



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 23

Component
Diesel Engine

Fluid
KING OIL MAGNUM MOLY BIG PLUS NT (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0711849	WC0711841	WCM2313627
Sample Date		Client Info		06 Oct 2023	14 Mar 2023	18 Oct 2022
Machine Age	mls	Client Info		67728	35442	11800
Oil Age	mls	Client Info		32300	23642	11800
Filter Age	mls	Client Info		32300	23642	11800
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	52	42	50
Chromium	ppm	ASTM D5185m	>20	2	2	2
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	24	37	28
Lead	ppm	ASTM D5185m	>40	5	3	3
Copper	ppm	ASTM D5185m	>330	4	9	19
Tin	ppm	ASTM D5185m	>15	2	2	3
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

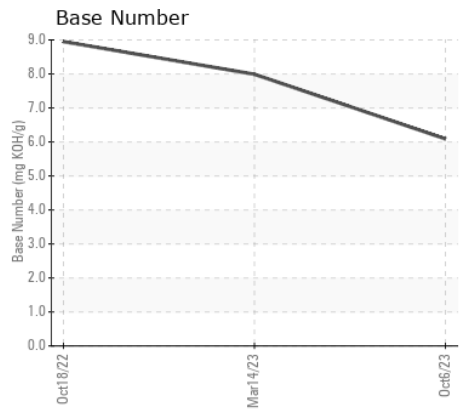
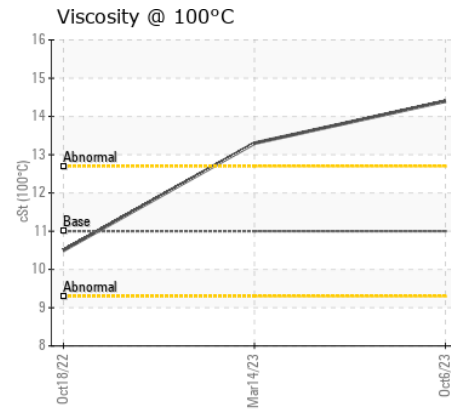
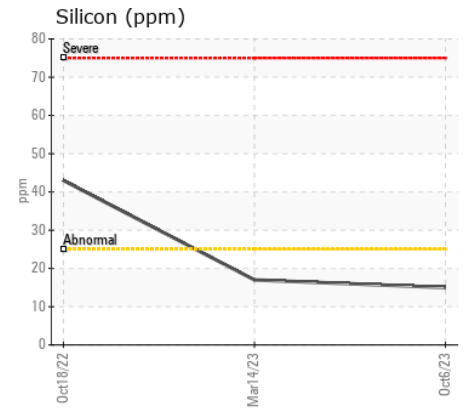
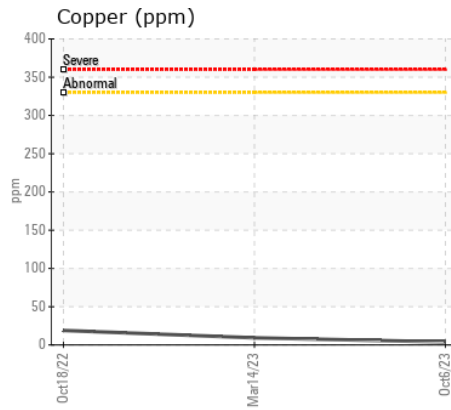
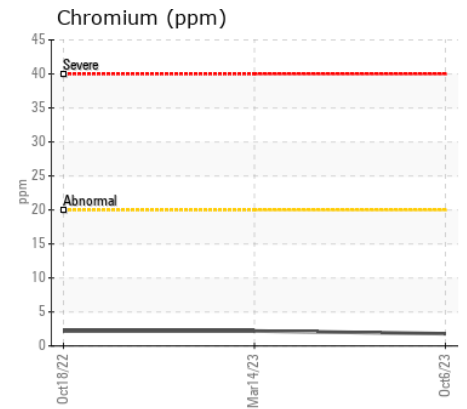
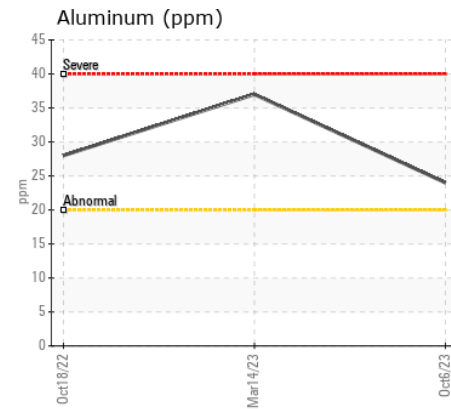
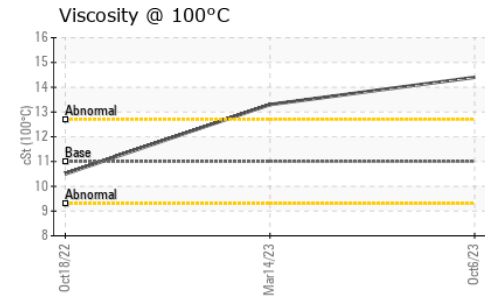
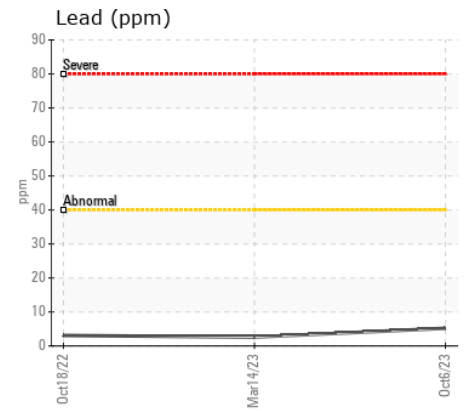
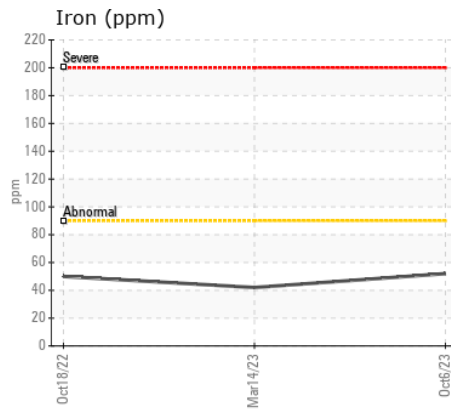
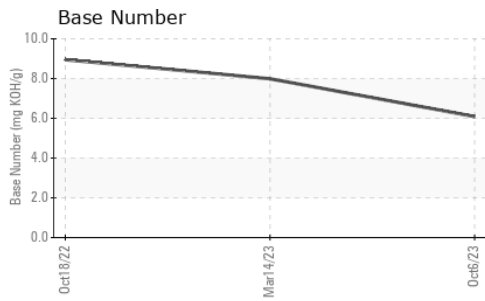
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	15	17	43
Potassium	ppm	ASTM D5185m	>20	54	80	85
Fuel		WC Method	>3.0	<1.0	<1.0	0.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	1.3	0.8	0.5
Nitration	Abs/cm	*ASTM D7624	>20	11.9	10.2	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	49.7	44.0	25.4
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		4	2	4
Boron	ppm	ASTM D5185m		43	159	40
Barium	ppm	ASTM D5185m		0	2	7
Molybdenum	ppm	ASTM D5185m		146	124	46
Manganese	ppm	ASTM D5185m		1	2	6
Magnesium	ppm	ASTM D5185m		642	593	543
Calcium	ppm	ASTM D5185m		1731	1566	1647
Phosphorus	ppm	ASTM D5185m		827	873	739
Zinc	ppm	ASTM D5185m		1140	1131	899
Sulfur	ppm	ASTM D5185m		2917	3226	2661
Oxidation	Abs/.1mm	*ASTM D7414	>25	55.9	49.3	22.9
Base Number (BN)	mg KOH/g	ASTM D2896		6.09	7.99	8.95
Visc @ 100°C	cSt	ASTM D445	11.0	14.4	13.3	10.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0711849 **Received** : 09 Feb 2024
Lab Number : 06085457 **Tested** : 12 Feb 2024
Unique Number : 10872902 **Diagnosed** : 13 Feb 2024 - Angela Borella
Test Package : MOB 2

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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)