

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 254000-1100

Component Gasoline Engine Fluid CHEVRON DELO 400 XLE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. 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 oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0096324	GFL0064478	GFL0064486
Sample Date		Client Info		29 Dec 2023	29 Jul 2023	26 Jun 2023
Machine Age	mls	Client Info		198580	187608	186115
Oil Age	mls	Client Info		187608	0	2277
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	43	29	31
Chromium	ppm	ASTM D5185m	>20	2	1	1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		10	8	9
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>40	6	4	3
Lead	ppm	ASTM D5185m	>50	<1	0	0
Copper	ppm	ASTM D5185m	>155	28	24	28
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		40	54	60
Barium	ppm	ASTM D5185m		0	0	0
Molybdonum						
Morybuenum	ppm	ASTM D5185m		56	82	93
Manganese	ppm ppm	ASTM D5185m ASTM D5185m		56 1	82 <1	93 <1
Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		56 1 686	82 <1 633	93 <1 622
Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		56 1 686 1457	82 <1 633 1427	93 <1 622 1458
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	56 1 686 1457 698	82 <1 633 1427 629	93 <1 622 1458 648
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830	56 1 686 1457 698 818	82 <1 633 1427 629 871	93 <1 622 1458 648 847
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770	56 1 686 1457 698 818 2871	82 <1 633 1427 629 871 2991	93 <1 622 1458 648 847 2839
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base	56 1 686 1457 698 818 2871 current	82 <1 633 1427 629 871 2991 history1	93 <1 622 1458 648 847 2839 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	760 830 2770 limit/base >30	56 1 686 1457 698 818 2871 current 8	82 <1 633 1427 629 871 2991 history1 9	93 <1 622 1458 648 847 2839 history2 12
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base >30 >400	56 1 686 1457 698 818 2871 current 8 5	82 <1 633 1427 629 871 2991 history1 9 2	93 <1 622 1458 648 847 2839 history2 12 4
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base >30 >400 >20	56 1 686 1457 698 818 2871 current 8 5 5 2	82 <1 633 1427 629 871 2991 history1 9 2 3	93 <1 622 1458 648 847 2839 history2 12 4 2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm 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 ASTM D5185m ASTM D5185m	760 830 2770 Iimit/base >30 >400 >20 Iimit/base	56 1 686 1457 698 818 2871 current 8 5 2 2 current	82 <1 633 1427 629 871 2991 history1 9 2 3 history1	93 <1 622 1458 648 847 2839 history2 12 4 2 2 history2
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 >30 >400 >20 limit/base	56 1 686 1457 698 818 2871 current 8 5 2 2 current 0.1	82 <1 633 1427 629 871 2991 history1 9 2 3 3 history1 0.1	93 <1 622 1458 648 847 2839 history2 12 4 2 2 history2 0.1
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	760 830 2770 Iimit/base >30 >400 >20 Iimit/base	56 1 686 1457 698 818 2871 current 8 5 2 2 current 0.1 18.7	82 <1 633 1427 629 871 2991 history1 9 2 3 3 history1 0.1 16.6	93 <1 622 1458 648 847 2839 history2 12 4 2 2 history2 0.1 6.6
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm kos/cm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844	760 830 2770 imit/base >30 >400 >20 imit/base >20 >20 >30	56 1 686 1457 698 818 2871 current 8 5 2 2 current 0.1 18.7 33.0	82 <1 633 1427 629 871 2991 history1 9 2 3 history1 0.1 16.6 30.3	93 <1 622 1458 648 847 2839 history2 12 4 2 2 history2 0.1 6.6 19.5
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Solicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415	760 830 2770 Imit/base >30 >400 >20 Imit/base >20 >20 20 30	56 1 686 1457 698 818 2871 current 8 5 2 2 current 0.1 18.7 33.0 current	82 <1 633 1427 629 871 2991 history1 9 2 3 history1 0.1 16.6 30.3 history1	93 <1 622 1458 648 847 2839 history2 12 4 2 2 history2 0.1 6.6 19.5 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm % Abs/cm Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7415	760 830 2770 Imit/base >30 >400 >20 Imit/base >20 >30 Santase >20 Santase >20 Santase >20 Santase >20 Santase Santas Santase Santase Santase Santase Santase Santase Santase Santase Santase Santas Santase Santas Santas Santase Santas Santase Santas Santase Santas Santas Santas Santas Santas Santas Santas Santas Santas Santas Santas S	56 1 686 1457 698 818 2871 current 8 5 2 current 0.1 18.7 33.0 current 34.2	82 <1 633 1427 629 871 2991 history1 9 2 3 history1 0.1 16.6 30.3 history1 29.9	93 <1 622 1458 648 847 2839 history2 12 4 2 history2 0.1 6.6 19.5 history2 15.7
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm % Abs/cm Abs/.tmm pAtiON	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7844 *ASTM D7415	760 830 2770 imit/base >30 >400 >20 imit/base >20 >30 imit/base >25 10.7	56 1 686 1457 698 818 2871 current 8 5 2 current 0.1 18.7 33.0 current 34.2 5.2	82 <1 633 1427 629 871 2991 history1 9 2 3 history1 0.1 16.6 30.3 history1 29.9 5.5	93 <1 622 1458 648 847 2839 history2 12 4 2 0.1 6.6 19.5 history2 15.7 9.8



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
26/23	29/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Jun	Juľ	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
\wedge		FLUID PROPE	RTIES	method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445	14.9	1 7.4	15.4	15.3
		GRAPHS						
		Ferrous Alloys						
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	Viscosity @ 100°C	- -	,					
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d	Laboratory	: WearCheck USA - 5		,	.,,			
NAB	Laboratory Sample No.	: WearCheck USA - 5 : GFL0096324	Recieved	: 08	Jan 2024			10164 M-3
	Laboratory Sample No. Lab Number	: WearCheck USA - 5 : GFL0096324 I : 06053351 I : 10819300	Recieved Diagnose	: 08 d : 09 cian : lon	Jan 2024 Jan 2024 Jathan Hester	r		10164 M-3 Elmira, N
INTEREST OF THE LABORTONY	Laboratory Sample No. Lab Number Unique Number Test Package	: WearCheck USA - 5 : GFL0096324 I : 06053351 I : 10819300 I : FLEET	Recieved Diagnose Diagnosti	: 08 d : 09 cian : Jon	Jan 2024 Jan 2024 Jathan Hester	r	Contact: AN	10164 M-3 Elmira, M US 4973 DY GROBASK
rificate L2367 discuss this	Laboratory Sample No. Lab Number Unique Number Test Package s sample report,	: WearCheck USA - 5 : GFL0096324 I : 06053351 I : 10819300 I : FLEET contact Customer Servi	Recieved Diagnose Diagnosti	: 08 d : 09 cian : Jon 00-237-1368	Jan 2024 Jan 2024 Jathan Hester	r	Contact: ANI andyg@ame	10164 M-3 Elmira, N US 4973 DY GROBASP ericanwaste.or

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Submitted By: KEITH CAMPBELL