m METHOD *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m METHOD *ASTM D7844 *ASTM D7624 *ASTM D7415 METHOD	1 1 60 1 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	4 0 72 <1 1037 1413 1181 1493 4211 current 4 2 <1 current 0.6 7.6 19.6 current	6 <1 67 <1 1045 1310 1154 1423 4007 history1 4 1 0 history1 0.6 8.2 19.3 history1	4 0 57 <1 928 1224 1001 1261 3608 history2 3 1 <1 history2 0.5 7.6 20.0 history2



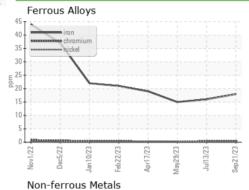
OIL ANALYSIS REPORT

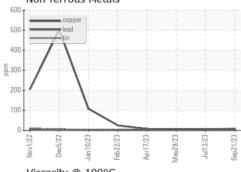


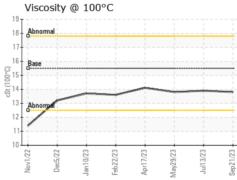


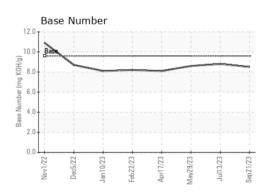
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPERTIES		metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.5	13.8	13.9	13.8













Laboratory Sample No. Lab Number

: WC0831353 : 05965054 Unique Number : 10671605

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 29 Sep 2023

Diagnosed : 02 Oct 2023 Diagnostician : Wes Davis

Test Package : CONST (Additional Tests: TBN) 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)

TRADER CONSTRUCTION CO.

PO DRAWER 1578 NEW BERN, NC US 28563

Contact: MIKE WYATT mwyatt@traderconstruction.com

T: (252)633-1399

F: (252)638-4871