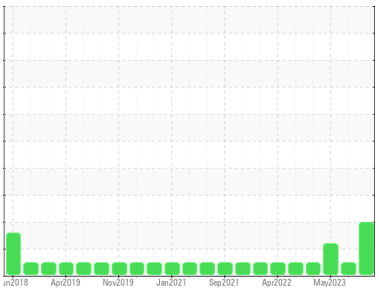
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
VOLVO 26596
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- QTS)

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 BN level is low. The oil is no longer serviceable.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0114783**	PCA0106357	PCA0092431
Sample Date		Client Info		**17 Mar 2024**	14 Nov 2023	01 May 2023
Machine Age	mls	Client Info		**495334**	462980	0
Oil Age	mls	Client Info		**30000**	15000	20000
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	**<1.0**	<1.0	<1.0
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	>100	▲ **119**	49	68
Chromium	ppm	ASTM D5185m	>20	**2**	1	2
Nickel	ppm	ASTM D5185m	>2	**0**	2	2
Titanium	ppm	ASTM D5185m		**2**	2	7
Silver	ppm	ASTM D5185m	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	**1**	1	0
Lead	ppm	ASTM D5185m	>40	**5**	5	9
Copper	ppm	ASTM D5185m	>330	**6**	6	8
Tin	ppm	ASTM D5185m	>15	**2**	1	2
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**2**	0	2
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	50	**60**	55	54
Manganese	ppm	ASTM D5185m	0	**1**	<1	1
Magnesium	ppm	ASTM D5185m	950	**917**	838	892
Calcium	ppm	ASTM D5185m	1050	**1145**	1085	1124
Phosphorus	ppm	ASTM D5185m	995	**1013**	903	947
Zinc	ppm	ASTM D5185m	1180	**1239**	1080	1234
Sulfur	ppm	ASTM D5185m	2600	**2425**	2141	2801

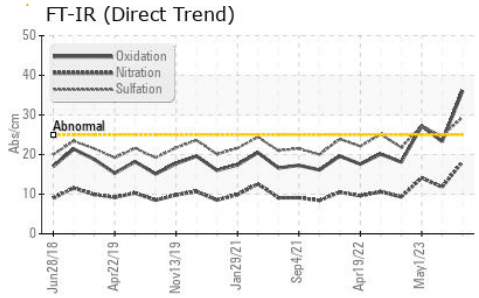
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**7**	5	7
Sodium	ppm	ASTM D5185m		**33**	16	31
Potassium	ppm	ASTM D5185m	>20	**3**	0	4

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	0.7	0.8
Nitration	Abs/cm	*ASTM D7624	>20	**18.2**	11.8	14.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**29.4**	24.7	27.1

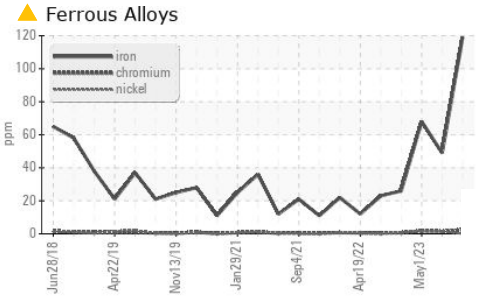
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**36.1**	23.3	27.2
Base Number (BN)	mg KOH/g	ASTM D2896		▲ **0.7**	3.7	▲ 2.5

OIL ANALYSIS REPORT

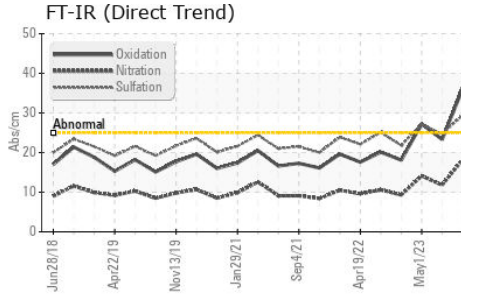
FT-IR (Direct Trend)



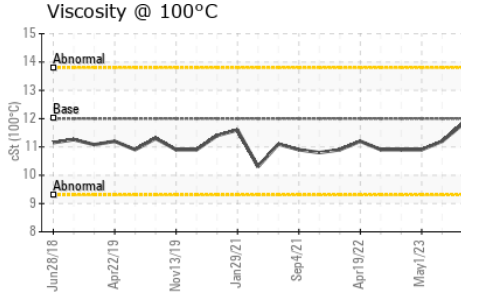
Ferrous Alloys



FT-IR (Direct Trend)



Viscosity @ 100°C

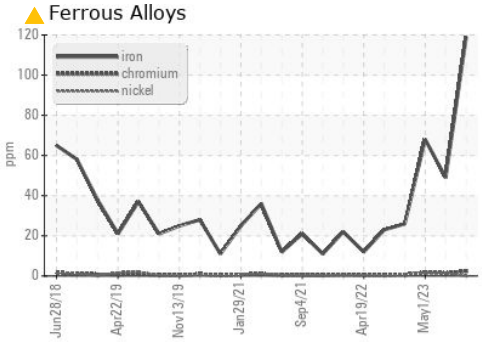


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

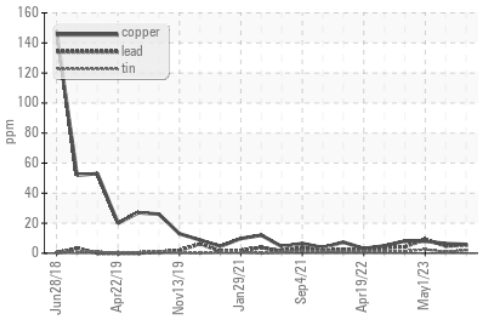
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**11.8**	11.2	10.9

GRAPHS

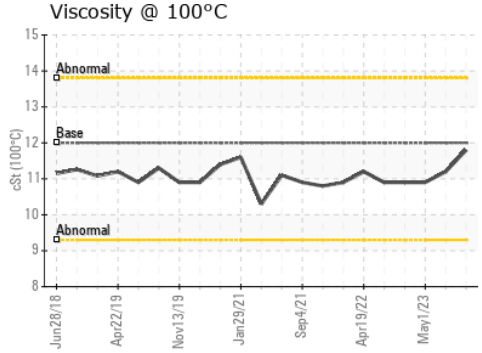
Ferrous Alloys



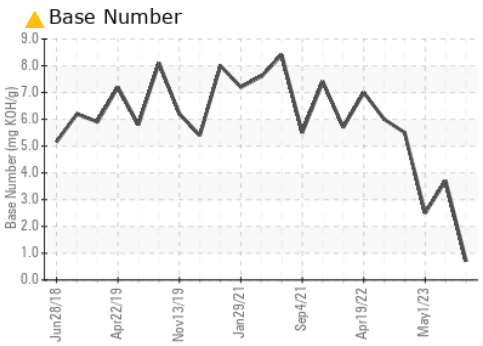
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0114783
Lab Number : 06143840
Unique Number : 10968648
Test Package : FLEET

Received : 10 Apr 2024
Tested : 11 Apr 2024
Diagnosed : 12 Apr 2024 - Angela Borella

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)

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