

OIL ANALYSIS REPORT



Machine Id

712048 Component Diesel Engine Fluid CHEVRON DELO 400 XLE 15W40 (9 GAL)

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.

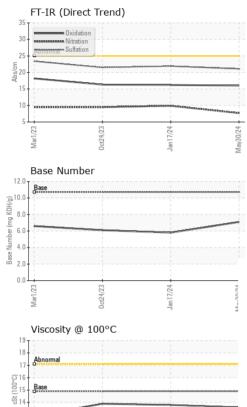
Fluid Condition

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

	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104696	GFL0096286	GFL0096248
Sample Date		Client Info		30 May 2024	17 Jan 2024	24 Oct 2023
Machine Age	hrs	Client Info		5044	4220	3594
Oil Age	hrs	Client Info		4220	3594	0
Oil Changed		Client Info		Not Changd	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
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	>100	4	10	9
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm		>4	0	<1	1
Titanium	ppm	ASTM D5185m		6	10	11
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	3
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	2	2
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		268	84	85
Barium	ppm	ASTM D5185m		0	0	0
	pp					
Molybdenum	ppm	ASTM D5185m		58	49	53
Molybdenum Manganese		ASTM D5185m ASTM D5185m		58 <1	49 <1	53 0
•	ppm					
Manganese	ppm ppm	ASTM D5185m		<1	<1	0
Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m	760	<1 493	<1 670	0 659
Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	760 830	<1 493 1506	<1 670 1510	0 659 1377
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		<1 493 1506 855	<1 670 1510 673	0 659 1377 700
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	830	<1 493 1506 855 985	<1 670 1510 673 808	0 659 1377 700 811
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	830 2770	<1 493 1506 855 985 3393 current 0	<1 670 1510 673 808 2874	0 659 1377 700 811 3243
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	830 2770 limit/base	<1 493 1506 855 985 3393 current	<1 670 1510 673 808 2874 history1	0 659 1377 700 811 3243 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 method ASTM D5185m	830 2770 limit/base >25	<1 493 1506 855 985 3393 current 0	<1 670 1510 673 808 2874 history1 4	0 659 1377 700 811 3243 history2 5
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	830 2770 limit/base >25	<1 493 1506 855 985 3393 <u>current</u> 0 2	<1 670 1510 673 808 2874 history1 4 3	0 659 1377 700 811 3243 history2 5 4
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	830 2770 limit/base >25 >20	<1 493 1506 855 985 3393 <u>current</u> 0 2 <1	<1 670 1510 673 808 2874 history1 4 3 1	0 659 1377 700 811 3243 history2 5 4 4
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	830 2770 limit/base >25 >20 limit/base	<1 493 1506 855 985 3393 current 0 2 <1 current	<1 670 1510 673 808 2874 history1 4 3 1 history1	0 659 1377 700 811 3243 history2 5 4 4 4 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	830 27770 imit/base >25 >20 imit/base >3	<1 493 1506 855 985 3393 current 0 2 <1 current 0.3	<1 670 1510 673 808 2874 history1 4 3 1 1 history1 0.6	0 659 1377 700 811 3243 history2 5 4 4 4 4 history2 0.5
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 D7844 *ASTM D7824 *ASTM D7624	830 27770 imit/base >25 >20 imit/base >3 >20	<1 493 1506 855 985 3393 current 0 2 <1 current 0.3 7.7	<1 670 1510 673 808 2874 history1 4 3 1 1 history1 0.6 9.9	0 659 1377 700 811 3243 history2 5 4 4 4 4 <u>history2</u> 0.5 9.5
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7824 *ASTM D7624	830 27770 imit/base >25 >20 imit/base >3 >20 >30	<1 493 1506 855 985 3393 current 0 2 <1 current 0.3 7.7 21.1	<1 670 1510 673 808 2874 history1 4 3 1 1 history1 0.6 9.9 21.9	0 659 1377 700 811 3243 history2 5 4 4 4 <u>history2</u> 0.5 9.5 21.5

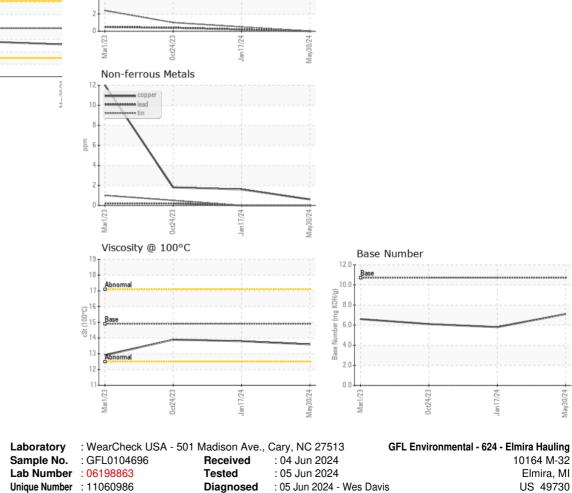


OIL ANALYSIS REPORT



Jan17/24

White Metalscalar*VisualNONENONENONENONENONEYellow Metalscalar*VisualNONENONENONENONENONEPrecipitatescalar*VisualNONENONENONENONENONESiltscalar*VisualNONENONENONENONENONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLDebrisscalar*VisualNORMLNORMLNORMLNORMLNORMLAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*Visual>0.2NEGNEGNEGNEGFree Waterscalar*Visual>0.2NEGNEGNEGVisc @ 100°CcStASTM D44514.913.613.813.9GRAPHS***********************************	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual >0.2 NEG NEG NEG Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys Image: State of the	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual >0.2 NEG NEG NEG Fere Water scalar *Visual >0.2 NEG NEG NEG Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Impediation impe	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual >0.2 NEG NEG NEG Fullid PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys Image: State of the state of t	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys Image: State St	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance scalar *Visual NORML NORM Image: Second	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys Ferrous Alloys Ferromage Ferromage	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Emulsified Water scalar *Visual >0.2 NEG NEG NEG Free Water scalar *Visual NEG NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys Image: Construct of the state of th	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Free Water scalar *Visual NEG NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Visc @ 100°C cSt ASTM D445 14.9 13.6 13.8 13.9 GRAPHS Ferrous Alloys	Free Water	scalar	*Visual		NEG	NEG	NEG
GRAPHS Ferrous Alloys	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Ferrous Alloys	Visc @ 100°C	cSt	ASTM D445	14.9	13.6	13.8	13.9
14 12 iron iron iron iron iron iron iron iron	GRAPHS						
12 - iron iron iron iron iron iron iron iron							
8	12 10						





13 **Abnorm**

Mar1/23

 Unique Number
 : 11060986
 Diagnosed
 : 05 Jun 2024 - Wes Davis

 Certificate 12367
 Test Package
 : FLEET
 Con

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 and

 * - 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)

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