

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

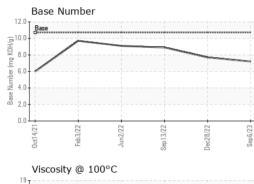
Fluid Condition

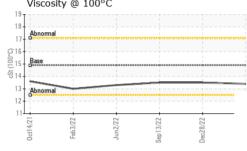
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084507	GFL0064718	GFL0037104
Sample Date		Client Info		06 Sep 2023	28 Dec 2022	13 Sep 2022
Machine Age	hrs	Client Info		16345	15741	15171
Oil Age	hrs	Client Info		604	570	573
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	s	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	8	7
Chromium	ppm		>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	0	12	6	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		3	3	4
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m		4	6	8
Tin	ppm		>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base		history1	history2
ADDITIVES		methou	iiiiii/base	Current	TIIStOry I	matoryz
Boron	ppm	ASTM D5185m	IIIIII/Dase	121	170	289
	ppm ppm		inniv base			
Boron		ASTM D5185m	IIIII/Jase	121	170	289
Boron Barium	ppm	ASTM D5185m ASTM D5185m	IIIII/Jase	121 0	170 0	289 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		121 0 48	170 0 78	289 0 113
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		121 0 48 1	170 0 78 <1	289 0 113 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	121 0 48 1 766	170 0 78 <1 589	289 0 113 <1 575
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		121 0 48 1 766 1612	170 0 78 <1 589 1692	289 0 113 <1 575 1506
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	121 0 48 1 766 1612 753	170 0 78 <1 589 1692 714	289 0 113 <1 575 1506 695
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830	121 0 48 1 766 1612 753 916	170 0 78 <1 589 1692 714 952	289 0 113 <1 575 1506 695 821
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 ASTM D5185m	760 830 2770 limit/base	121 0 48 1 766 1612 753 916 3912	170 0 78 <1 589 1692 714 952 3245	289 0 113 <1 575 1506 695 821 2604
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 2770 limit/base	121 0 48 1 766 1612 753 916 3912 current	170 0 78 <1 589 1692 714 952 3245 history1	289 0 113 <1 575 1506 695 821 2604 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	760 830 2770 limit/base >25	121 0 48 1 766 1612 753 916 3912 current 16	170 0 78 <1 589 1692 714 952 3245 history1 20	289 0 113 <1 575 1506 695 821 2604 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 >25	121 0 48 1 766 1612 753 916 3912 current 16 1	170 0 78 <1 589 1692 714 952 3245 history1 20 2	289 0 113 <1 575 1506 695 821 2604 history2 5 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25	121 0 48 1 766 1612 753 916 3912 current 16 1 1 4	170 0 78 <1 589 1692 714 952 3245 history1 20 2 2 2	289 0 113 <1 575 1506 695 821 2604 history2 5 0 <1
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	121 0 48 1 766 1612 753 916 3912 current 16 1 4 current 0.2	170 0 78 <1 589 1692 714 952 3245 history1 20 2 2 2 2 history1 0.2	289 0 113 <1 575 1506 695 821 2604 history2 5 0 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25 >20 limit/base >3 >20	121 0 48 1 766 1612 753 916 3912 current 16 1 4 current	170 0 78 <1 589 1692 714 952 3245 history1 20 2 2 2 2	289 0 113 <1 575 1506 695 821 2604 history2 5 0 <1 history2 0.9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25 >20 limit/base >3 >20	121 0 48 1 766 1612 753 916 3912 current 16 1 4 current 0.2 9.2	170 0 78 <1 589 1692 714 952 3245 history1 20 2 2 2 2 history1 0.2 9.1	289 0 113 <1 575 1506 695 821 2604 history2 5 0 <1 history2 0.9 11.1
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 ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 imit/base >25 >20 imit/base >3 >20 >30	121 0 48 1 766 1612 753 916 3912 current 16 1 4 current 0.2 9.2 19.3	170 0 78 <1 589 1692 714 952 3245 history1 20 2 2 2 history1 0.2 9.1 20.2 history1	289 0 113 <1 575 1506 695 821 2604 history2 5 0 <1 history2 0.9 11.1 24.4 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 ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 imit/base >25 20 imit/base >3 >20 >30 imit/base >30	121 0 48 1 766 1612 753 916 3912 <u>current</u> 16 1 4 <u>current</u> 0.2 9.2 19.3	170 0 78 <1 589 1692 714 952 3245 history1 20 2 2 2 2 history1 0.2 9.1 20.2	289 0 113 <1 575 1506 695 821 2604 history2 5 0 <1 history2 0.9 11.1 24.4



OIL ANALYSIS REPORT





VISUAL						
NOONL		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 PROPER	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	13.4	13.5	13.5
GRAPHS						
Ferrous Alloys						
Ferrous Alloys	22/Ei deg	Dec28/22	Sep6/23			



Lab Number : 05946930 Diagnosed : 12 Sep 2023 Unique Number : 10642889 Diagnostician : Wes Davis Test Package : FLEET Contact: MITCH HERSHBERGER Certificate L2367 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)

Jun2/22 -

eb3/22

Viscosity @ 100°C

Feb3/22.

Oct14

Ab

19

18

17

(100°C) (100°C

13 Abnorma 12 11-

Laboratory

Sample No.

Oct14/21-

: GFL0084507

Sep 13/22

Sep 13/22

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

Received

ec28/22

Dec28/22 -

ep6/23

Sep6/23 -

: 11 Sep 2023

12.0

10.0

8.0 6.0 4.0

0.0

0ct14/21-

Base Number (mg KOH/g)

Ba

Base Number

Feb3/22

Jun2/22

Dec28/22 -

3947 US 131 N

US 49646-8428

Kalkaska, MI

Sep6/23

Sep 13/22

GFL Environmental - 629 - Northern A1

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