



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**CRANE CARRIER 212378**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (27 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0957009</b>	WC0861050	WC0819275
Sample Date		Client Info		<b>26 Jun 2024</b>	27 Sep 2023	15 Jun 2023
Machine Age	mls	Client Info		<b>26763</b>	22411	18817
Oil Age	mls	Client Info		<b>4352</b>	3594	3733
Filter Age	mls	Client Info		<b>4352</b>	3594	3733
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>33</b>	11	12
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>6</b>	4	2
Lead	ppm	ASTM D5185m	>25	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>100	<b>3</b>	3	9
Tin	ppm	ASTM D5185m	>4	<b>0</b>	<1	<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

There is no indication of any contamination in the oil.

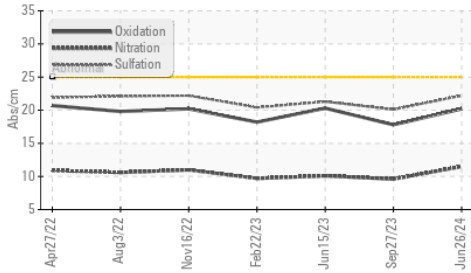
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>11</b>	4	3
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>6	<b>0.9</b>	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.5</b>	9.6	10.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.2</b>	20.1	21.3
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

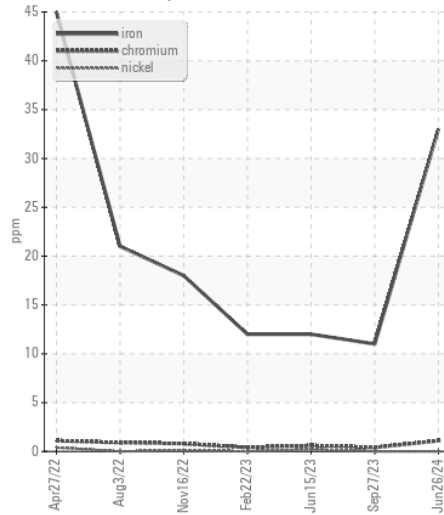
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	<b>8</b>	6	6
Boron	ppm	ASTM D5185m	250	<b>17</b>	28	31
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>50</b>	52	48
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>746</b>	702	791
Calcium	ppm	ASTM D5185m	3000	<b>1210</b>	1150	1176
Phosphorus	ppm	ASTM D5185m	1150	<b>652</b>	697	706
Zinc	ppm	ASTM D5185m	1350	<b>875</b>	880	877
Sulfur	ppm	ASTM D5185m	4250	<b>2637</b>	2765	2689
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.2</b>	17.8	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.3</b>	8.0	7.3
Visc @ 100°C	cSt	ASTM D445	14.4	<b>12.6</b>	12.9	13.6

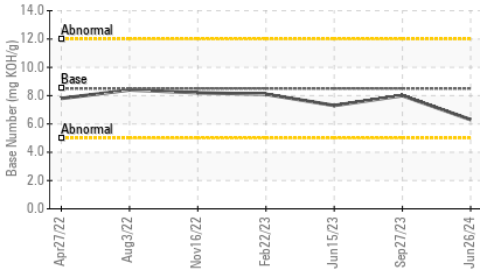
**FT-IR (Direct Trend)**



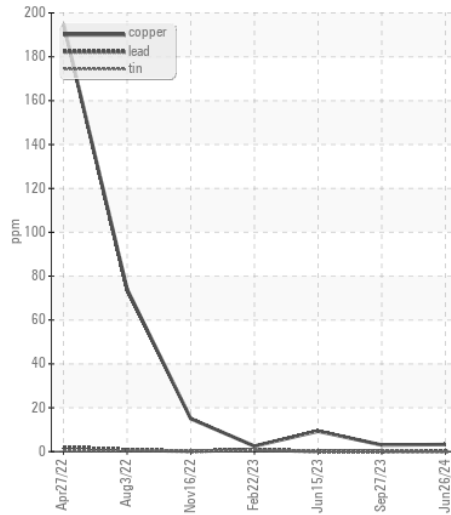
**Ferrous Alloys**



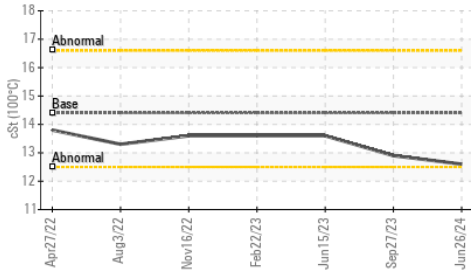
**Base Number**



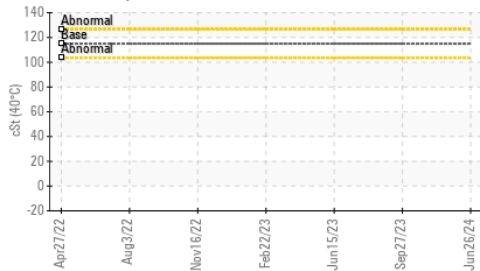
**Non-ferrous Metals**



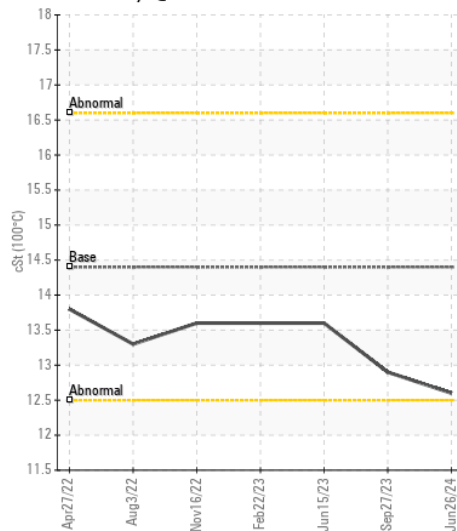
**Viscosity @ 100°C**



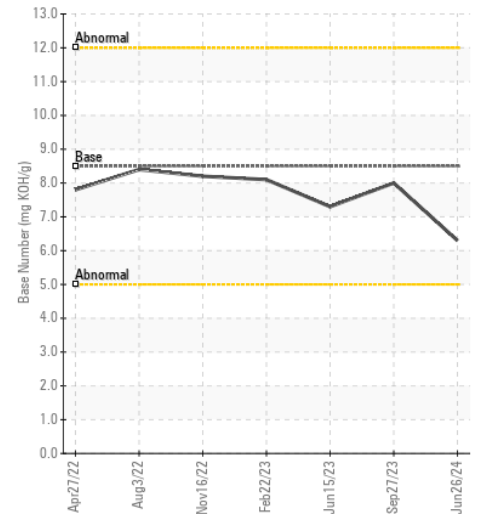
**Viscosity @ 40°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0957009 **Received** : 02 Jul 2024  
**Lab Number** : 06225885 **Tested** : 05 Jul 2024  
**Unique Number** : 11109378 **Diagnosed** : 05 Jul 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: KV40 )

**CITY OF GREENSBORO**  
 401 PATTON AVE - BUILDING H  
 GREENSBORO, NC  
 US 27406  
 Contact: JERRY GUNTER  
 jerry.gunter@greensboro-nc.gov

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)

T: x  
 F: x