



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
609002 CATERPILLAR C-15
Component
Diesel Engine
Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0783577	WC0653594	WC81251003
Sample Date		Client Info		13 May 2024	17 Sep 2022	17 Mar 2021
Machine Age	hrs	Client Info		13774	13094	11395
Oil Age	hrs	Client Info		500	250	---
Filter Age	hrs	Client Info		500	250	---
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	18	13	15
Chromium	ppm	ASTM D5185m	>6	<1	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	2	2	2
Lead	ppm	ASTM D5185m	>10	2	2	1
Copper	ppm	ASTM D5185m	>150	4	3	3
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

There is no indication of any contamination in the oil.

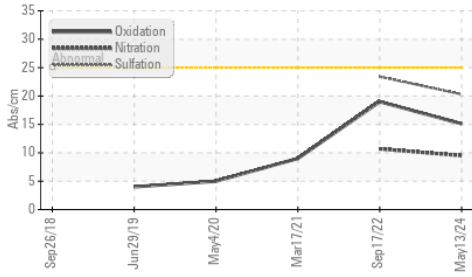
Silicon	ppm	ASTM D5185m	>20	6	6	▲ 23
Potassium	ppm	ASTM D5185m	>20	8	2	0
Chlorine	ppm	ASTM D5185m		---	---	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
Soot %	%	*ASTM D7844	>3	0.4	0.6	0.73
Nitration	Abs/cm	*ASTM D7624	>20	9.5	10.7	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	23.4	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

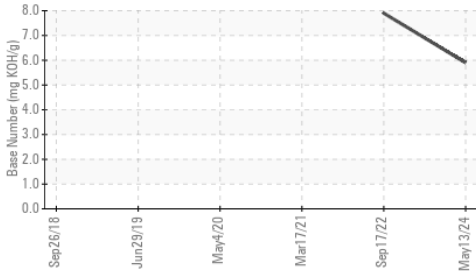
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>150	5	2	3
Boron	ppm	ASTM D5185m		26	27	38
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		61	82	36
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		62	164	492
Calcium	ppm	ASTM D5185m		2231	2045	1489
Phosphorus	ppm	ASTM D5185m		1014	1026	737
Zinc	ppm	ASTM D5185m		1183	1226	781
Sulfur	ppm	ASTM D5185m		4621	4209	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.1	19.0	9
Base Number (BN)	mg KOH/g	ASTM D2896		5.9	7.9	---
Visc @ 100°C	cSt	ASTM D445		13.2	13.8	12.8

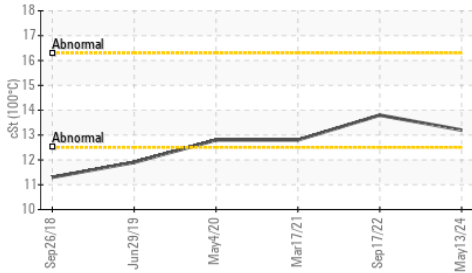
FT-IR (Direct Trend)



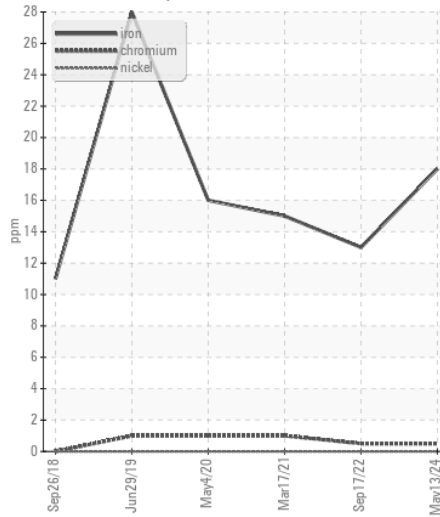
Base Number



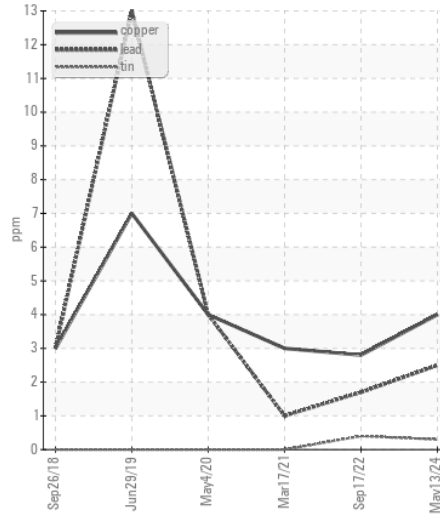
Viscosity @ 100°C



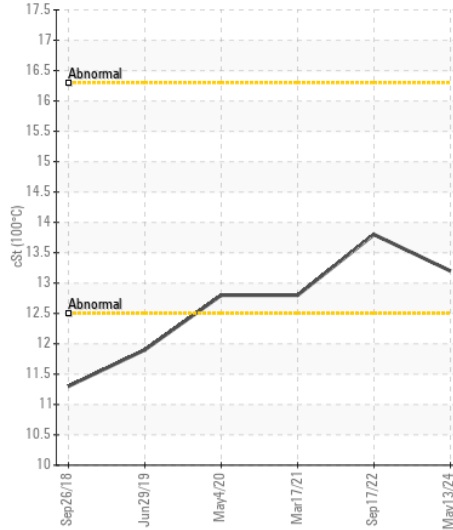
Ferrous Alloys



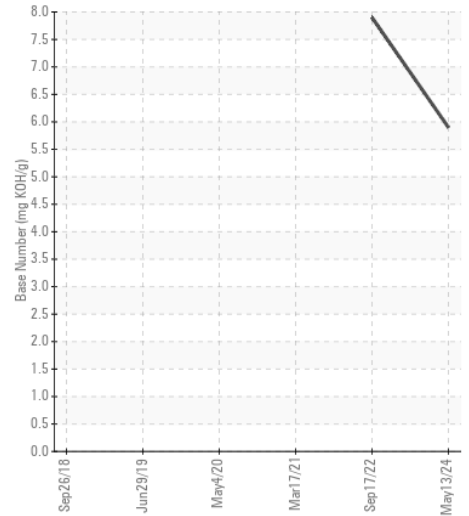
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0783577
Lab Number : 06191576
Unique Number : 11048328
Test Package : FLEET
Received : 24 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - Angela Borella

TRI-CITY HIGHWAY
 145 PODPADIC ROAD
 RICHMONDVILLE, NY
 US 12149
 Contact: DAN CORBETT
 dcorbett@tchpi.com

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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F: