CONST

WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
22702
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL 10W40 (--- GAL)

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

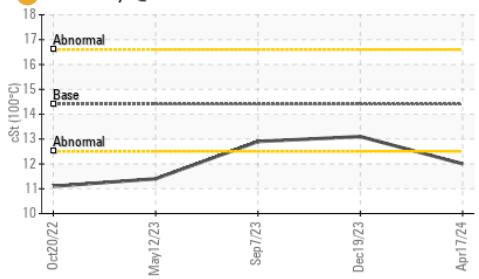
Fuel content negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

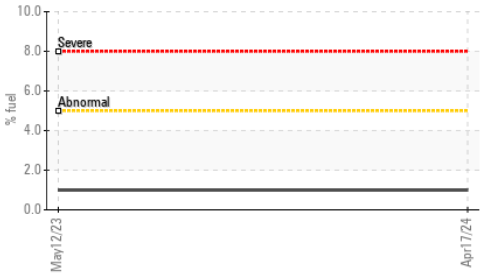
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0924553	WC0846623	WC0810010
Sample Date		Client Info		17 Apr 2024	19 Dec 2023	07 Sep 2023
Machine Age	hrs	Client Info		2519	20355	1548
Oil Age	hrs	Client Info		500	250	1250
Filter Age	hrs	Client Info		500	250	1250
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	6	4	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	1	1	<1
Lead	ppm	ASTM D5185m	>40	0	0	2
Copper	ppm	ASTM D5185m	>330	6	7	58
Tin	ppm	ASTM D5185m	>15	<1	0	1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	8	8	9
Potassium	ppm	ASTM D5185m	>20	<1	<1	2
Fuel	%	ASTM D3524	>5	1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	12.1	8.6	12.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	19.4	18.0
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
Sodium	ppm	ASTM D5185m		3	4	3
Boron	ppm	ASTM D5185m	250	110	219	251
Barium	ppm	ASTM D5185m	10	2	<1	0
Molybdenum	ppm	ASTM D5185m	100	39	17	5
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	450	825	602	124
Calcium	ppm	ASTM D5185m	3000	1370	1774	4376
Phosphorus	ppm	ASTM D5185m	1150	685	905	1071
Zinc	ppm	ASTM D5185m	1350	857	1016	1273
Sulfur	ppm	ASTM D5185m	4250	2939	3481	3623
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.4	17.1	13.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.7	7.5	13.4
Visc @ 100°C	cSt	ASTM D445	14.4	12.0	13.1	12.9

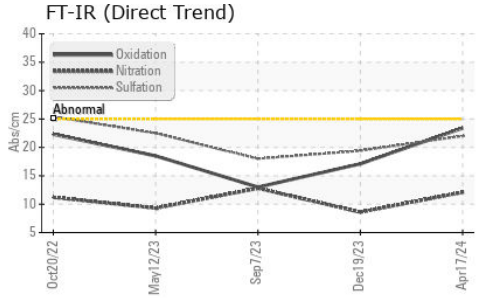
Viscosity @ 100°C



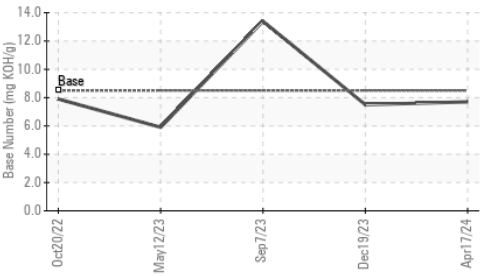
Fuel Dilution



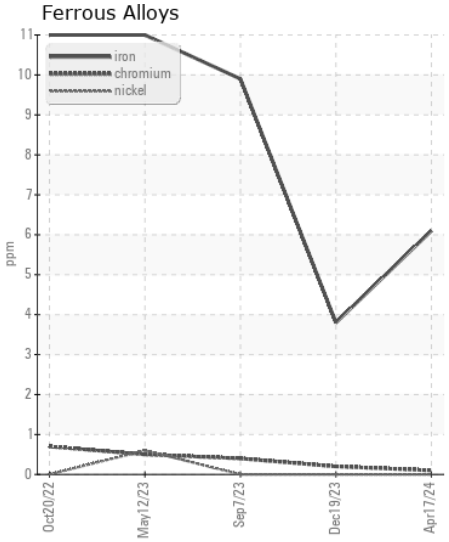
FT-IR (Direct Trend)



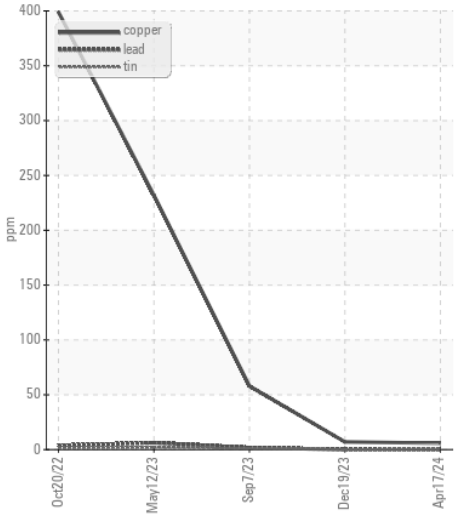
Base Number



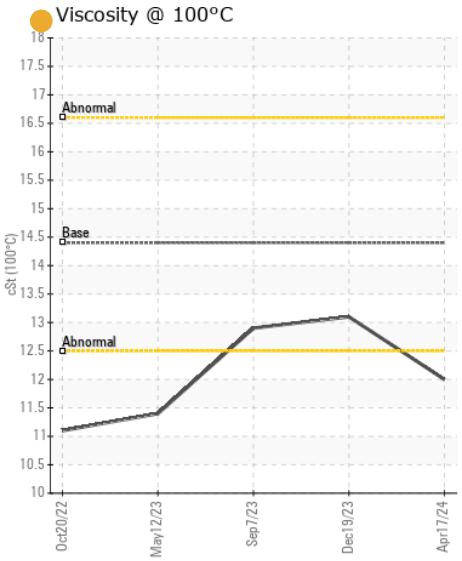
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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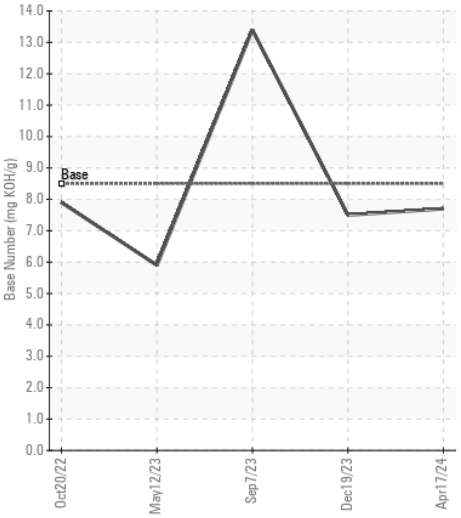

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0924553
Lab Number : 06155597
Unique Number : 10991020
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

Received : 22 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Don Baldridge

SULLIVAN EASTERN INC-LIEBHERR
2860 C SLATER RD
MORRISVILLE, NC
US 27560
Contact: CHRIS CALTON

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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