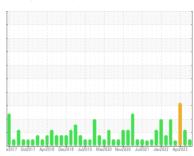


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 3743 Component Diesel Engine

DIESEL ENGINE OIL SAE 15W40 (11 GAL)

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

Test for glycol is negative. There is no indication of any contamination in the oil.

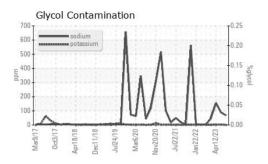
Fluid Condition

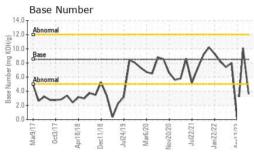
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

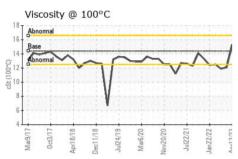
w2017 0x2017 Apr2018 0x2018 Jul2019 Mar2020 Nov2020 Jul2012 Apr2022 Apr2023						
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092500	GFL0074601	GFL0074574
Sample Date		Client Info		18 Aug 2023	10 May 2023	12 Apr 2023
Machine Age	hrs	Client Info		19526	19036	18732
Oil Age	hrs	Client Info		489	18732	541
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	63	31	▲ 78
Chromium	ppm	ASTM D5185m	>5	2	1	3
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	4	2	<1
Lead	ppm	ASTM D5185m	>25	0	0	<1
Copper	ppm	ASTM D5185m	>100	18	<1	5
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	12 12 122	ACTM DE10Em	250	2	8	6
DOTOTT	ppm	ASTM D5185m	230	_	0	O
Barium	ppm	ASTM D5165III	10	0	0	2
Barium	ppm	ASTM D5185m	10	0	0	2
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	10	0 63	0 74	2 73
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	10	0 63 1	0 74 <1	2 73 1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450	0 63 1 868	0 74 <1 906	2 73 1 829
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000	0 63 1 868 996	0 74 <1 906 1047	2 73 1 829 1039
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150	0 63 1 868 996 933	0 74 <1 906 1047 1010	2 73 1 829 1039 939
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	10 100 450 3000 1150 1350	0 63 1 868 996 933 1109	0 74 <1 906 1047 1010 1308	2 73 1 829 1039 939 1146
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 ASTM D5185m	10 100 450 3000 1150 1350 4250	0 63 1 868 996 933 1109 3085	0 74 <1 906 1047 1010 1308 4033	2 73 1 829 1039 939 1146 2779
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 ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25	0 63 1 868 996 933 1109 3085	0 74 <1 906 1047 1010 1308 4033 history1	2 73 1 829 1039 939 1146 2779
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158	0 63 1 868 996 933 1109 3085 current	0 74 <1 906 1047 1010 1308 4033 history1 6	2 73 1 829 1039 939 1146 2779 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158	0 63 1 868 996 933 1109 3085 current	0 74 <1 906 1047 1010 1308 4033 history1 6	2 73 1 829 1039 939 1146 2779 history2 11
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158	0 63 1 868 996 933 1109 3085 current 11 68	0 74 <1 906 1047 1010 1308 4033 history1 6 89 2	2 73 1 829 1039 939 1146 2779 history2 11 155 3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185m Method ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20	0 63 1 868 996 933 1109 3085 current 11 68 0	0 74 <1 906 1047 1010 1308 4033 history1 6 89 2 NEG	2 73 1 829 1039 939 1146 2779 history2 11 155 3 NEG
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D2982 *Method	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base	0 63 1 868 996 933 1109 3085 current 11 68 0 0.0	0 74 <1 906 1047 1010 1308 4033 history1 6 ▲ 89 2 NEG history1	2 73 1 829 1039 939 1146 2779 history2 11 155 3 NEG history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m **ASTM D5185m ASTM D5185m **ASTM D5185m ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D5185m **ASTM D7844	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >6 >20	0 63 1 868 996 933 1109 3085 current 11 68 0 0.0	0 74 <1 906 1047 1010 1308 4033 history1 6 89 2 NEG history1 2.4	2 73 1 829 1039 939 1146 2779 history2 11 155 3 NEG history2 4.8
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m *ASTM D7844 *ASTM D7844	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >6 >20	0 63 1 868 996 933 1109 3085 current 11 68 0 0.0 current 4.6 12.0	0 74 <1 906 1047 1010 1308 4033 history1 6 89 2 NEG history1 2.4 8.6	2 73 1 829 1039 939 1146 2779 history2 11 155 3 NEG history2 4.8 16.4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >6 >20 >30 limit/base	0 63 1 868 996 933 1109 3085 current 11 68 0 0.0 current 4.6 12.0 27.7	0 74 <1 906 1047 1010 1308 4033 history1 6 89 2 NEG history1 2.4 8.6 22.5 history1	2 73 1 829 1039 939 1146 2779 history2 11 155 3 NEG history2 4.8 16.4 30.2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145	10 100 450 3000 1150 1350 4250 limit/base >25 >158 >20 limit/base >6 >20 >30 limit/base >25	0 63 1 868 996 933 1109 3085 current 11 68 0 0.0 current 4.6 12.0 27.7	0 74 <1 906 1047 1010 1308 4033 history1 6 ▲ 89 2 NEG history1 2.4 8.6 22.5	2 73 1 829 1039 939 1146 2779 history2 11 155 3 NEG history2 4.8 16.4 30.2



OIL ANALYSIS REPORT



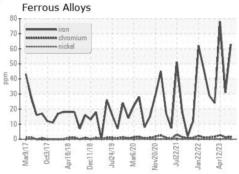


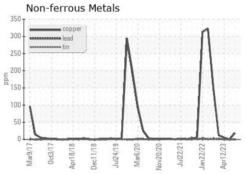


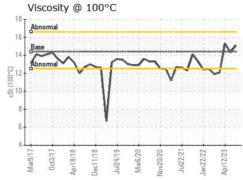
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

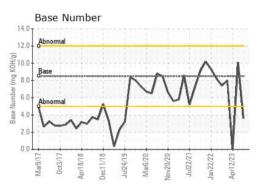
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	15.1	14.32	15.3

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number

Unique Number

: 10617181

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0092500 : 05931910

Received Diagnosed

: 24 Aug 2023 : Wes Davis Diagnostician

: 23 Aug 2023

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.

GFL Environmental - 095 - Atlanta West

2699 Cochran Industrial Blvd Douglasville, GA US 30127-1332 Contact: Darrell Welch darrell.welch@gflenv.com T: (800)207-6618

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)