

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 222013-531

Component Diesel 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 lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

		Mar202	3 Jul2023	Nov2023 Ja	m2024	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0096281	GFL0096277	GFL0064479
Sample Date		Client Info		26 Jan 2024	28 Nov 2023	24 Jul 2023
Machine Age	hrs	Client Info		2608	2519	463209
Oil Age	hrs	Client Info		208	0	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ATTENTION	ATTENTION	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	3 .4
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	>80	8	4	7
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		11	10	4
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	<1	1	2
Lead	ppm	ASTM D5185m	>30	<1	0	0
Copper	ppm	ASTM D5185m	>150	<1	0	<1
Tin	ppm	ASTM D5185m	>5	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	0.00	ASTM D5185m		159	167	210
Bereit	ррп					
Barium	ppm	ASTM D5185m		0	2	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 51	2 50	0 77
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 51 <1	2 50 0	0 77 0
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 51 <1 692	2 50 0 631	0 77 0 630
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 51 <1 692 1347	2 50 0 631 1374	0 77 0 630 1375
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760	0 51 <1 692 1347 674	2 50 0 631 1374 667	0 77 0 630 1375 653
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	760 830	0 51 <1 692 1347 674 823	2 50 0 631 1374 667 761	0 77 0 630 1375 653 835
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm 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	0 51 <1 692 1347 674 823 2889	2 50 0 631 1374 667 761 3030	0 77 0 630 1375 653 835 3060
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	760 830 2770 limit/base	0 51 <1 692 1347 674 823 2889 current	2 50 0 631 1374 667 761 3030 history1	0 77 0 630 1375 653 835 3060 history2
Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method	760 830 2770 Iimit/base >20	0 51 <1 692 1347 674 823 2889 current 6	2 50 0 631 1374 667 761 3030 history1 4	0 77 0 630 1375 653 835 3060 history2 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 limit/base >20	0 51 <1 692 1347 674 823 2889 current 6 0	2 50 0 631 1374 667 761 3030 history1 4 0	0 77 0 630 1375 653 835 3060 history2 4 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	760 830 2770 limit/base >20	0 51 <1 692 1347 674 823 2889 current 6 0 4	2 50 0 631 1374 667 761 3030 <u>history1</u> 4 0 3	0 77 0 630 1375 653 835 3060 history2 4 <1 2
Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 imit/base >20 imit/base	0 51 <1 692 1347 674 823 2889 current 6 0 4 x	2 50 0 631 1374 667 761 3030 history1 4 0 3 3	0 77 0 630 1375 653 835 3060 history2 4 <1 2 history2
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 imit/base >20 >20 imit/base >3	0 51 <1 692 1347 674 823 2889 current 6 0 4 current 0.2	2 50 0 631 1374 667 761 3030 history1 4 0 3 history1 0.2	0 77 0 630 1375 653 835 3060 history2 4 <1 2 history2 0.3
Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	760 830 2770 20 220 220 320 33 >20	0 51 <1 692 1347 674 823 2889 current 6 0 4 current 0.2 7.2	2 50 0 631 1374 667 761 3030 history1 4 0 3 <u>history1</u> 0.2 6.9	0 77 0 630 1375 653 835 3060 history2 4 <1 2 history2 0.3 7.2
Barium 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 >20 >20 imit/base >3 >20 imit/base >3 >20	0 51 <1 692 1347 674 823 2889 <u>current</u> 6 0 4 <u>current</u> 0.2 7.2 18.8	2 50 0 631 1374 667 761 3030 history1 4 0 3 <u>history1</u> 0.2 6.9 18.7	0 77 0 630 1375 653 835 3060 history2 4 <1 2 history2 0.3 7.2 20.5
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	760 830 2770 imit/base >20 220 imit/base >3 >20 >30 >30	0 51 <1 692 1347 674 823 2889 current 6 0 4 current 0.2 7.2 18.8 current	2 50 0 631 1374 667 761 3030 history1 4 0 3 history1 0.2 6.9 18.7 history1	0 77 0 630 1375 653 835 3060 history2 4 <1 2 history2 0.3 7.2 20.5 history2
Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	1000 1000 1000 1000 1000 1000 1000 100	0 51 <1 692 1347 674 823 2889 current 6 0 4 current 0.2 7.2 18.8 current 12.9	2 50 0 631 1374 667 761 3030 history1 4 0 3 history1 0.2 6.9 18.7 18.7 history1 12.9	0 777 0 630 1375 653 835 3060 history2 4 <1 2 history2 0.3 7.2 20.5 history2 14.2

Page 1 of 2



OIL ANALYSIS REPORT

VISUAL



	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
1	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
/24	Appearance	scalar	*Visual	NORMI	NORMI	NORMI	NORMI
Jan 26	Odor	scalar	*Visual	NORMI	NORMI	NORMI	NORMI
,	Emulaified Water	coalar	*Vieual	>0.2	NEG	NEG	NEG
		Scalar	*\/iouol	>0.2	NEG	NEG	NEG
	Free Water	scalar	visual		NEG	NEG	NEG
	FLUID PROF	PERTIES	method	limit/bas	e current	: history1	history2
	Visc @ 100°C	cSt	ASTM D44	5 14.9	12.2	▲ 12.0	▲ 11.7
	GRAPHS						
	Ferrous Alloys						
V C O	iron						
6	8 - nickel			1			
	6-		/				
	шdd						
	4-						
	2-						
	0 0	**********************	27	5			
	ar24/2 ul24/2		v28/2	n26/2			
	ν N N N N N N N N N N N N N N N N N N N		No	Ja			
	Non-ferrous Me	tals					
	copper						
	8 - Beauting tin						
	6						
	8 4-						
	2						
	0						
	4/23		8/23	6/24			
	Mar2		Nov2	Jan2			
	🔺 Viscosity @ 100	°C			Baso Num	hor	
	19				12.0		
	Abnormal				10.0		
	16			(B/H0			
	S 15 Base	0.0.0.0.0.0.0.0.0.0.0.		ng K	0.0		
	0 			ber (6.0		
	13 Abnormal			Nur	4.0		
	12-			Base			
	11-				2.0		
	10			+	0.0		
	r24/2		/28/2	126/2	r24/2	124/2	126/2
	Ma		No	Jai	Ma	'nr	No
orv	: WearCheck USA -	501 Madiso	n Ave Ca	rv. NC 2751	3 GFL	Environmental - 6	24 - Elmira Haulino
No.	: GFL0096281	Recei	i ved : ()2 Feb 2024			10164 M-32
nber	: 06078827	Teste	d :(06 Feb 2024			Elmira, M
ımber	: 10860918	Diagr	nosed :0	6 Feb 2024 - D	on Baldridge		US 49730
kage	: FLEET		-	Contact: A	NDY GROBASK		
report,	contact Customer Se	rvice at 1-8	800-237-136	69.		andyg@ai	mericanwaste.org
ods that	are outside of the ISC	17025 sco	pe of accre	editation.		106-0010	T: (989)370-294
iy to sp	ecifications are based	a on the sin	nple accept	ance decisio	on ruie (JCGM	106:2012)	F



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Submitted By: KEITH CAMPBELL