

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

KENWORTH 3919

Component Diesel Engine

Fluid CHEVRON DELO 400 XLE 10W30 (40 QTS)

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.

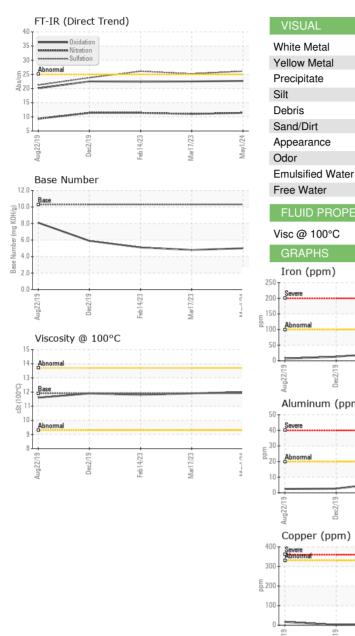
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0650642	WC0754167	WC0650663
Sample Date		Client Info		01 May 2024	17 Mar 2023	14 Feb 2023
Machine Age	mls	Client Info		399354	289407	386424
Oil Age	mls	Client Info		0	49148	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
		mathad	limit/bass			
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	29	19	24
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		2	<1	1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	7	5	6
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	7	7	6
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	<1 current	0 history1	0 history2
	ppm ppm		limit/base			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 32	history1 27	history2 21
ADDITIVES Boron Barium	ppm ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 32 0	history1 27 0	history2 21 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 32 0 3	history1 27 0 4	history2 21 0 2
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 32 0 3 <1	history1 27 0 4 <1	history2 21 0 2 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		current 32 0 3 <1 636	history1 27 0 4 <1 759	history2 21 0 2 <1 617
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900	current 32 0 3 <1 636 1479	history1 27 0 4 <1 759 1459	history2 21 0 2 <1 617 1589
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100	current 32 0 3 <1 636 1479 765	history1 27 0 4 <1 759 1459 725	history2 21 0 2 <1 617 1589 728
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200	current 32 0 3 <1 636 1479 765 894	history1 27 0 4 <1 759 1459 725 865	history2 21 0 2 <1 617 1589 728 890
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200 4000	current 32 0 3 <1 636 1479 765 894 3411	history1 27 0 4 <1 759 1459 725 865 3438	history2 21 0 2 <1 617 1589 728 890 3455
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base	32 0 3 <1 636 1479 765 894 3411 current	history1 27 0 4 <1 759 1459 725 865 3438 history1	history2 21 0 2 <1 617 1589 728 890 3455 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2900 1100 1200 4000 limit/base >25	current 32 0 3 <1 636 1479 765 894 3411 current 8	history1 27 0 4 <1 759 1459 725 865 3438 history1 8	history2 21 0 2 <1 617 1589 728 890 3455 history2 8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2900 1100 1200 4000 limit/base >25	current 32 0 3 <1 636 1479 765 894 3411 current 8 1	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3	history2 21 0 2 <1 617 1589 728 890 3455 history2 8 3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	2900 1100 1200 4000 limit/base >25 >20 limit/base	32 0 3 <1 636 1479 765 894 3411 current 8 1 7 current	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3 6 history1	history2 21 0 2 <1 617 1589 728 890 3455 history2 8 3 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	method ASTM D5185m	2900 1100 1200 4000 limit/base >25 >20 limit/base >3	current 32 0 3 <1 636 1479 765 894 3411 current 8 1 7 current 0 0.8	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3 6 history1 0.5	history2 21 0 2 <1 617 1589 728 890 3455 history2 8 3 4 history2 0.7
ADDITIVES 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	method ASTM D5185m	2900 1100 1200 4000 limit/base >25 >20 limit/base >3 >20	32 0 3 <1 636 1479 765 894 3411 current 8 1 7 current	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3 6 history1	history2 21 0 2 <1 617 1589 728 890 3455 history2 8 3 4
ADDITIVES 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	method ASTM D5185m ASTM D5185m	2900 1100 1200 4000 1imit/base >25 >20 1imit/base >3 >20 >30	Current 32 0 3 <1 636 1479 765 894 3411 current 8 1 7 current 0.8 11.4 26.1	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3 6 history1 0.5 11.0 25.2	history2 21 0 2 <1 617 1589 728 890 3455 history2 8 3 4 history2 0.7 11.4
ADDITIVES 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	method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method	29900 1100 1200 4000 225 220 220 imit/base >3 >20 >30 30 imit/base	32 0 3 <1 636 1479 765 894 3411 current 8 1 7 current 0.8 11.4 26.1 current	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3 6 history1 0.5 11.0 25.2 history1	history2 21 0 2 <10 617 1589 728 890 3455 history2 8 3 4 history2 0.7 11.4 26.1 history2
ADDITIVES 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	method ASTM D5185m ASTM D5185m	2900 1100 1200 4000 1imit/base >25 >20 1imit/base >3 >20 >30	Current 32 0 3 <1 636 1479 765 894 3411 current 8 1 7 current 0.8 11.4 26.1	history1 27 0 4 <1 759 1459 725 865 3438 history1 8 3 6 history1 0.5 11.0 25.2	history2 21 0 2 <1 617 1589 728 890 3455 history2 8 3 4 history2 0.7 11.4 26.1

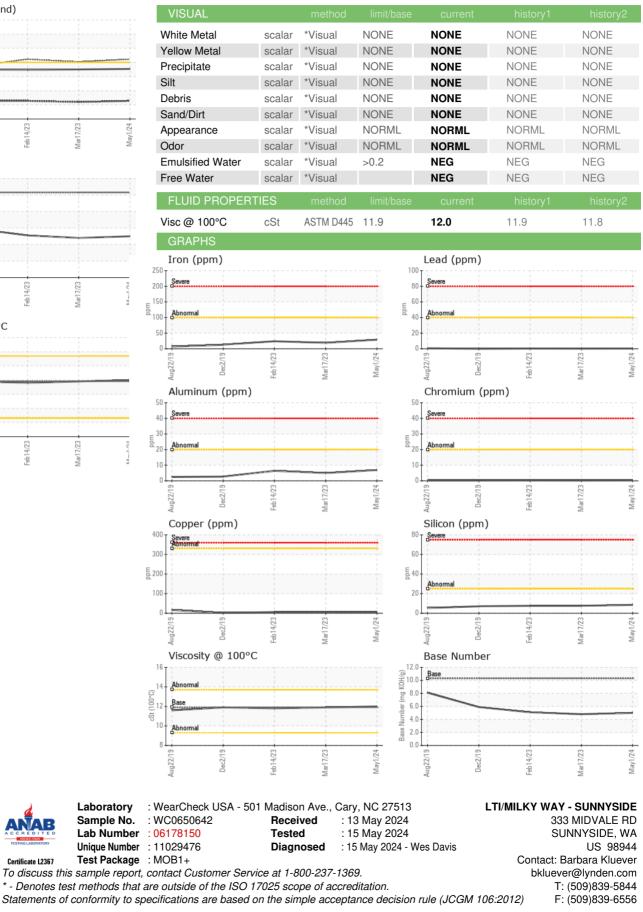
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Contact/Location: Barbara Kluever - LTISUN



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Laboratory

Sample No.

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Contact/Location: Barbara Kluever - LTISUN