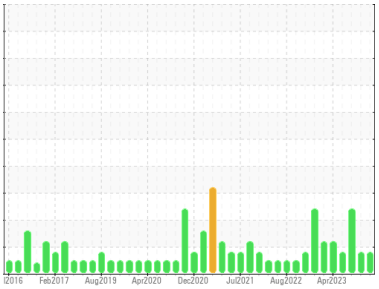
OIL ANALYSIS REPORT

Area
[1486116]
Machine Id
NEW FLYER 0923
Component
Diesel Engine
Fluid
SAFETY-KLEEN PERFORMANCE PLUS XHD-7 15W40 (--- GAL)

Sample Rating Trend



FUEL

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0849853**	WC0830186	WC0811472
Sample Date		Client Info		**24 Aug 2023**	10 Jul 2023	04 Jun 2023
Machine Age	kms	Client Info		**382081**	372228	364750
Oil Age	kms	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>75	**49**	33	20
Chromium	ppm	ASTM D5185(m)	>5	**2**	1	<1
Nickel	ppm	ASTM D5185(m)	>4	**0**	0	0
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>15	**3**	4	4
Lead	ppm	ASTM D5185(m)	>25	**<1**	<1	0
Copper	ppm	ASTM D5185(m)	>100	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>4	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**<1**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

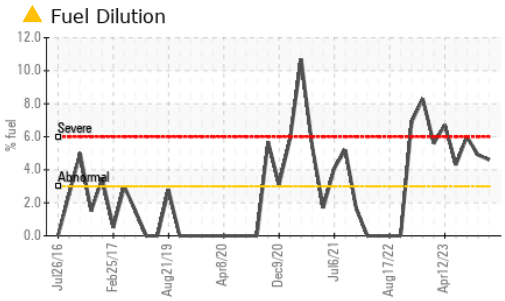
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**1**	1	<1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**61**	59	60
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**981**	978	938
Calcium	ppm	ASTM D5185(m)		**1028**	1021	1019
Phosphorus	ppm	ASTM D5185(m)		**1030**	1038	1046
Zinc	ppm	ASTM D5185(m)		**1189**	1187	1143
Sulfur	ppm	ASTM D5185(m)		**2395**	2433	2439
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

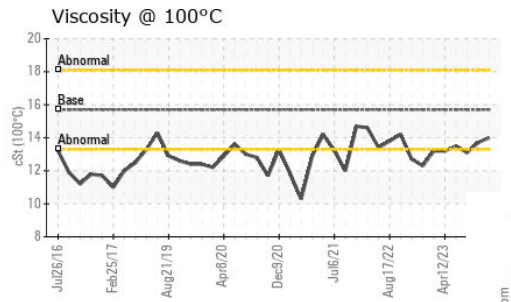
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**5**	5	3
Sodium	ppm	ASTM D5185(m)		**9**	9	5
Potassium	ppm	ASTM D5185(m)	>20	**6**	7	4
Fuel	%	ASTM D7593*	>3.0	▲ **4.6**	▲ 4.9	⬢ 6

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**1.5**	0.9	0.6
Nitration	Abs/cm	ASTM D7624*	>20	**14.7**	12.7	10.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	**30.8**	26.6	23.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**31.5**	27.7	23.7

OIL ANALYSIS REPORT

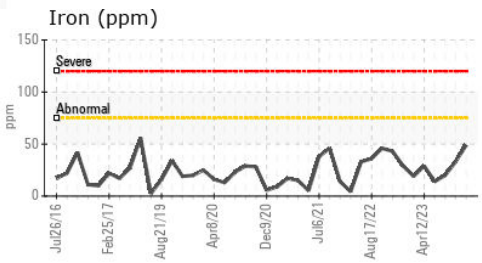


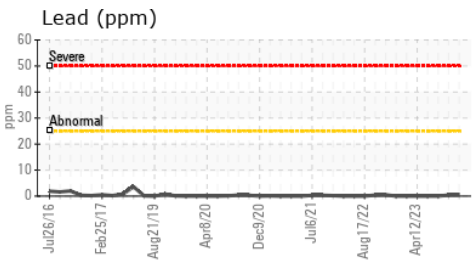


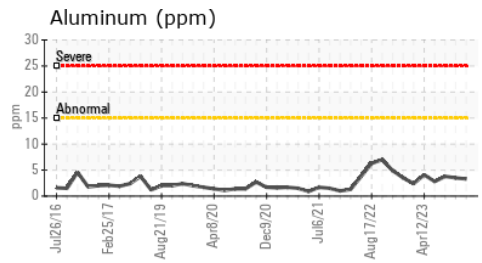
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar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

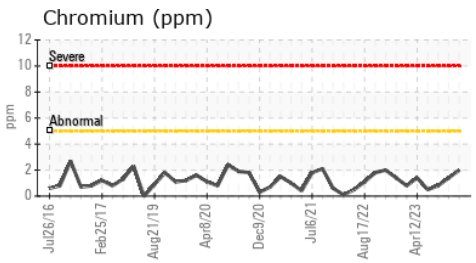
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	**14.0**	13.7	▲ 13.1

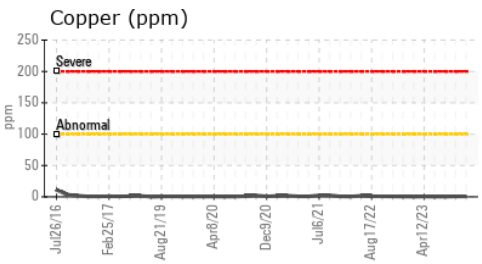
GRAPHS

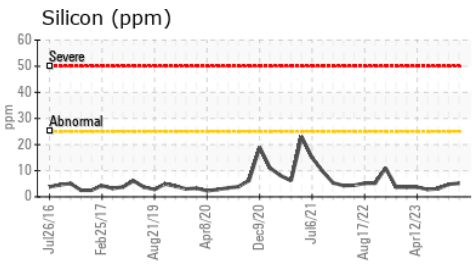


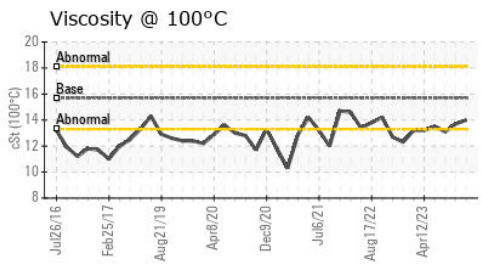


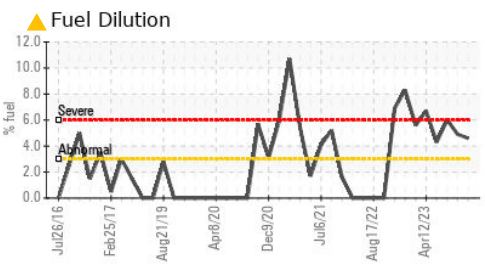












ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0849853 **Received** : 29 Aug 2023
Lab Number : 02578964 **Diagnosed** : 30 Aug 2023
Unique Number : 5632024 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: PercentFuel, Visual)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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