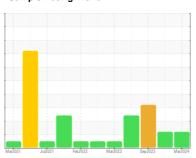


OIL ANALYSIS REPORT

Sample Rating Trend





728019-1146

Component

Diesel Engine

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

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels remain high. Test for glycol is negative.

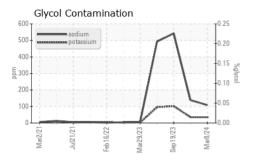
Fluid Condition

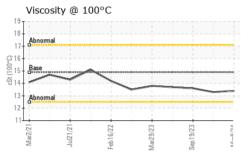
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

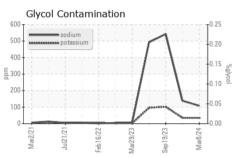
		Mar2021	Jul2021 Feb2022	Mar2023 Sep2023	Mar2024	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0104603	GFL0096260	GFL0055605
Sample Date		Client Info		08 Mar 2024	27 Nov 2023	19 Sep 2023
Machine Age	hrs	Client Info		16195	4176	4176
Oil Age	hrs	Client Info		0	482	578
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				ATTENTION	ATTENTION	ABNORMAL
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
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	71	41	4 90
Chromium	ppm	ASTM D5185m	>5	2	<1	3
Nickel	ppm	ASTM D5185m	>2	<1	0	2
Titanium	ppm	ASTM D5185m		6	5	3
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	22	13	18
Lead	ppm	ASTM D5185m	>30	0	0	1
Copper	ppm	ASTM D5185m	>150	6	6	20
Tin	ppm	ASTM D5185m	>5	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		90	129	19
Barium	ppm	ASTM D5185m		0	2	0
Molybdenum	ppm	ASTM D5185m		80	88	77
Manganese	ppm	ASTM D5185m		1	0	2
Magnesium		AOTA DELOE		644	F00	101
	ppm	ASTM D5185m		077	582	461
Calcium	ppm	ASTM D5185m ASTM D5185m		1602	1470	1936
Calcium Phosphorus			760			
	ppm	ASTM D5185m	760 830	1602	1470	1936
Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m		1602 801	1470 657	1936 717
Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	830	1602 801 930	1470 657 787	1936 717 929
Phosphorus Zinc Sulfur	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	830 2770	1602 801 930 3209	1470 657 787 2818	1936 717 929 3749
Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	830 2770 limit/base	1602 801 930 3209 current	1470 657 787 2818 history1	1936 717 929 3749 history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	830 2770 limit/base >20	1602 801 930 3209 current	1470 657 787 2818 history1	1936 717 929 3749 history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	830 2770 limit/base >20	1602 801 930 3209 current 12	1470 657 787 2818 history1 14	1936 717 929 3749 history2 19 543
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	830 2770 limit/base >20	1602 801 930 3209 current 12 108 35	1470 657 787 2818 history1 14 138 35	1936 717 929 3749 history2 19 △ 543 △ 102
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982	830 2770 limit/base >20 >20	1602 801 930 3209 current 12 108 35 NEG	1470 657 787 2818 history1 14 138 35 NEG	1936 717 929 3749 history2 19 △ 543 △ 102 NEG
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *METHOD *ASTM D5185m	830 2770 limit/base >20 >20	1602 801 930 3209 current 12 108 35 NEG	1470 657 787 2818 history1 14 138 35 NEG	1936 717 929 3749 history2 19 △ 543 △ 102 NEG history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D2982 Method *ASTM D7844	830 2770 limit/base >20 >20 limit/base >3	1602 801 930 3209 current 12 108 35 NEG current	1470 657 787 2818 history1 14 138 35 NEG history1	1936 717 929 3749 history2 19 △ 543 △ 102 NEG history2 1.2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D2982 Method *ASTM D7844 *ASTM D7624 *ASTM D76145	830 2770 limit/base >20 >20 limit/base >3 >20	1602 801 930 3209 current 12 108 35 NEG current 1	1470 657 787 2818 history1 14 138 35 NEG history1 0.7	1936 717 929 3749 history2 19 ▲ 543 ▲ 102 NEG history2 1.2 14.9
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D2982 Method *ASTM D7844 *ASTM D7624 *ASTM D76145	830 2770 limit/base >20 >20 limit/base >3 >20 >30	1602 801 930 3209 current 12 108 35 NEG current 1 15.3 27.4	1470 657 787 2818 history1 14 138 35 NEG history1 0.7 12.1 23.7	1936 717 929 3749 history2 19 ▲ 543 ▲ 102 NEG history2 1.2 14.9 26.3
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	830 2770 limit/base >20 >20 	1602 801 930 3209 current 12 108 35 NEG current 1 15.3 27.4	1470 657 787 2818 history1 14 138 35 NEG history1 0.7 12.1 23.7 history1	1936 717 929 3749 history2 19 ▲ 543 ▲ 102 NEG history2 1.2 14.9 26.3 history2



OIL ANALYSIS REPORT



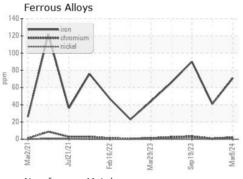


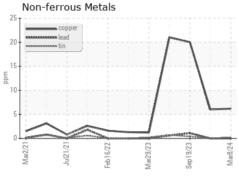


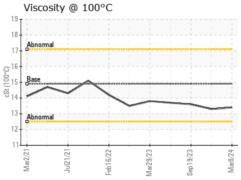
White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Precipitate scalar *Visual NONE NONE NONE NONE Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG	VISUAL		method	limit/base	current	history1	history2
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	White Metal	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 NORML NORML NORML NORML	Yellow Metal	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 NORML	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML NORML NORML NORML	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORML	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Odor scalar *Visual NORML NORML NORML NORML	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water scalar *Visual >0.2 NEG NEG NEG	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water scalar *Visual NEG NEG NEG	Free Water	scalar	*Visual		NEG	NEG	NEG

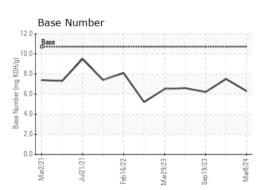
FLUID PROPE	ERTIES					
Visc @ 100°C	cSt	ASTM D445	14.9	13.4	13.3	13.6

GRAPHS













Laboratory Sample No. Lab Number : 06116381 Unique Number : 10925214

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0104603

Tested

Received : 12 Mar 2024 : 14 Mar 2024 Diagnosed

: 14 Mar 2024 - Jonathan Hester

GFL Environmental - 624 - Elmira Hauling

10164 M-32 Elmira, MI US 49730

Contact: ANDY GROBASKI andyg@americanwaste.org T: (989)370-2941

Test Package: FLEET (Additional Tests: Glycol) 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)

F: