



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**INTERNATIONAL 410**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (22 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0870663</b>	WC0806709	WCM1195935
Sample Date		Client Info		<b>14 Dec 2023</b>	18 Apr 2023	05 Apr 2010
Machine Age	mls	Client Info		<b>234107</b>	228603	74632
Oil Age	mls	Client Info		<b>0</b>	0	0
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	N/A
Filter Changed		Client Info		<b>Not Changd</b>	Changed	N/A
Sample Status				<b>NORMAL</b>	NORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>48</b>	37	42
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	1	2
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	2
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>11</b>	7	5
Lead	ppm	ASTM D5185m	>40	<b>1</b>	<1	2
Copper	ppm	ASTM D5185m	>330	<b>2</b>	16	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

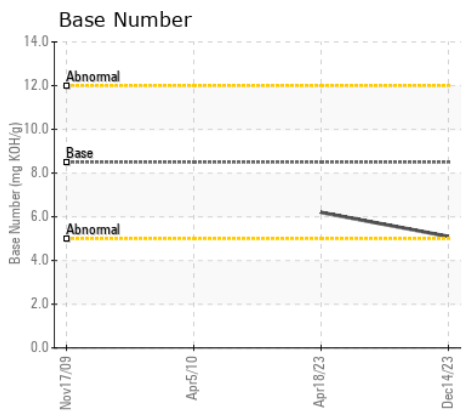
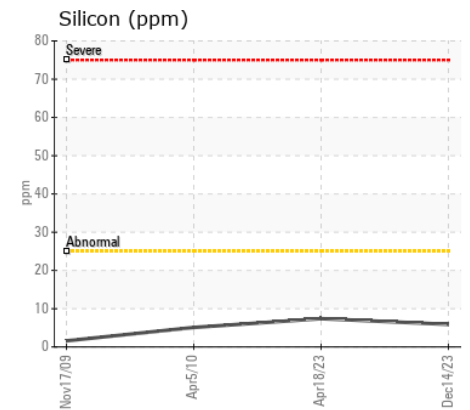
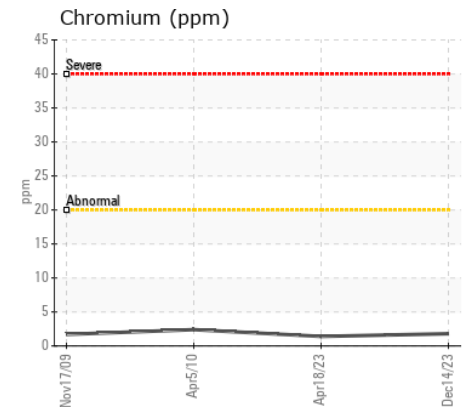
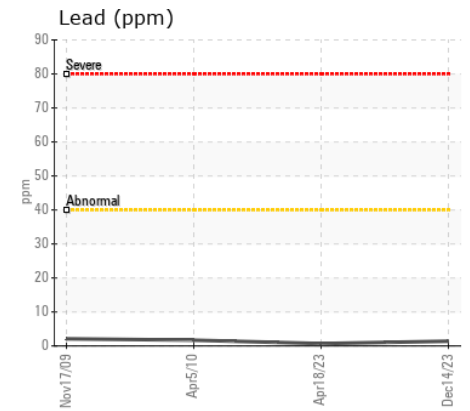
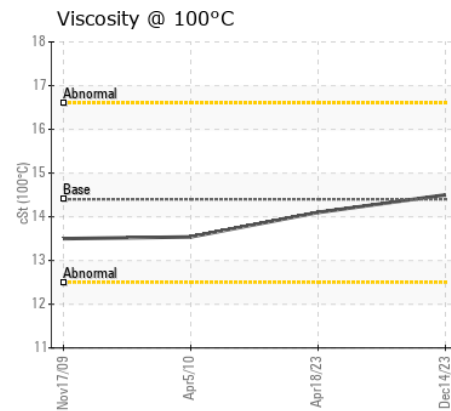
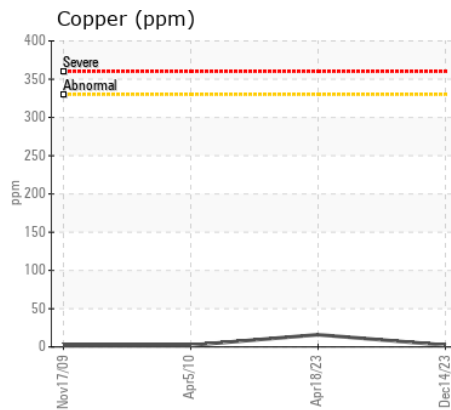
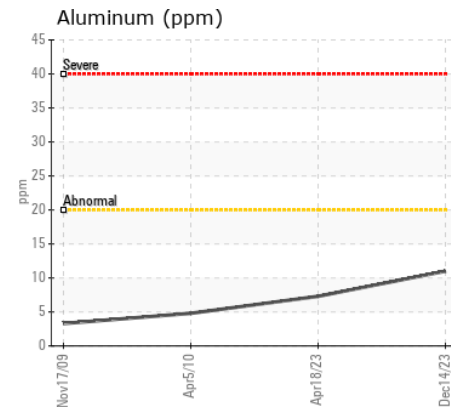
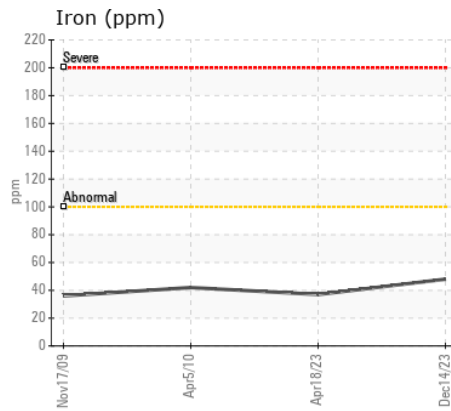
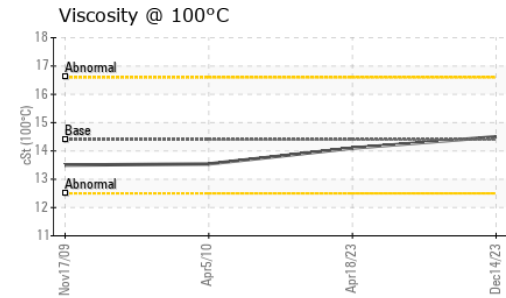
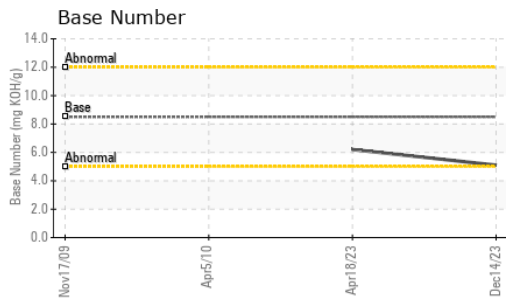
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>6</b>	7	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	▲ 130
Fuel		WC Method	>2.0	<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	>3	<b>0.8</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>13.1</b>	11.9	7.
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>25.5</b>	21.4	18.
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>5</b>	4	25
Boron	ppm	ASTM D5185m	250	<b>25</b>	40	2
Barium	ppm	ASTM D5185m	10	<b>4</b>	4	<1
Molybdenum	ppm	ASTM D5185m	100	<b>93</b>	96	16
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>38</b>	24	70
Calcium	ppm	ASTM D5185m	3000	<b>2173</b>	2316	2194
Phosphorus	ppm	ASTM D5185m	1150	<b>950</b>	1075	1022
Zinc	ppm	ASTM D5185m	1350	<b>1148</b>	1265	1168
Sulfur	ppm	ASTM D5185m	4250	<b>3729</b>	3957	3496
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.3</b>	17.1	12.
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>5.1</b>	6.2	---
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.5</b>	14.1	13.54



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0870663 **Received** : 12 Jan 2024  
**Lab Number** : 06059823 **Diagnosed** : 15 Jan 2024  
**Unique Number** : 10831205 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: 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)

**WAKE COUNTY PUBLIC SCHOOL SYSTEM**  
 1551 ROCK QUARRY ROAD  
 RALEIGH, NC  
 US 27610  
 Contact: DEVIN WEBER  
 dweber@wcpss.net  
 T: (919)856-8076  
 F: x: