



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>SEVERE</b>
FLUID CONDITION	<b>ABNORMAL</b>

Machine Id  
**GODWIN 523**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>RW0005013</b>	RW0004177	RW0002588
Sample Date		Client Info		<b>15 Feb 2024</b>	09 Mar 2023	30 Nov 2021
Machine Age	hrs	Client Info		<b>3476</b>	2240	1371
Oil Age	hrs	Client Info		<b>1236</b>	830	87
Filter Age	hrs	Client Info		<b>1236</b>	830	87
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>▲ 108</b>	51	93
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	1	3
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
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>12</b>	12	● 6
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	4
Copper	ppm	ASTM D5185m	>330	<b>16</b>	3	25
Tin	ppm	ASTM D5185m	>15	<b>0</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

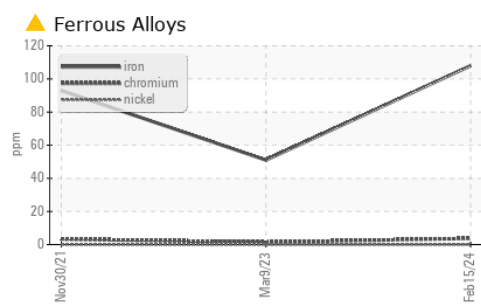
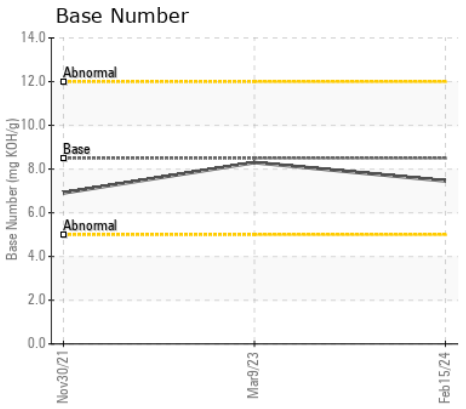
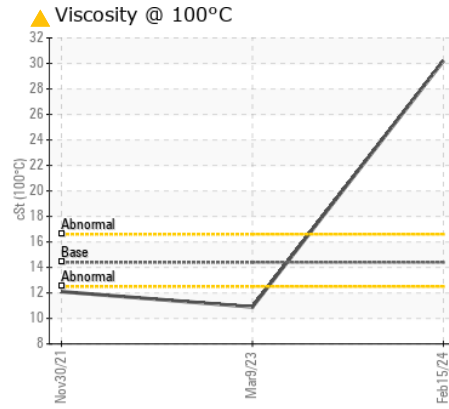
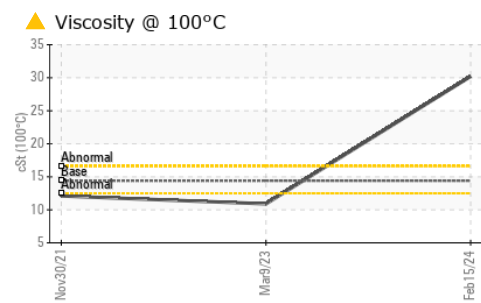
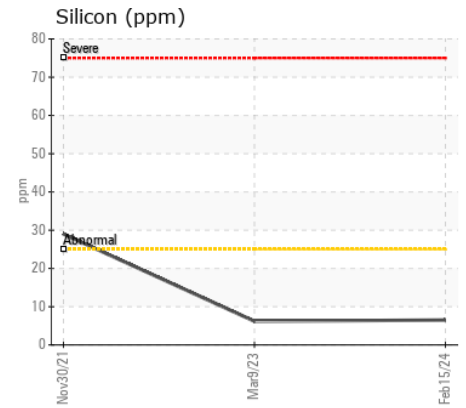
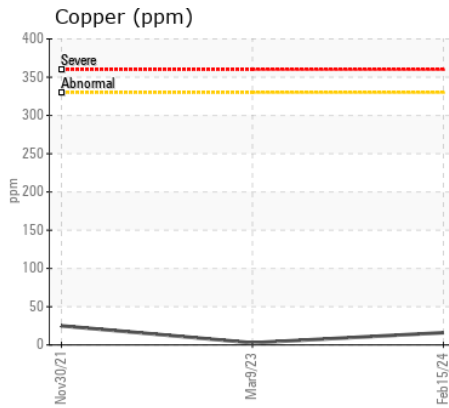
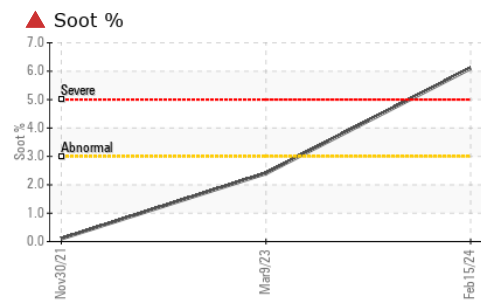
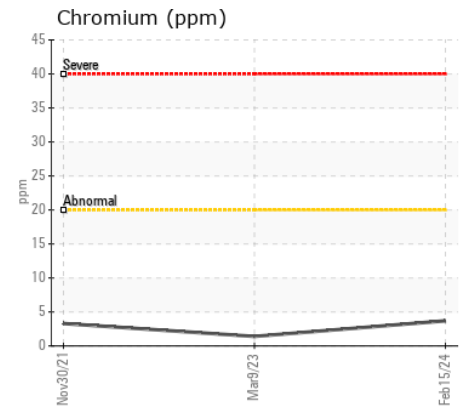
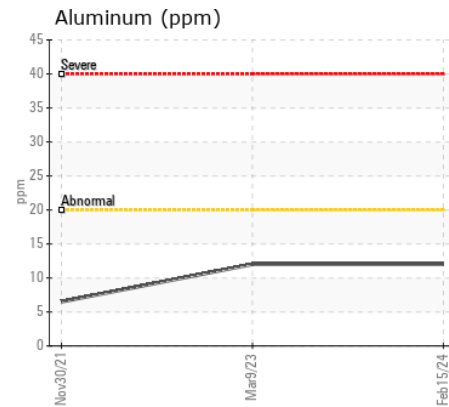
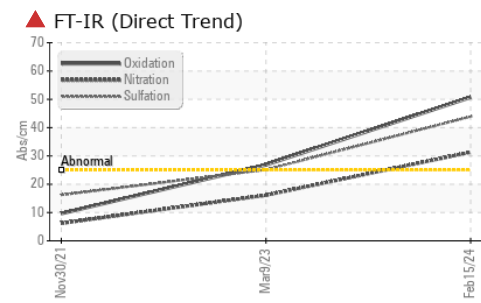
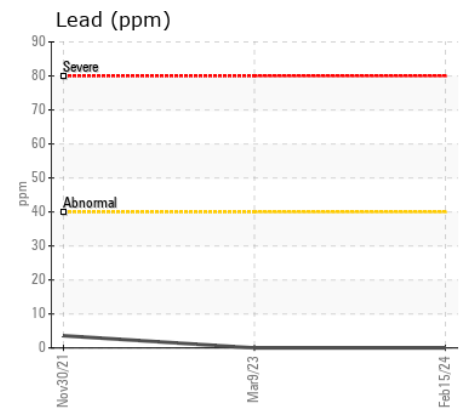
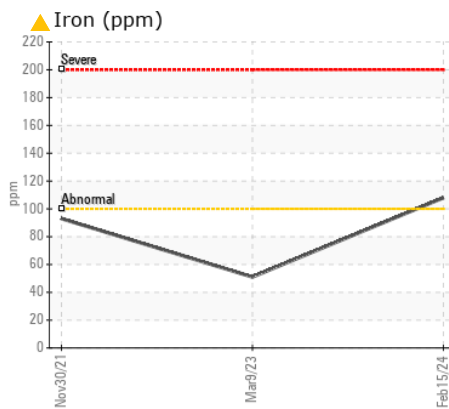
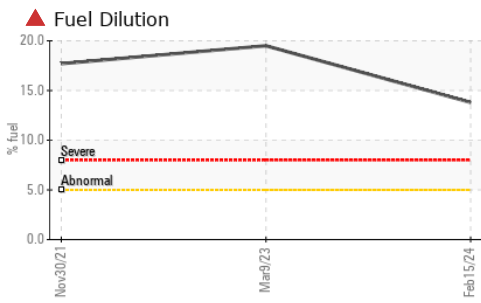
Sodium and/or potassium levels are high. There is a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon present in the oil. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>25	<b>6</b>	6	▲ 29
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	0	0
Fuel	%	ASTM D3524	>5	<b>▲ 13.8</b>	▲ 19.5	▲ 17.7
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>▲ 6.1</b>	2.4	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>31.3</b>	16.1	6.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>43.9</b>	25.1	16.2
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 oil viscosity is higher than normal. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>158	● <b>76</b>	<1	6
Boron	ppm	ASTM D5185m	250	<b>9</b>	5	5
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>60</b>	47	54
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	2
Magnesium	ppm	ASTM D5185m	450	<b>827</b>	731	731
Calcium	ppm	ASTM D5185m	3000	<b>977</b>	847	1306
Phosphorus	ppm	ASTM D5185m	1150	<b>889</b>	759	897
Zinc	ppm	ASTM D5185m	1350	<b>1081</b>	978	1048
Sulfur	ppm	ASTM D5185m	4250	<b>2862</b>	2463	2490
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>50.7</b>	26.8	9.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>7.46</b>	8.30	6.91
Visc @ 100°C	cSt	ASTM D445	14.4	▲ <b>30.2</b>	▲ 10.9	▲ 12.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RW0005013  
**Lab Number** : 06146738  
**Unique Number** : 10976816  
**Test Package** : MOB 2 ( Additional Tests: Glycol, PercentFuel )

**Received** : 11 Apr 2024  
**Tested** : 17 Apr 2024  
**Diagnosed** : 17 Apr 2024 - Jonathan Hester

**HALLACK CONTRACTING, INC.**  
 4223 W POLK  
 HART, MI  
 US 49420  
 Contact: DAN HALLACK KARL BUTCHER  
 shop@hallackcontracting.com  
 T: (231)873-5081  
 F: (231)873-2889

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)