



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
MORBARK 6600 TG-5 (S/N 186-1132)

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0196442	JR0173376	JR0160813
Sample Date		Client Info		13 Mar 2024	27 Oct 2023	23 Jun 2023
Machine Age	hrs	Client Info		10086	9744	9515
Oil Age	hrs	Client Info		342	229	248
Filter Age	hrs	Client Info		342	229	248
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	29	19	20
Chromium	ppm	ASTM D5185m	>20	<1	3	3
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	3	2
Lead	ppm	ASTM D5185m	>40	2	0	<1
Copper	ppm	ASTM D5185m	>330	33	29	31
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

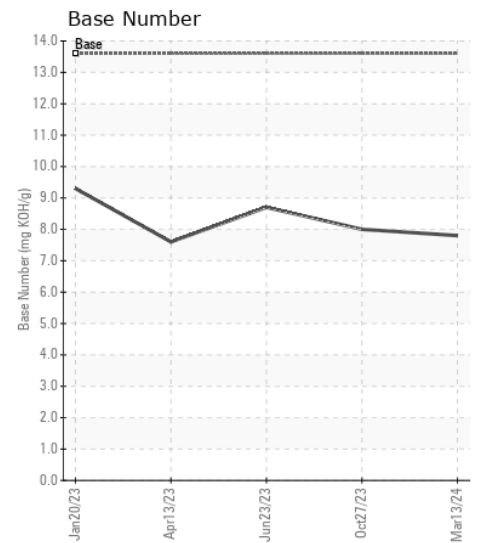
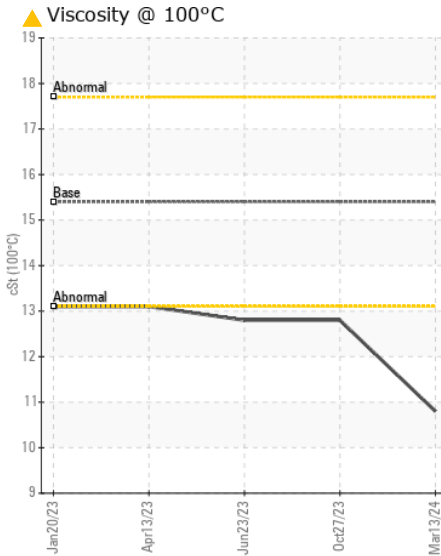
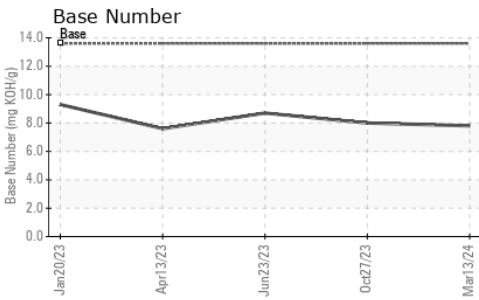
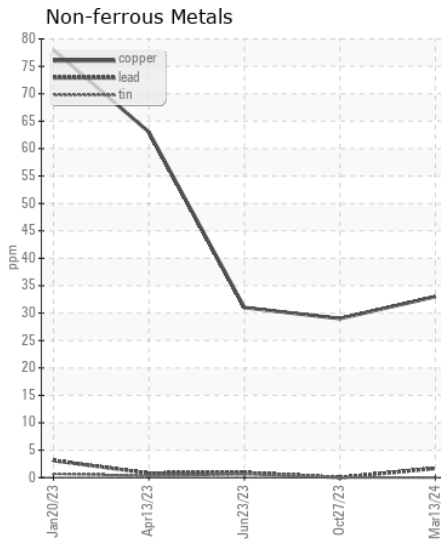
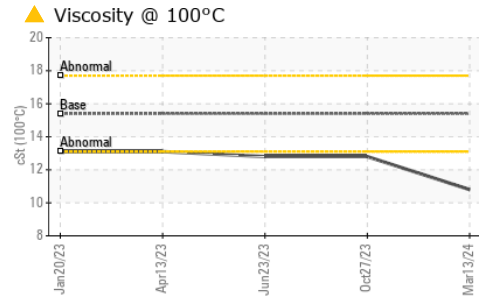
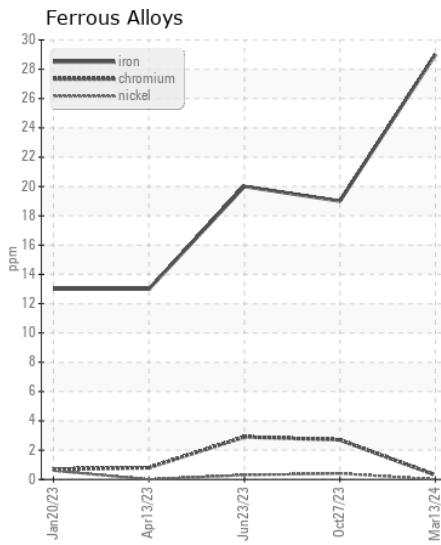
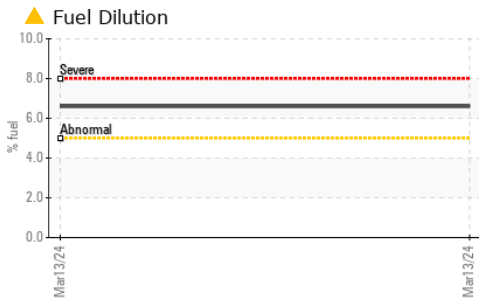
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	6	8	7
Potassium	ppm	ASTM D5185m	>20	0	<1	1
Fuel	%	ASTM D3524	>5	▲ 6.6	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.5	7.9	8.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	19.9	21.5
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. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		0	2	<1
Boron	ppm	ASTM D5185m		169	208	220
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		208	231	242
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		715	801	855
Calcium	ppm	ASTM D5185m		1197	1243	1376
Phosphorus	ppm	ASTM D5185m		800	864	888
Zinc	ppm	ASTM D5185m		912	1077	1115
Sulfur	ppm	ASTM D5185m		2898	2875	3558
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	14.5	16.3
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	7.8	8.0	8.7
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.8	12.8	12.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0196442 **Received** : 19 Mar 2024
Lab Number : 06122096 **Tested** : 21 Mar 2024
Unique Number : 10936247 **Diagnosed** : 21 Mar 2024 - Wes Davis
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

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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