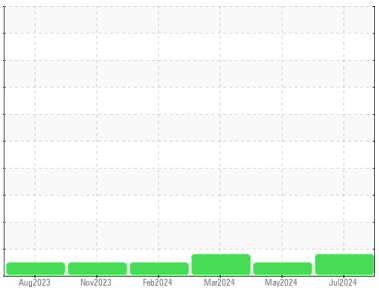
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
829097 PETERBILT 320
Component
Diesel Engine
Fluid
TIER 1 15W40 (--- GAL)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Wear
All component wear rates are normal.

Contamination
Light fuel dilution occurring. No other contaminants were detected 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	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0115227**	GFL0115300	GFL0061430
Sample Date		Client Info		**08 Jul 2024**	20 May 2024	27 Mar 2024
Machine Age	hrs	Client Info		**18307**	18150	17931
Oil Age	hrs	Client Info		**65**	0	13
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**MARGINAL**	NORMAL	MARGINAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	**8**	6	8
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**<1**	2	3
Lead	ppm	ASTM D5185m	>45	**<1**	1	3
Copper	ppm	ASTM D5185m	>85	**1**	2	2
Tin	ppm	ASTM D5185m	>4	**0**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**10**	16	11
Barium	ppm	ASTM D5185m		**0**	<1	<1
Molybdenum	ppm	ASTM D5185m		**54**	70	54
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**903**	1099	804
Calcium	ppm	ASTM D5185m		**1186**	1379	1061
Phosphorus	ppm	ASTM D5185m		**1039**	1406	956
Zinc	ppm	ASTM D5185m		**1271**	1595	1125
Sulfur	ppm	ASTM D5185m		**3687**	4653	2977

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	**4**	4	4
Sodium	ppm	ASTM D5185m		**3**	3	3
Potassium	ppm	ASTM D5185m	>20	**2**	2	2
Fuel	%	ASTM D3524	>5	▲ **3.3**	<1.0	▲ 4.7

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.3**	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**7.1**	7.6	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.1**	19.5	19.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.0**	14.9	15.6
Base Number (BN)	mg KOH/g	ASTM D2896		**8.4**	8.0	8.5

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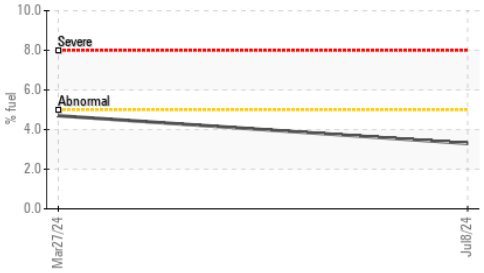
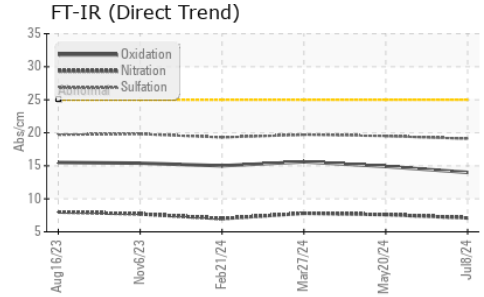
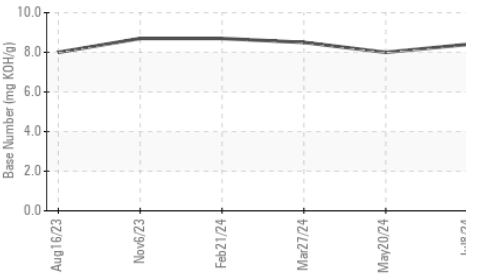
Fuel Dilution



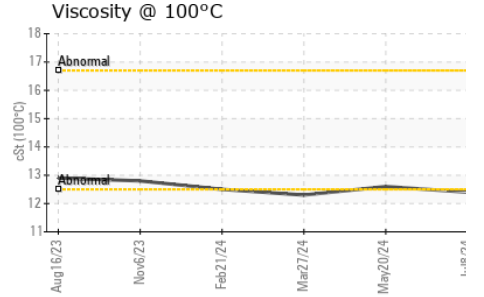
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

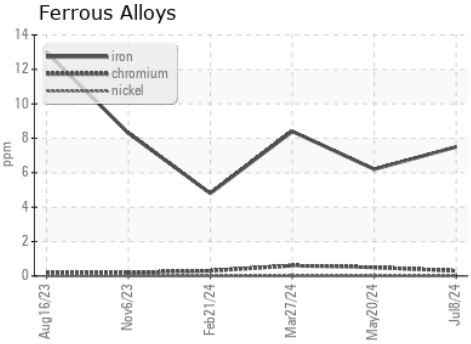


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

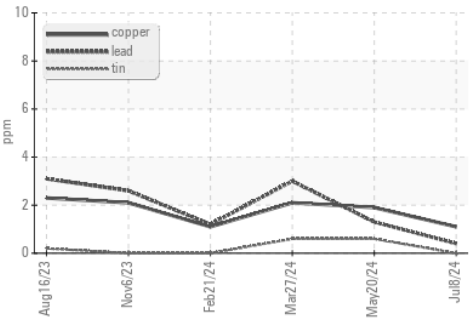
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**12.4**	12.6	12.3

GRAPHS

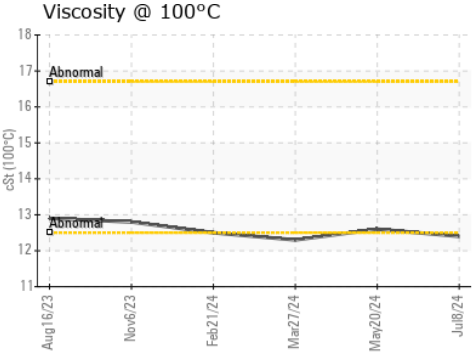
Ferrous Alloys



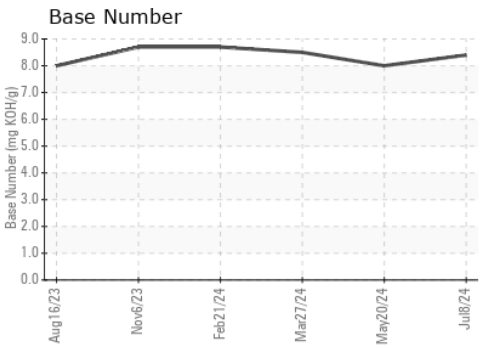
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0115227
Lab Number : 06234331
Unique Number : 11123165
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 11 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - Wes Davis

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)

GFL Environmental - 642- Grand Rapids Hauling
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T:
F:

Report Id: GFL642 [WUSCAR] 06234331 (Generated: 07/16/2024 08:53:31) Rev: 1

Submitted By: See also GFL642B - Jessica Shearer