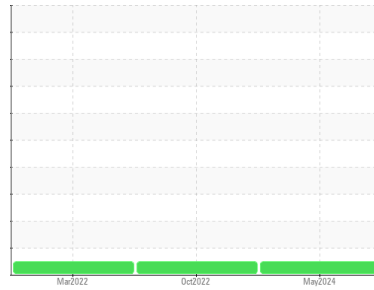




# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**BLUE BIRD 242**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>RW0004980</b>	RW0003813	RW0003866
Sample Date	Client Info			<b>07 May 2024</b>	13 Oct 2022	26 Mar 2022
Machine Age	mls	Client Info		<b>72000</b>	36532	24000
Oil Age	mls	Client Info		<b>12000</b>	12000	12000
Oil Changed	Client Info			<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	<b>25</b>	28	36
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	1
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>8</b>	14	21
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>2</b>	2	9
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	<b>0</b>	3	4
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>63</b>	58	54
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m	450	<b>993</b>	902	884
Calcium	ppm	ASTM D5185m	3000	<b>1226</b>	1149	1104
Phosphorus	ppm	ASTM D5185m	1150	<b>1062</b>	1011	948
Zinc	ppm	ASTM D5185m	1350	<b>1272</b>	1229	1158
Sulfur	ppm	ASTM D5185m	4250	<b>3550</b>	3564	2285

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>5</b>	14	9
Sodium	ppm	ASTM D5185m	>158	<b>3</b>	<1	3
Potassium	ppm	ASTM D5185m	>20	<b>10</b>	33	50

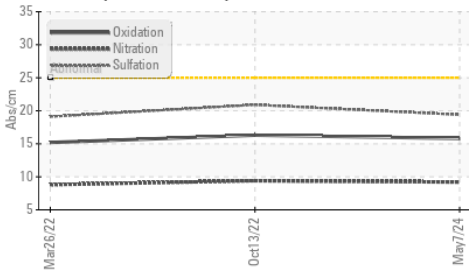
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.5</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.2</b>	9.4	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.4</b>	20.9	19.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.8</b>	16.3	15.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.64</b>	7.94	8.06

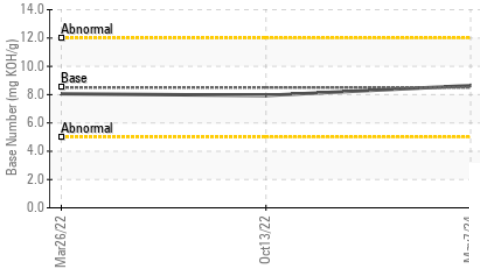


# OIL ANALYSIS REPORT

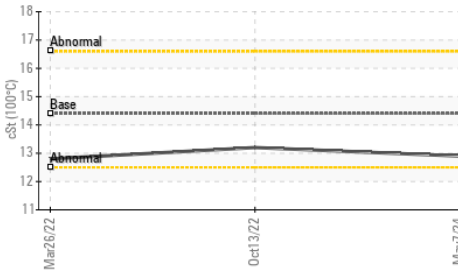
FT-IR (Direct Trend)



Base Number



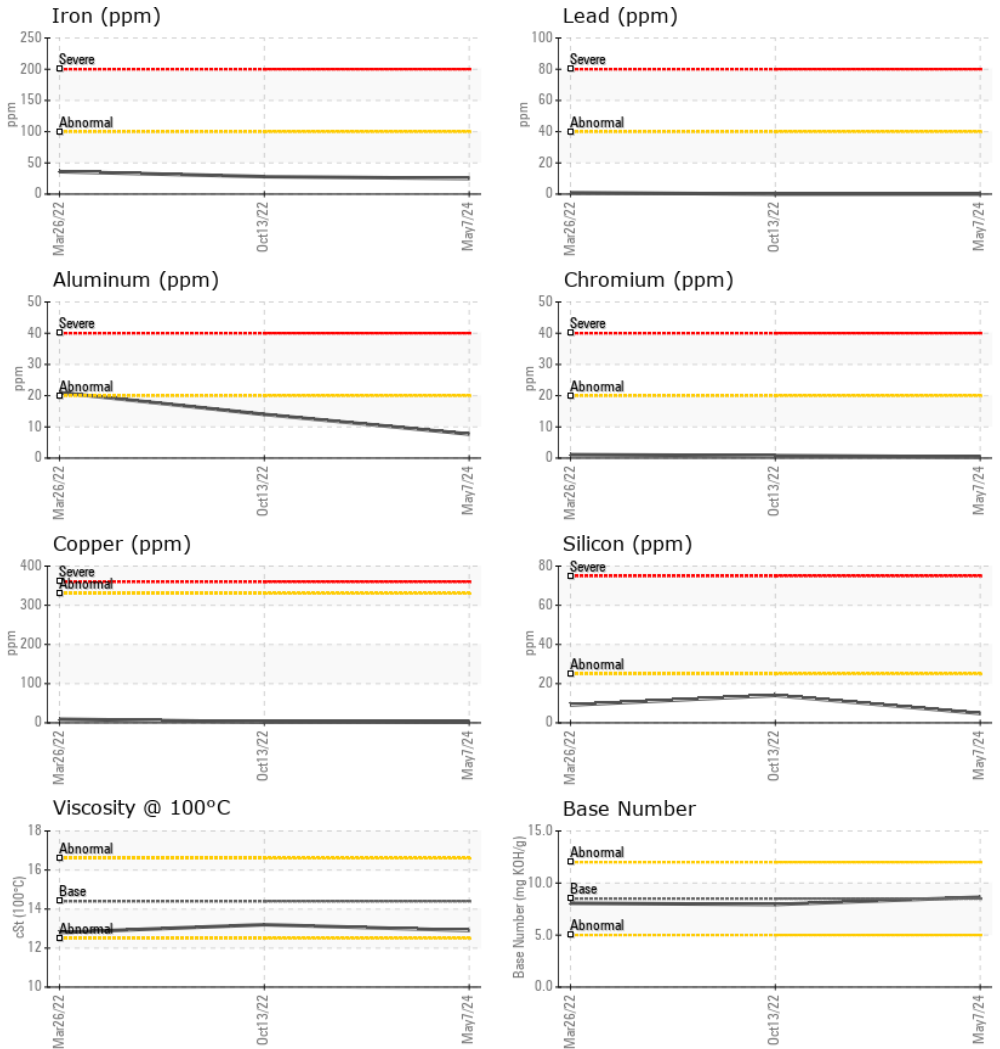
Viscosity @ 100°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	13.2

## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : RW0004980  
 Lab Number : 06179007  
 Unique Number : 11030333  
 Test Package : MOB 2

Received : 14 May 2024  
 Tested : 15 May 2024  
 Diagnosed : 15 May 2024 - Wes Davis

WEST BRANCH/ROSE CITY SCHOOLS  
 224 THOMAS  
 WEST BRANCH, MI  
 US 48661  
 Contact: BUTCH HART  
 hartb@wbrc.k12.mi.us  
 T: (989)343-2240  
 F: (989)343-2249

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)