



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
INTERNATIONAL 3227
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 10W30 (40 QTS)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0916503	WC0878528	WC0854028
Sample Date		Client Info		08 Jun 2024	14 Dec 2023	08 Sep 2023
Machine Age	mls	Client Info		375790	494130	474269
Oil Age	mls	Client Info		19851	24130	23454
Filter Age	mls	Client Info		19851	24130	23454
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	9	12	28
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	1	3
Lead	ppm	ASTM D5185m	>50	1	2	8
Copper	ppm	ASTM D5185m	>55	<1	1	1
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

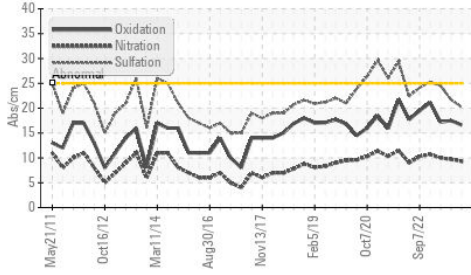
Silicon	ppm	ASTM D5185m	>15	3	4	6
Potassium	ppm	ASTM D5185m	>20	2	1	5
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.2	0.4	0.5
Nitration	Abs/cm	*ASTM D7624	>20	9.3	9.7	10.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.2	21.7	24.5
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

FLUID CONDITION

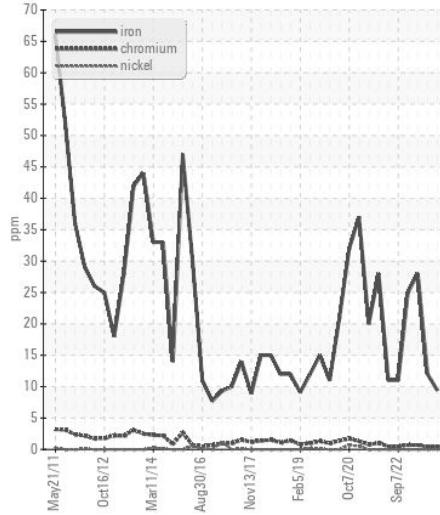
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		1	4	3
Boron	ppm	ASTM D5185m	250	0	3	8
Barium	ppm	ASTM D5185m	10	0	<1	0
Molybdenum	ppm	ASTM D5185m	100	60	57	31
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	1038	853	186
Calcium	ppm	ASTM D5185m	3000	1162	1353	2470
Phosphorus	ppm	ASTM D5185m	1150	1056	1129	1057
Zinc	ppm	ASTM D5185m	1350	1343	1311	1335
Sulfur	ppm	ASTM D5185m	4250	3640	3134	4502
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.6	17.5	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.7	7.7	5.0
Visc @ 100°C	cSt	ASTM D445	10.9	11.1	11.5	13.5

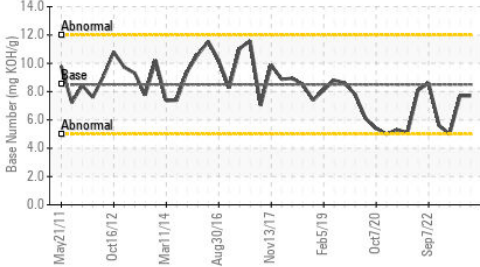
FT-IR (Direct Trend)



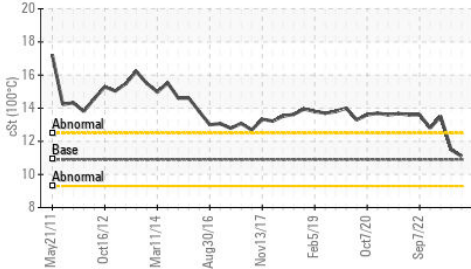
Ferrous Alloys



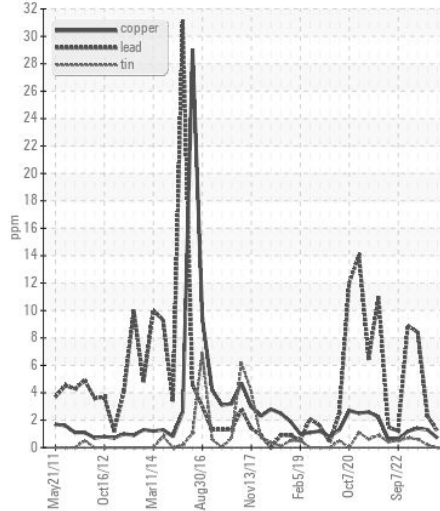
Base Number



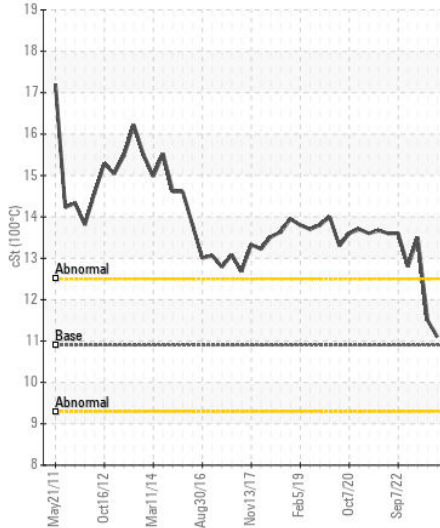
Viscosity @ 100°C



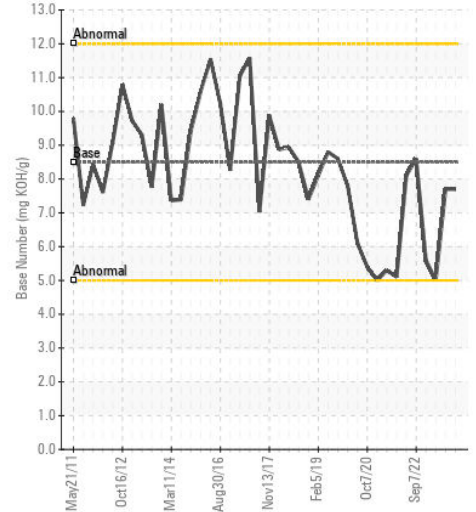
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0916503

Lab Number : 06219182

Unique Number : 11097379

Test Package : FLEET

Received : 24 Jun 2024

Tested : 25 Jun 2024

Diagnosed : 25 Jun 2024 - Wes Davis

CARCO TRANSPORTATION

3403 EAST ROOSEVELT ROAD

LITTLE ROCK, AR

US 72206

Contact: DENNIS CATES

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T: (800)967-0777

F:

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)