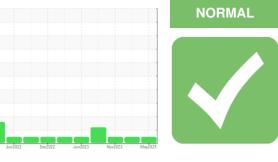


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 727027-598 Component

Diesel Engine

CHEVRON DELO 400 XLE 15W40 (--- GAL)

SAMPLE INFORMATION method

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.

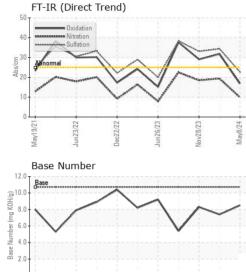
Fluid Condition

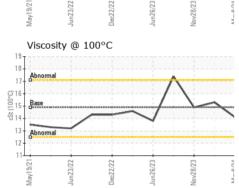
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		method				
Sample Number		Client Info		GFL0104674	GFL0104601	GFL0096309
Sample Date		Client Info		08 May 2024	06 Mar 2024	28 Nov 2023
Machine Age	hrs	Client Info		16574	16442	0
Oil Age	hrs	Client Info		124399	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	24	72	76
Chromium	ppm	ASTM D5185m	>20	1	3	4
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	7	8	7
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	9	10
Lead	ppm	ASTM D5185m	>40	<1	1	2
Copper	ppm	ASTM D5185m	>330	2	2	2
Tin	ppm		>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current	history1 94	history2 107
	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base			
Boron	ppm	ASTM D5185m	limit/base	241	94	107
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	limit/base	241 0 63	94 0 79	107 2
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	241 0 63 <1	94 0	107 2 115
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	241 0 63	94 0 79 <1 713	107 2 115 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	241 0 63 <1 504	94 0 79 <1	107 2 115 0 833
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		241 0 63 <1 504 1367 771	94 0 79 <1 713 1646 836	107 2 115 0 833 1838
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	241 0 63 <1 504 1367	94 0 79 <1 713 1646	107 2 115 0 833 1838 872
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	760 830 2770	241 0 63 <1 504 1367 771 918	94 0 79 <1 713 1646 836 950	107 2 115 0 833 1838 872 1032 3475
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 ASTM D5185m ASTM D5185m	760 830	241 0 63 <1 504 1367 771 918 3227	94 0 79 <1 713 1646 836 950 3263	107 2 115 0 833 1838 872 1032
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base	241 0 63 <1 504 1367 771 918 3227 current 6	94 0 79 <1 713 1646 836 950 3263 history1	107 2 115 0 833 1838 872 1032 3475 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	760 830 2770 limit/base	241 0 63 <1 504 1367 771 918 3227 current	94 0 79 <1 713 1646 836 950 3263 history1 11	107 2 115 0 833 1838 872 1032 3475 history2 16
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25	241 0 63 <1 504 1367 771 918 3227 current 6 3	94 0 79 <1 713 1646 836 950 3263 history1 11 8	107 2 115 0 833 1838 872 1032 3475 history2 16 13
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25 >20	241 0 63 <1 504 1367 771 918 3227 current 6 3 6	94 0 79 <1 713 1646 836 950 3263 history1 11 8 8 8	107 2 115 0 833 1838 872 1032 3475 history2 16 13 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25 >20	241 0 63 <1 504 1367 771 918 3227 current 6 3 6 3 6 current 1.2	94 0 79 <1 713 1646 836 950 3263 history1 11 8 8 8 8	107 2 115 0 833 1838 872 1032 3475 history2 16 13 11 11 history2 3.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25 >20 limit/base >20	241 0 63 <1 504 1367 771 918 3227 current 6 3 6 3 6	94 0 79 <1 713 1646 836 950 3263 history1 11 8 8 8 history1 3.6	107 2 115 0 833 1838 872 1032 3475 history2 16 13 11 11 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 imit/base >25 >20 imit/base >20	241 0 63 <1 504 1367 771 918 3227 current 6 3 6 current 1.2 9.9	94 0 79 <1 713 1646 836 950 3263 history1 11 8 8 8 history1 3.6 19.4	107 2 115 0 833 1838 872 1032 3475 history2 16 13 11 history2 3.4 18.5 33.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	760 830 2770 imit/base >25 20 220 imit/base >4 >20 >30	241 0 63 <1 504 1367 771 918 3227 current 6 3 227 current 1.2 9.9 22.7	94 0 79 <1 713 1646 836 950 3263 history1 11 8 8 8 history1 3.6 19.4 34.4 history1	107 2 115 0 833 1838 872 1032 3475 history2 16 13 11 history2 3.4 18.5 33.1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 Imit/base >25 >20 Imit/base >20 Imit/base >4 >20 >30	241 0 63 <1 504 1367 771 918 3227 current 6 3 6 current 1.2 9.9 22.7	94 0 79 <1 713 1646 836 950 3263 history1 11 8 8 8 history1 3.6 19.4 34.4	107 2 115 0 833 1838 872 1032 3475 history2 16 13 11 history2 3.4 18.5 33.1



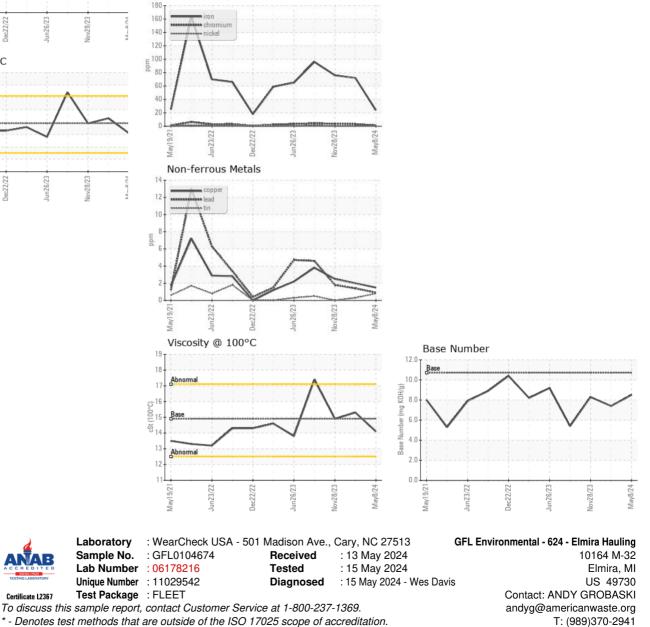
OIL ANALYSIS REPORT





VISUAL		method				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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	14.1	15.3	14.9
GRAPHS						

Ferrous Alloys



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate 12367

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