OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id
2309
Component
Diesel Engine
Fluid
ROYAL PURPLE MOTOR OIL 15W40 (47 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

Cylinder, crank, or cam shaft wear is indicated.

CONTAMINATION

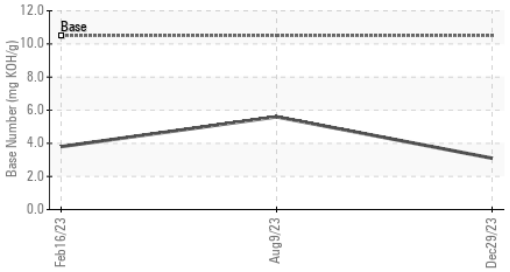
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

FLUID CONDITION

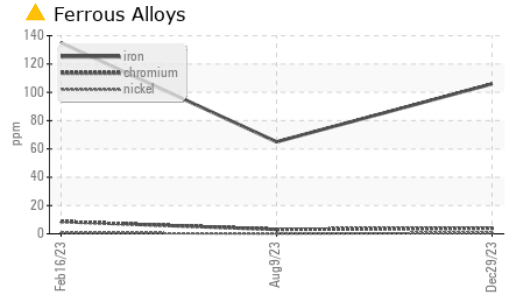
The BN level is low. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**WC0720149**	WC0719737	WC0719788
Sample Date		Client Info		**29 Dec 2023**	09 Aug 2023	16 Feb 2023
Machine Age	mls	Client Info		**236461**	186834	137248
Oil Age	mls	Client Info		**100000**	50000	100000
Filter Age	mls	Client Info		**50000**	50000	50000
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Filter Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	▲ **106**	65	▲ 135
Chromium	ppm	ASTM D5185m	>20	**4**	3	9
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m	>3	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**38**	31	76
Lead	ppm	ASTM D5185m	>40	**<1**	0	<1
Copper	ppm	ASTM D5185m	>330	**60**	61	▲ 338
Tin	ppm	ASTM D5185m	>15	**2**	1	3
Vanadium	ppm	ASTM D5185m		**0**	0	0
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	**11**	7	11
Potassium	ppm	ASTM D5185m	>20	**87**	71	164
Fuel		WC Method	>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	**2.1**	1.2	1.9
Nitration	Abs/cm	*ASTM D7624	>20	**18.6**	13.1	18.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**34.5**	25.4	31.7
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		**4**	4	4
Boron	ppm	ASTM D5185m	0	**1**	0	1
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**51**	52	7
Manganese	ppm	ASTM D5185m		**2**	2	4
Magnesium	ppm	ASTM D5185m	60	**831**	807	89
Calcium	ppm	ASTM D5185m	3050	**1802**	1523	2394
Phosphorus	ppm	ASTM D5185m	1050	**1159**	1002	827
Zinc	ppm	ASTM D5185m	1200	**1501**	1272	1118
Sulfur	ppm	ASTM D5185m	12500	**2776**	2863	2987
Oxidation	Abs/.1mm	*ASTM D7414	>25	**38.6**	24.5	32.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	▲ **3.1**	5.6	▲ 3.8
Visc @ 100°C	cSt	ASTM D445	14.9	**14.8**	13.0	14.2

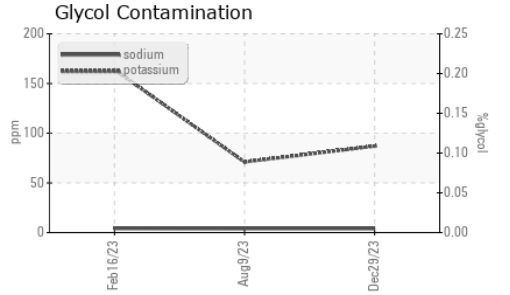
Base Number



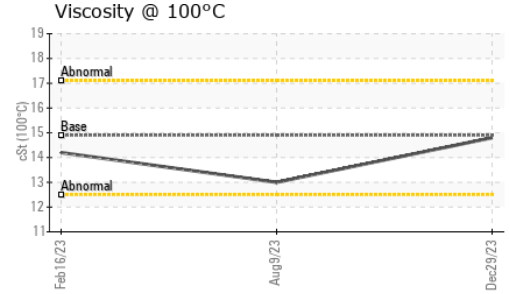
Ferrous Alloys



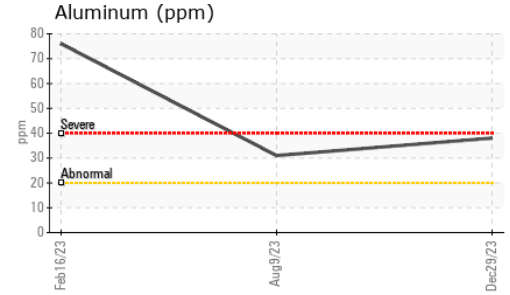
Glycol Contamination



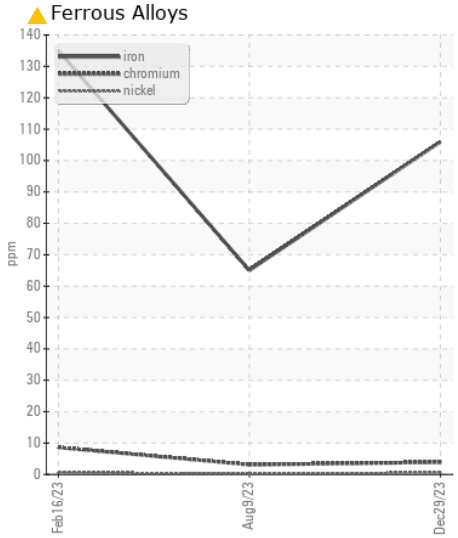
Viscosity @ 100°C



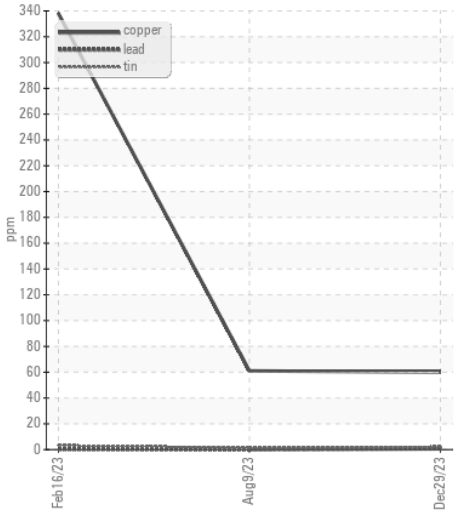
Aluminum (ppm)



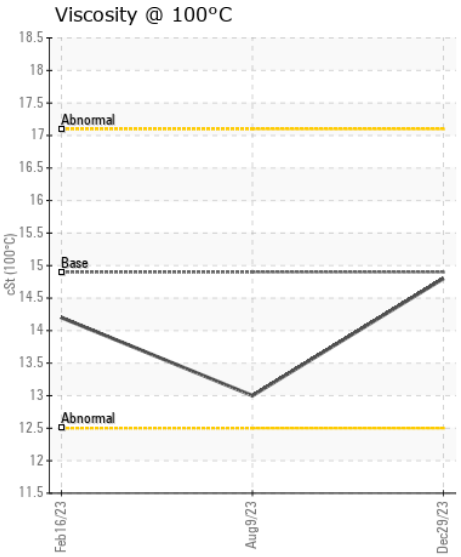
Ferrous Alloys



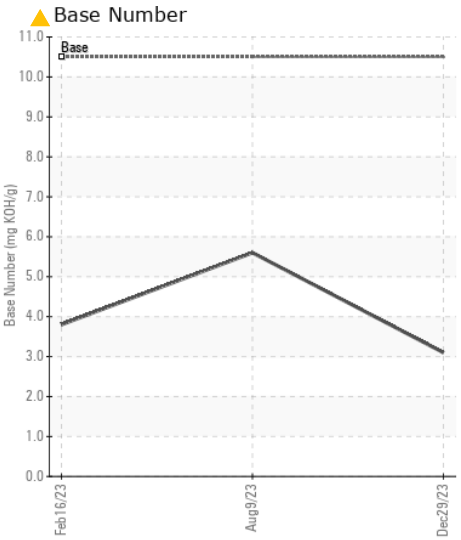
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: WC0720149	**Recieved**	: 08 Jan 2024
Lab Number	: 06054712	**Diagnosed**	: 10 Jan 2024
Unique Number	: 10820661	**Diagnostician**	: Sean Felton
Test Package	: FLEET		

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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