

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

525027-964

Diesel Engine Fluid CHEVRON DELO 400 XLE 15W40 (--- 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.

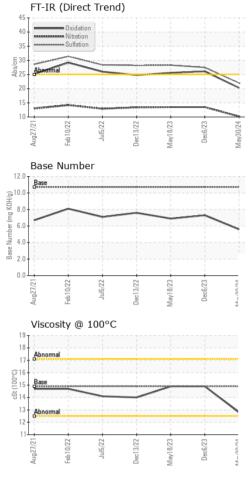
Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0110923	GFL0096108	GFL0073500
Sample Date		Client Info		30 May 2024	06 Dec 2023	18 May 2023
Machine Age	hrs	Client Info		18033	17397	16629
Oil Age	hrs	Client Info		636	768	457
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
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	21	21	22
Chromium	ppm	ASTM D5185m	>20	1	1	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		9	14	15
Silver	ppm	ASTM D5185m	>3	2	0	0
Aluminum	ppm	ASTM D5185m	>20	6	2	<1
Lead	ppm	ASTM D5185m	>40	0	5	9
Copper	ppm	ASTM D5185m	>330	2	<1	1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
	ppm				0	÷
ADDITIVES	ppm	method	limit/base	current	history1	history2
	ppm		limit/base		-	-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 281	history1 88	history2 85
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base	current 281 0	history1 88 0	history2 85 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 281 0 82	history1 88 0 54	history2 85 0 65 <1 903
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 281 0 82 <1	history1 88 0 54 <1	history2 85 0 65 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 281 0 82 <1 693	history1 88 0 54 <1 780	history2 85 0 65 <1 903
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		current 281 0 82 <1 693 1737	history1 88 0 54 <1 780 1941	history2 85 0 65 <1 903 2031
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	current 281 0 82 <1 693 1737 1175	history1 88 0 54 <1 780 1941 1000	history2 85 0 65 <1 903 2031 865
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830	current 281 0 82 <1 693 1737 1175 1342	history1 88 0 54 <1 780 1941 1000 1229	history2 85 0 65 <1 903 2031 865 1081
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base	Current 281 0 82 <1 693 1737 1175 1342 4380	history1 88 0 54 <1 780 1941 1000 1229 3471	history2 85 0 65 <1 903 2031 865 1081 3836
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base	current 281 0 82 <1 693 1737 1175 1342 4380 current	history1 88 0 54 <1 780 1941 1000 1229 3471 history1	history2 85 0 65 <1 903 2031 865 1081 3836 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830 2770 limit/base >25	current 281 0 82 <1 693 1737 1175 1342 4380 current 17	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	760 830 2770 limit/base >25	current 281 0 82 <1 693 1737 1175 1342 4380 current 17 5	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6 4	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	760 830 2770 limit/base >25 >20	current 281 0 82 <1 693 1737 1175 1342 4380 current 17 5 4	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6 4 3	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8 6 5
ADDITIVES 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	method ASTM D5185m	760 830 2770 limit/base >25 >20 limit/base >3	current 281 0 82 <1 693 1737 1175 1342 4380 current 17 5 4 current	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6 4 3 history1	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8 6 5 history2
ADDITIVES 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	method ASTM D5185m	760 830 2770 limit/base >25 >20 limit/base >3	current 281 0 82 <1 693 1737 1175 1342 4380 current 17 5 4 current 0.3	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6 4 3 history1 0.4	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8 6 5 history2 0.5
ADDITIVES 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 t t t t	method ASTM D5185m ASTM D5185m	760 830 2770 imit/base >25 >20 imit/base >3 >20	current 281 0 82 <1 693 1737 1175 1342 4380 current 17 5 4 current 0.3 10.2	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6 4 3 history1 0.4 13.5	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8 6 5 history2 0.5 13.5
ADDITIVES 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 t t t t	method ASTM D5185m ASTM D5185m	760 830 2770 Imit/base >25 >20 Imit/base >3 >20 >3 >20	current 281 0 82 <1 693 1737 1175 1342 4380 current 17 5 4 current 0.3 10.2 22.0	history1 88 0 54 <1 780 1941 1000 1229 3471 history1 6 4 3 history1 0.4 13.5 27.5	history2 85 0 65 <1 903 2031 865 1081 3836 history2 8 6 5 history2 0.5 13.5 28.3



OIL ANALYSIS REPORT



end)		VISUAL		method	limit/base	current	t ł	nistory1	h	istory	2
		White Metal	scalar	*Visual	NONE	NONE	NC	ONE	NC	DNE	
		Yellow Metal	scalar	*Visual	NONE	NONE	NC	ONE	NC	DNE	
		Precipitate	scalar	*Visual	NONE	NONE		ONE		DNE	
		Silt	scalar	*Visual	NONE	NONE	NO	ONE	NC	DNE	
		Debris	scalar	*Visual	NONE	NONE	NO	ONE	NC	DNE	
	A SHEW NO. & SHEW NO. & SHEW NO.	Sand/Dirt	scalar	*Visual	NONE	NONE	NC	ONE	NC	DNE	
Dec13/22	Dec6/23	Appearance	scalar	*Visual	NORML	NORML	NC	ORML	NC	ORML	
Dec13/22 May18/23	Dec6/2 May30/2	Odor	scalar	*Visual	NORML	NORML	NC	ORML	NC	ORML	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NE	EG	NE	G	
		Free Water	scalar	*Visual		NEG	NE	EG	NE	G	
		FLUID PROPE	RTIES	method	limit/base	current	t ł	nistory1	h	listory	2
		Visc @ 100°C	cSt	ASTM D445	14.9	12.8	14	.9	14	.9	
		GRAPHS									
		Ferrous Alloys									
Dec13/22	Dec6/23	35 30 25 10 5 0 12 10 5 0 12 10 5 0 12 12 10 12 12 12 10 15 10 12 12 12 12 12 12 12 12 12 12	Dec13/22	May18/23 Dec6/23 Dec6/23	lay30/24						
		Aug27/2 Aug27/2 Jul5/2: Jul5/2:		May	Mav	De la Nue	l				
		¹⁹			Base Nun		iber				
		18 - Abnormal			10.0	Base					
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		() 16 () 15 () 15 () 15 () 15 () 15 () 15 () 15 () 16 () 15 () 16 () 16			0.8 K0HK0 D.8 K0HK0 D.9 Langer (mg K0HK0)		~			>	
		E 15)					1
		12			N ase 4.0	•					
		Abnormal	1		2.0						
		11									
		Aug27/21 Feb10/22 - Jul5/22 -	Dec13/22 -	lay18/23 - Dec6/23 -		Aug27/21	Jul5/22 -	Dec13/22 -	8/23	Dec6/23 -	30/24
		Augí Feb1 Jul	Dec1	May18/23 Dec6/23	May30/24	Aug.	Jui	Dec1	May18/23	Dec	May30/24
Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report,		: 11059495 : FLEET , contact Customer Servi	Recei Teste Diagr	ived : 03 id : 04 nosed : 04 800-237-1369	3 Jun 2024 1 Jun 2024 Jun 2024 - Se 9.	Jun 2024 Jun 2024 un 2024 - Sean Felton		E Environmental - 629 - Northern A1 3947 US 131 N Kalkaska, MI US 49646-8428 Contact: MITCH HERSHBERGER T: (231)624-0848			
		are outside of the ISO 1 pecifications are based o				rule (JCGM	106:2012		. (231)t	524-08	548 F:

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Submitted By: Mitch Hershberger

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