

OIL ANALYSIS REPORT

Sample Rating Trend

288ooooooooooo



FREIGHTLINER 1162

Diesel Engine

Fluid CHEVRON DELO 400 XLE 10W30 (40 LTR)

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.

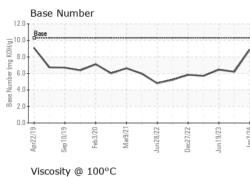
Fluid Condition

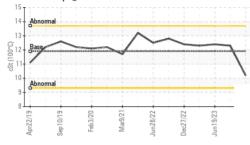
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0851825	WC0733131	WC0733090
Sample Date		Client Info		02 Jan 2024	10 Oct 2023	19 Jun 2023
Machine Age	mls	Client Info		669931	628030	591982
Oil Age	mls	Client Info		40000	40000	40000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	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	>80	9	17	20
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	2	5	8
Lead	ppm	ASTM D5185m	>30	0	0	<1
Copper	ppm	ASTM D5185m	>150	7	32	33
Tin	ppm	ASTM D5185m	>5	<1	2	2
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1 15	history2 19
	ppm ppm		limit/base	current		
Boron		ASTM D5185m	limit/base	current 50	15	19
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	current 50 1	15 0	19 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 50 1 30	15 0 0	19 0 1
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 50 1 30 0	15 0 0 <1	19 0 1 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		current 50 1 30 0 563	15 0 0 <1 693	19 0 1 <1 741
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900	current 50 1 30 0 563 1522	15 0 0 <1 693 1243	19 0 1 <1 741 1446
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100	current 50 1 30 0 563 1522 779	15 0 0 <1 693 1243 652	19 0 1 <1 741 1446 732
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200	current 50 1 30 0 563 1522 779 851	15 0 0 <1 693 1243 652 742	19 0 1 <1 741 1446 732 868
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base	Current 50 1 30 0 563 1522 779 851 2671	15 0 0 <1 693 1243 652 742 2365	19 0 1 <1 741 1446 732 868 3121
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	2900 1100 1200 4000 limit/base	current 50 1 30 0 563 1522 779 851 2671 current	15 0 0 <1 693 1243 652 742 2365 history1	19 0 1 <1 741 1446 732 868 3121 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2900 1100 1200 4000 limit/base >20	current 50 1 30 0 563 1522 779 851 2671 current 7	15 0 0 <1 693 1243 652 742 2365 history1 5	19 0 1 <1 741 1446 732 868 3121 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base >20	current 50 1 30 0 563 1522 779 851 2671 current 7 0	15 0 0 <1 693 1243 652 742 2365 history1 5 <1	19 0 1 <1 741 1446 732 868 3121 history2 6 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base >20 >20	current 50 1 30 0 563 1522 779 851 2671 current 7 0 2	15 0 0 <1 693 1243 652 742 2365 history1 5 <1 0	19 0 1 <1 741 1446 732 868 3121 history2 6 0 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2900 1100 1200 4000 limit/base >20 limit/base	current 50 1 30 0 563 1522 779 851 2671 7 0 2 current current	15 0 0 <1 693 1243 652 742 2365 history1 5 <1 0	19 0 1 <1 741 1446 732 868 3121 history2 6 0 5 5 history2
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 ASTM D5185m	2900 1100 1200 4000 limit/base >20 >20 limit/base >3	current 50 1 30 0 563 1522 779 851 2671 7 0 2 current 0 2. current 0.2	15 0 0 <1 693 1243 652 742 2365 history1 5 <1 0 history1 0.7	19 0 1 <1 741 1446 732 868 3121 history2 6 0 5 history2 0.6
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 ASTM D5185m	29900 1100 1200 4000 imit/base >20 >20 imit/base >3 >20	current 50 1 30 0 563 1522 779 851 2671 77 0 2 current 0 2 current 0.2 6.3	15 0 0 <1 693 1243 652 742 2365 history1 5 <1 0 history1 0.7 10.5	19 0 1 <1 741 1446 732 868 3121 history2 6 0 5 history2 0.6 10.1
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 ASTM D5185m	2900 1100 1200 4000 220 >20 20 imit/base >3 >20 >3 >20	current 50 1 30 0 563 1522 779 851 2671 7 0 2 current 0 2 current 0.2 6.3 22.0	15 0 0 <1 693 1243 652 742 2365 history1 5 <1 0 history1 0.7 10.5 23.0	19 0 1 <1 741 741 1446 732 868 3121 history2 6 0 5 history2 0.6 10.1 21.9
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 ASTM D7844 *ASTM D7844	29900 1100 1200 4000 20 20 220 220 imit/base >3 >20 >30 >30	current 50 1 30 0 563 1522 779 851 2671 current 7 0 2 current 0.2 6.3 22.0 current	15 0 0 (3 1243 652 742 2365 history1 5 <100 history1 0.7 10.5 23.0 history1	19 0 1 <1 741 1446 732 868 3121 history2 6 0 5 history2 0.6 10.1 21.9 history2



OIL ANALYSIS REPORT





Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report, of * - Denotes test methods that a	: WearCheck USA - : WC0851825 : 06065113 : 10836495 : MOB 2	501 Madia Recieved Diagnose Diagnost	d :18. ed :22.	ary, NC 27513 Jan 2024 Jan 2024 an Felton		LYNDEN TRANSPORT - SPRUCE GROVE 27340 ACHESON RD, ACHESON INDUSTRIAL PARI ACHESON, AE CA T7X 6B1 Contact: Mathieu Carby mcarby@lynden.com T:			
		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Mar9/21 Jun28/22	Dec27/22	Base Number 1000 Base N	Apri22/19	Mar9/21	Dec27/22	
		Viscosity @ 100°		~ ~	12.0	Base Number	~		
		Apr/22/19 0 00	Mar9/21	Dec27/22	Jan2/24	Apr22/19	Mar9/21	Dec27/22	
		500 400 300 Severe 200 Abnormal			30 톨 20	Abnormal			
		Copper (ppm)			40	Silicon (ppm)			
		Apri22/19 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Mar9/21	Dec27/22 +	d 4	Apri22/19 Sep10/19 Feb3/20	Mar9/21 +	Dec27/22 +)	
		60 50 40 Abnomal			12 10 8 <u>5</u> 6	Severe			
		Apri22/19 Feb 3/20 Feb 3/20	Mar9/21+ Jun28/22 +	Dec27/22 + Jun19/23 +	Jan2/24	Chromium (pp	(W Mar8/21	Dec27/22	
Jun 28/22	Dec27/22 Jun19/23	Abnormal 50	\sim		톱.40 20	0			
un28/22	9/23	Iron (ppm)			60	Lead (ppm)			
	\sim	GRAPHS							
\sim		FLUID PROPER Visc @ 100°C	cSt	method ASTM D445	limit/base 11.9	current	history1 12.3	history2 12.4	
		Free Water	scalar	*Visual		NEG	NEG	NEG	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
Jun28/22	Dec27/22 Jun19/23 Jan2/24	Appearance Odor	scalar scalar	*Visual	NORML	NORML NORML	NORML	NORML	
22 -	22	Sand/Dirt	scalar	*Visual *Visual	NONE NORML	NONE	NONE	NONE	
	/	Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
~		Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
_		Yellow Metal Precipitate	scalar scalar	*Visual *Visual	NONE NONE	NONE	NONE	NONE	
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	

Contact/Location: Mathieu Carby - LYNSPR