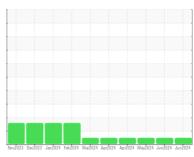


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 814023 Component

Component

Diesel Engine

DIESEL ENGINE OIL SAE 40 (--- 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

There is no indication of any contamination in the oil.

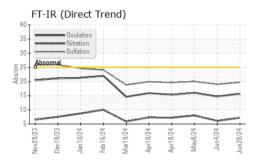
Fluid Condition

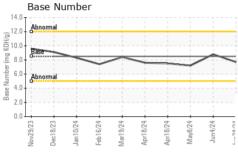
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

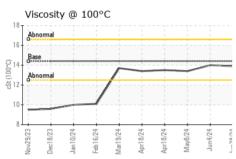
SAMPLE INFORMATION method imitibase current history1 GFL0112975 Sample Number Client Info 28 Jun 2024 04 Jun 2024 08 May 2044 08 May			Nov2023 Deci	023 Jan2024 Feb2024 Mar2	024 Apr2024 Apr2024 May2024 Jun2	024 Jun2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0122995	GFL0123014	GFL0119375
Oil Age hrs Client Info 161 168 91 Oil Changed			Client Info		28 Jun 2024	04 Jun 2024	08 May 2024
Oil Age hrs Client Info Changed Changed Changed Changed Changed Changed Changed Changed NORMAL Changed Changed Changed Changed Changed NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history? history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method Image: NEG NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM D5185m >100 8 5 18 Chromium ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >3 <1 0 <1 Chromium ppm ASTM D5185m >3 <1 0 <1 Lead ppm ASTM D5185m >30 28 27 224 Tin ppm ASTM D5185m		hrs	Client Info		1349	1188	1020
Sample Status MCRMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0		hrs	Client Info		161	168	91
Sample Status MCRMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 8 5 18 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol WC Method MEG NEG NEG	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	8	5	18
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Silver	Nickel	ppm	ASTM D5185m	>4	1	1	6
Aluminum ppm ASTM D5185m >20 1 <1	Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >40 0 <1	Silver	ppm	ASTM D5185m	>3	<1	0	1
Copper ppm ASTM D5185m >330 28 27 224 Tin ppm ASTM D5185m >15 0 0 2 Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 8 14 18 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 64 68 Manganese ppm ASTM D5185m 100 62 64 68 Manganesium ppm ASTM D5185m 100 999 1034 850 Calcium ppm ASTM D5185m 450 999 1034 850 Calcium ppm ASTM D5185m 1150 1032 1069 <t< th=""><th>Aluminum</th><th>ppm</th><th>ASTM D5185m</th><th>>20</th><th>1</th><th><1</th><th>2</th></t<>	Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Tin ppm ASTM D5185m >15 0 0 2 Vanadium ppm ASTM D5185m 0 <1	Lead	ppm	ASTM D5185m	>40	0	<1	<1
Vanadium ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>330	28	27	224
Cadmium ppm ASTM D5185m 0 0 <1	Tin	ppm	ASTM D5185m	>15	0	0	2
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron ppm ASTM D5185m 250 8 14 18 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 64 68 Manganese ppm ASTM D5185m 100 62 64 68 Magnesium ppm ASTM D5185m 100 999 1034 850 Calcium ppm ASTM D5185m 3000 1121 1143 1088 Phosphorus ppm ASTM D5185m 1350 1259 1313 1124 Sulfur ppm ASTM D5185m 4250 3376 3673 2827 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >20 <1	Cadmium	ppm	ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 64 68 Manganese ppm ASTM D5185m 100 999 1034 850 Calcium ppm ASTM D5185m 3000 1121 1143 1088 Phosphorus ppm ASTM D5185m 1150 1032 1069 897 Zinc ppm ASTM D5185m 1350 1259 1313 1124 Sulfur ppm ASTM D5185m 4250 3376 3673 2827 ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 62 64 68 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m	250	8	14	18
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m	10	0	0	0
Magnesium ppm ASTM D5185m 450 999 1034 850 Calcium ppm ASTM D5185m 3000 1121 1143 1088 Phosphorus ppm ASTM D5185m 1150 1032 1069 897 Zinc ppm ASTM D5185m 1350 1259 1313 1124 Sulfur ppm ASTM D5185m 4250 3376 3673 2827 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m	100	62	64	68
Calcium ppm ASTM D5185m 3000 1121 1143 1088 Phosphorus ppm ASTM D5185m 1150 1032 1069 897 Zinc ppm ASTM D5185m 1350 1259 1313 1124 Sulfur ppm ASTM D5185m 4250 3376 3673 2827 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION me	Manganese	ppm	ASTM D5185m		<1	<1	1
Phosphorus ppm ASTM D5185m 1150 1032 1069 897 Zinc ppm ASTM D5185m 1350 1259 1313 1124 Sulfur ppm ASTM D5185m 4250 3376 3673 2827 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Magnesium	ppm	ASTM D5185m	450	999	1034	850
Zinc ppm ASTM D5185m 1350 1259 1313 1124 Sulfur ppm ASTM D5185m 4250 3376 3673 2827 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >3 0.2 0.1 0.3 Nitration Abs/.1mm *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm<	Calcium	ppm	ASTM D5185m	3000	1121	1143	1088
Sulfur ppm ASTM D5185m 4250 3376 3673 2827 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Phosphorus	ppm	ASTM D5185m	1150	1032	1069	897
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1 1 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Zinc	ppm	ASTM D5185m	1350	1259	1313	1124
Silicon ppm ASTM D5185m >25 6 4 11 Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1	Sulfur	ppm	ASTM D5185m	4250	3376	3673	2827
Sodium ppm ASTM D5185m >216 3 2 2 Potassium ppm ASTM D5185m >20 <1	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>25	6	4	11
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Sodium	ppm	ASTM D5185m	>216	3	2	2
Soot % % *ASTM D7844 >3 0.2 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Potassium	ppm	ASTM D5185m	>20	<1	1	4
Nitration Abs/cm *ASTM D7624 >20 7.2 6.1 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.7 19.0 20.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Soot %	%	*ASTM D7844	>3	0.2	0.1	0.3
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Nitration	Abs/cm	*ASTM D7624	>20	7.2	6.1	8.0
Oxidation Abs/.1mm *ASTM D7414 >25 15.7 14.7 16.0	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.7	19.0	20.0
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 7.7 8.8 7.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7	14.7	16.0
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.7	8.8	7.2



OIL ANALYSIS REPORT



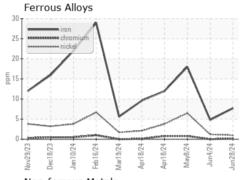


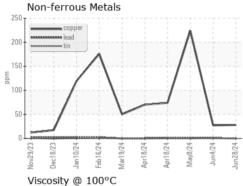


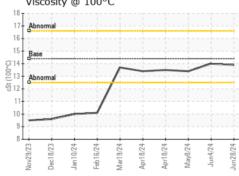
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

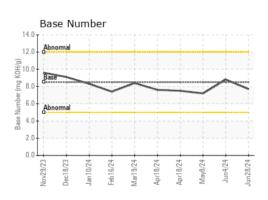
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	14.4	13.9	14.0	13.4	

GRAPHS













Laboratory Sample No.

Lab Number : 06229455 Unique Number : 11112948

: GFL0122995

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 05 Jul 2024

Tested : 09 Jul 2024 Diagnosed : 09 Jul 2024 - Wes Davis

GFL Environmental - 814 - Little Rock Hauling

4005 Hwy 161 N. Little Rock, AR US 72117

Contact: Brad Koenig bkoenig@gflenv.com T:

Test Package : FLEET Certificate 12367 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)

Report Id: GFL814 [WUSCAR] 06229455 (Generated: 07/09/2024 08:36:22) Rev: 1

Submitted By: Nicole Walls

F: