



# WEAR CHECK

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id  
**20616**  
Component  
**Diesel Engine**  
Fluid  
**SHELL 10W30 (--- QTS)**

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0878607</b>	WC0878590	WC0854041
Sample Date		Client Info		<b>17 Jan 2024</b>	07 Dec 2023	02 Oct 2023
Machine Age	mls	Client Info		<b>240367</b>	231270	215329
Oil Age	mls	Client Info		<b>9097</b>	15941	9670
Filter Age	mls	Client Info		<b>9097</b>	15941	9670
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ATTENTION</b>	ABNORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>3</b>	4	5
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	4	3
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>0</b>	1	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

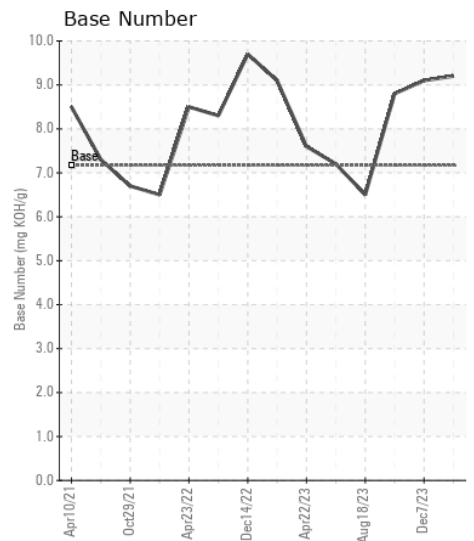
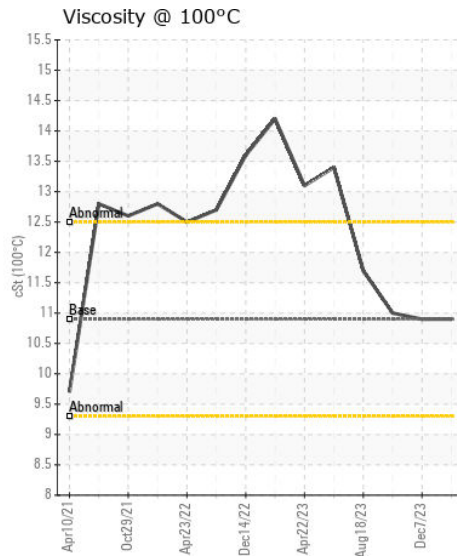
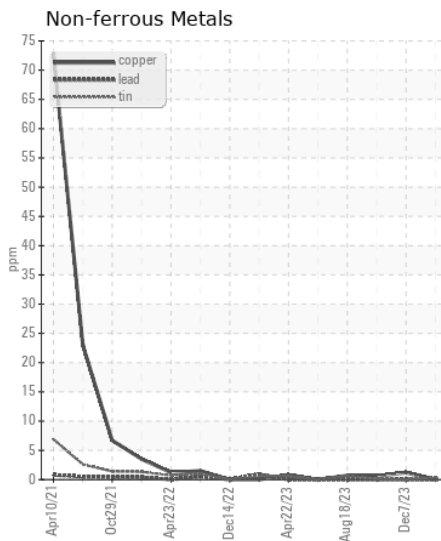
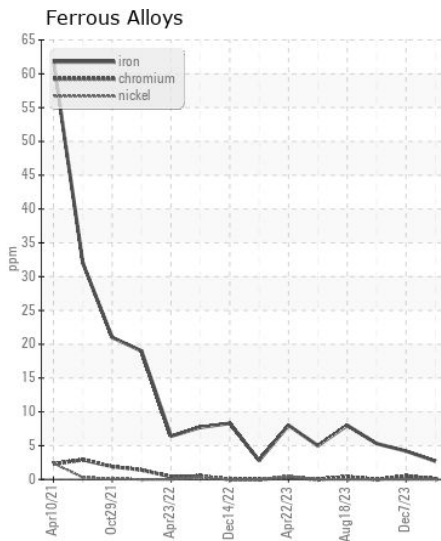
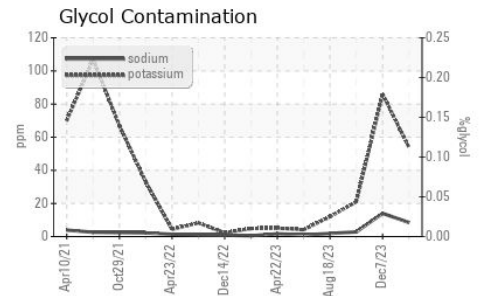
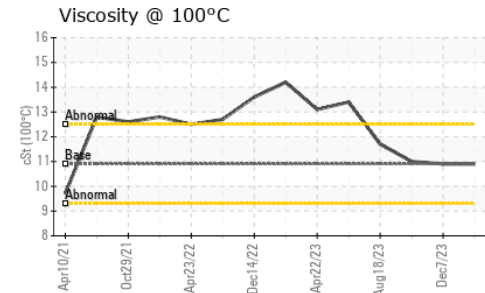
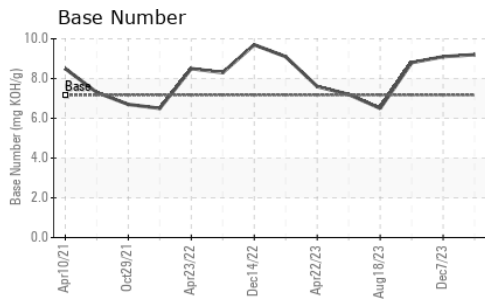
Sodium and/or potassium levels are high. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>25	<b>3</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>54</b>	86	21
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.1</b>	8.7	7.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.0</b>	20.2	18.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>8</b>	14	3
Boron	ppm	ASTM D5185m		<b>3</b>	2	2
Barium	ppm	ASTM D5185m		<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>63</b>	69	55
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m	470	<b>964</b>	958	861
Calcium	ppm	ASTM D5185m	1150	<b>960</b>	1092	1185
Phosphorus	ppm	ASTM D5185m	94	<b>1059</b>	1122	978
Zinc	ppm	ASTM D5185m	1030	<b>1266</b>	1287	1206
Sulfur	ppm	ASTM D5185m		<b>3127</b>	3134	3145
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.9</b>	16.2	14.1
Base Number (BN)	mg KOH/g	ASTM D2896	7.17	<b>9.2</b>	9.1	8.8
Visc @ 100°C	cSt	ASTM D445	10.90	<b>10.9</b>	10.9	11.0



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0878607 **Received** : 07 Feb 2024  
**Lab Number** : 06083009 **Tested** : 12 Feb 2024  
**Unique Number** : 10870454 **Diagnosed** : 12 Feb 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol )

**CARCO TRANSPORTATION**  
 3403 EAST ROOSEVELT ROAD  
 LITTLE ROCK, AR  
 US 72206  
 Contact: DENNIS CATES  
 denniscales@carcotrans.com  
 T: (800)967-0777  
 F:

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)