

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Area (36J4GJ) 225047-603258

Diesel Engine Fluid DIESEL ENGINE OIL SAE 15W40 (8 Shots)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

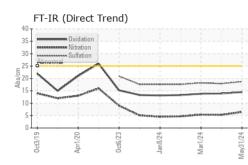
#### Fluid Condition

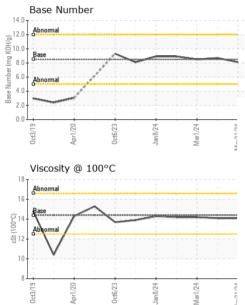
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112255	GFL0112225	GFL0098675
Sample Date		Client Info		31 May 2024	29 Mar 2024	01 Mar 2024
Machine Age	hrs	Client Info		1565	1286	1168
Oil Age	hrs	Client Info		150	600	600
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	15	6	9
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	1	2
Lead	ppm	ASTM D5185m	>40	- <1	0	0
Copper	ppm	ASTM D5185m		3	0	1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 250		history1 2	history2
	ppm ppm			current 0 0		
Boron Barium	ppm	ASTM D5185m	250 10	0	2	1
Boron	ppm ppm	ASTM D5185m ASTM D5185m	250	0 0	2 0	1 0
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	0 0 55	2 0 56	1 0 60
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	0 0 55 <1	2 0 56 <1	1 0 60 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	0 0 55 <1 914	2 0 56 <1 919	1 0 60 0 955
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	0 0 55 <1 914 1040	2 0 56 <1 919 1015	1 0 60 0 955 1006
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	0 0 55 <1 914 1040 1000	2 0 56 <1 919 1015 1010	1 0 60 0 955 1006 992
Boron 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	250 10 100 450 3000 1150 1350	0 0 55 <1 914 1040 1000 1198	2 0 56 <1 919 1015 1010 1212	1 0 60 0 955 1006 992 1219
Boron Barium Molybdenum 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 ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	0 0 55 <1 914 1040 1000 1198 3281	2 0 56 <1 919 1015 1010 1212 3396	1 0 60 955 1006 992 1219 2967
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250	0 0 555 <1 914 1040 1000 1198 3281 current	2 0 56 <1 919 1015 1010 1212 3396 history1	1 0 60 0 955 1006 992 1219 2967 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 <b>method</b>	250 10 100 450 3000 1150 1350 4250 <i>limit/base</i>	0 0 555 <1 914 1040 1000 1198 3281 current 2	2 0 56 <1 919 1015 1010 1212 3396 history1 5	1 0 60 0 955 1006 992 1219 2967 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158	0 0 55 <1 914 1040 1000 1198 3281 current 2 2 2	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1	1 0 60 955 1006 992 1219 2967 history2 8 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20	0 0 55 <1 914 1040 1000 1198 3281 current 2 2 2 2	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1 <1	1 0 60 0 955 1006 992 1219 2967 history2 8 2 2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 <b>Imit/base</b>	0 0 55 <1 914 1040 1000 1198 3281 current 2 2 2 2 2 2	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1 <1 <1 <1 history1	1 0 60 955 1006 992 1219 2967 history2 8 2 2 2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>Iimit/base</b> >25 >158 >20 <b>Iimit/base</b> >3 >20	0 0 55 <1 914 1040 1000 1198 3281 current 2 2 2 2 2 2 2	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1 <1 <1 <1 history1 0.1	1 0 60 955 1006 992 1219 2967 history2 8 2 2 2 history2 0.2
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 ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>Iimit/base</b> >25 >158 >20 <b>Iimit/base</b> >3 >20	0 0 55 <1 914 1040 1000 1198 3281 current 2 2 2 2 2 2 current 0.3 6.5	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1 <1 <1 <1 history1 0.1 5.3	1 0 60 0 955 1006 992 1219 2967 history2 8 2 2 2 history2 0.2 5.4
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 ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158 >20 <b>imit/base</b> >3 >20	0 0 55 <1 914 1040 1000 1198 3281 <u>current</u> 2 2 2 2 2 2 2 2 2 5 5 18.7	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1 <1 <1 <1 0.1 5.3 17.9	1 0 60 0 955 1006 992 1219 2967 <b>history2</b> 8 2 2 2 <b>history2</b> 0.2 5.4 18.2
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 ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 <b>binit/base</b> >25 >158 >20 <b>binit/base</b> >3 >20 >30	0 0 55 <1 914 1040 1000 1198 3281 <i>current</i> 2 2 2 2 2 <i>current</i> 0.3 6.5 18.7	2 0 56 <1 919 1015 1010 1212 3396 history1 5 <1 <1 <1 0.1 5.3 17.9 history1	1 0 60 0 955 1006 992 1219 2967 history2 8 2 2 2 history2 0.2 5.4 18.2 history2



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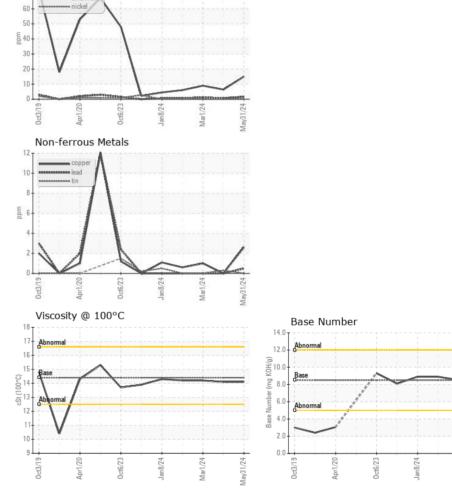


VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	14.1	14.1	14.2
GRAPHS						

Ferrous Alloys

80

70



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 829 - Wilco Hauling Sample No. : GFL0112255 Received : 04 Jun 2024 5054 Highway HH Lab Number : 06198781 Tested : 05 Jun 2024 Hartville, MO US 65667 Unique Number : 11060904 Diagnosed : 05 Jun 2024 - Wes Davis Test Package : FLEET Contact: James Jones Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. james.jones@gflenv.com T: (417)349-5006 \* - 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:

Report Id: GFL829 [WUSCAR] 06198781 (Generated: 06/05/2024 04:33:28) Rev: 1

Submitted By: Jerry Hazel

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