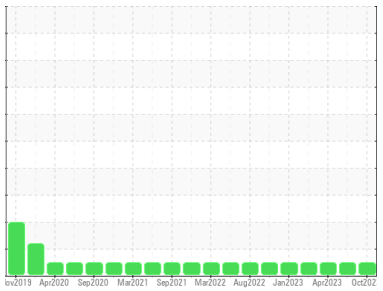
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
INTERNATIONAL 5012891
Component
Diesel Engine
Fluid
VALVOLINE 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		**IL0033233**	IL05911765	IL05840484
Sample Date		Client Info		**10 Oct 2023**	17 Jul 2023	22 Apr 2023
Machine Age	mls	Client Info		**279942**	265122	246610
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	N/A	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

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	>100	**19**	17	15
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**11**	4	3
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**1**	<1	<1
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	39	**45**	42	56
Barium	ppm	ASTM D5185m	1	**0**	0	0
Molybdenum	ppm	ASTM D5185m	49	**74**	78	68
Manganese	ppm	ASTM D5185m	1	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	616	**648**	603	722
Calcium	ppm	ASTM D5185m	1554	**1300**	1330	1382
Phosphorus	ppm	ASTM D5185m	899	**766**	759	801
Zinc	ppm	ASTM D5185m	1069	**984**	1006	1036
Sulfur	ppm	ASTM D5185m	2624	**2362**	2518	2728

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**7**	5	4
Sodium	ppm	ASTM D5185m		**2**	2	3
Potassium	ppm	ASTM D5185m	>20	**4**	5	4
Fuel	%	ASTM D3524	>5	**1.7**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**12.4**	11.3	10.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.7**	23.4	20.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**21.2**	20.9	19.4
Base Number (BN)	mg KOH/g	ASTM D2896	6.9	**7.1**	5.7	5.5

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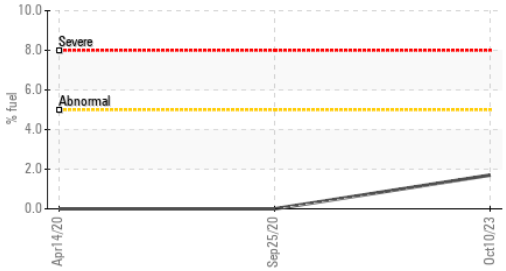
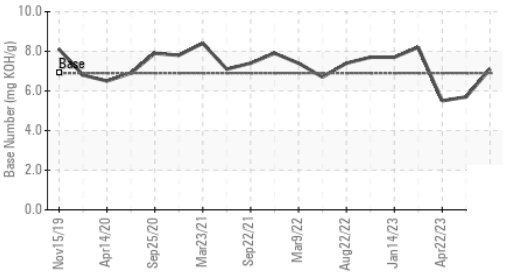
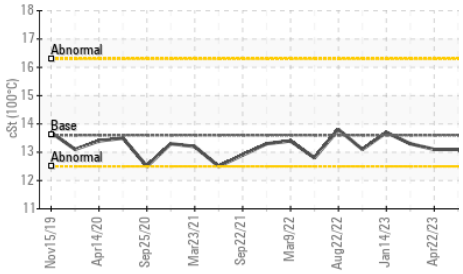
Fuel Dilution



Base Number



Viscosity @ 100°C

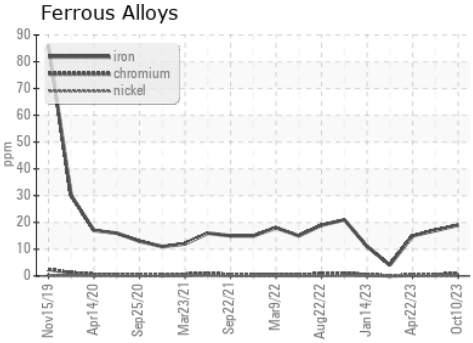


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

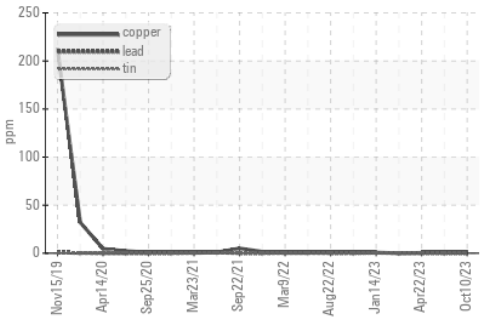
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.6	**12.4**	13.1	13.1

GRAPHS

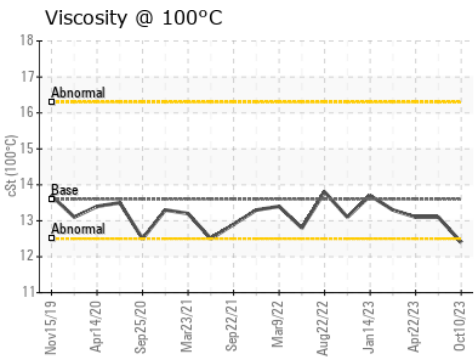
Ferrous Alloys



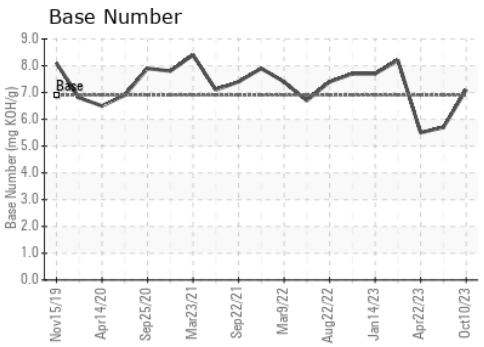
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : IL0033233 **Received** : 20 Nov 2023
Lab Number : 06013014 **Diagnosed** : 24 Nov 2023
Unique Number : 10752158 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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