



Machine Id  
**JOHN DEERE 644K 8018**  
Component  
**Rear Differential**  
Fluid  
**JOHN DEERE HY-GARD HYD/TRANS (--- GAL)**

**RECOMMENDATION**

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PC0078902</b>	PC0069160	PC0060123
Sample Date		Client Info		<b>18 Mar 2024</b>	19 Apr 2023	28 Jun 2022
Machine Age	hrs	Client Info		<b>5373</b>	4435	3633
Oil Age	hrs	Client Info		<b>0</b>	1000	0
Filter Age	hrs	Client Info		<b>0</b>	1000	0
Oil Changed		Client Info		<b>Not Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	NORMAL	NORMAL

**WEAR**

Chromium ppm levels are severe.

Iron	ppm	ASTM D5185(m)	>420	<b>13</b>	22	31
Chromium	ppm	ASTM D5185(m)	>4	<b>▲ 8</b>	0	0
Nickel	ppm	ASTM D5185(m)	>4	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>5	<b>&lt;1</b>	<1	1
Lead	ppm	ASTM D5185(m)	>95	<b>0</b>	<1	1
Copper	ppm	ASTM D5185(m)	>170	<b>2</b>	15	12
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185(m)		<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.

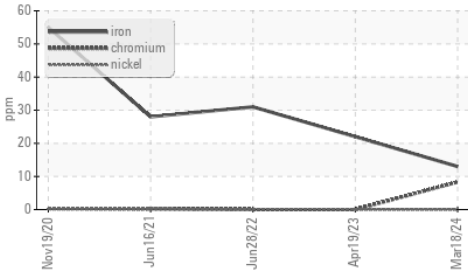
Silicon	ppm	ASTM D5185(m)	>35	<b>0</b>	9	10
Potassium	ppm	ASTM D5185(m)	>20	<b>1</b>	0	2
Water		WC Method	>.2	<b>NEG</b>	NEG	NEG
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	VLITE
Debris	scalar	Visual*	NONE	<b>VLITE</b>	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	<b>VLITE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

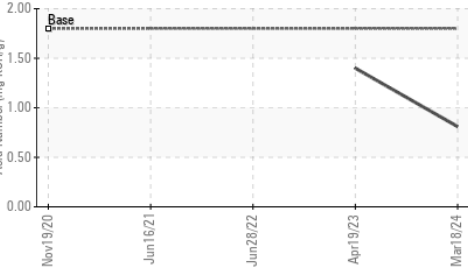
Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>3</b>	3	8
Boron	ppm	ASTM D5185(m)	6	<b>&lt;1</b>	86	84
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	0	<b>0</b>	14	15
Manganese	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)	145	<b>7</b>	13	15
Calcium	ppm	ASTM D5185(m)	3570	<b>132</b>	3125	3018
Phosphorus	ppm	ASTM D5185(m)	1290	<b>636</b>	1175	1056
Zinc	ppm	ASTM D5185(m)	1640	<b>824</b>	1274	1241
Sulfur	ppm	ASTM D5185(m)		<b>1497</b>	2883	2955
Acid Number (AN)	mg KOH/g	ASTM D974*	1.8	<b>0.81</b>	1.40	---
Visc @ 40°C	cSt	ASTM D7279(m)	57.0	<b>54.2</b>	51.6	50.3
Visc @ 100°C	cSt	ASTM D7279(m)	9.4	<b>9.8</b>	8.3	8.3
Viscosity Index (VI)	Scale	ASTM D2270*		<b>168</b>	134	138

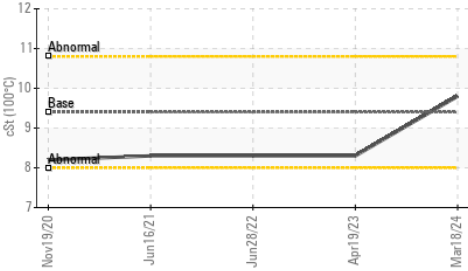
▲ Ferrous Alloys



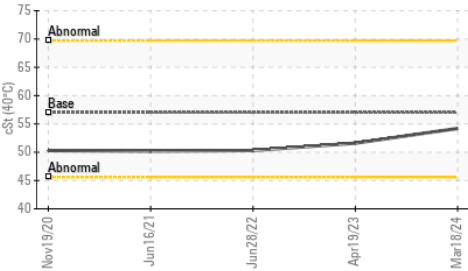
Acid Number



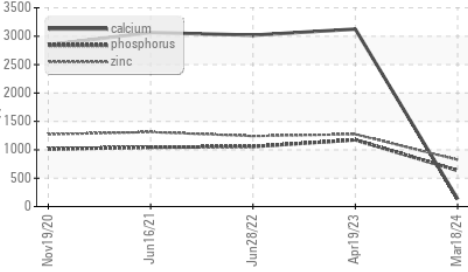
Viscosity @ 100°C



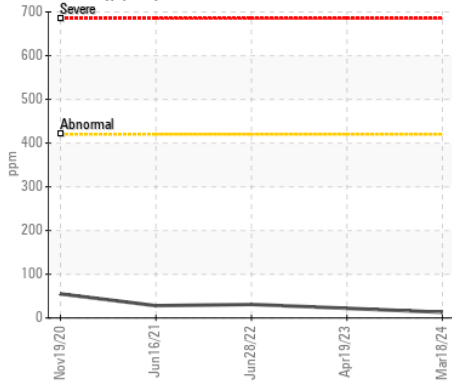
Viscosity @ 40°C



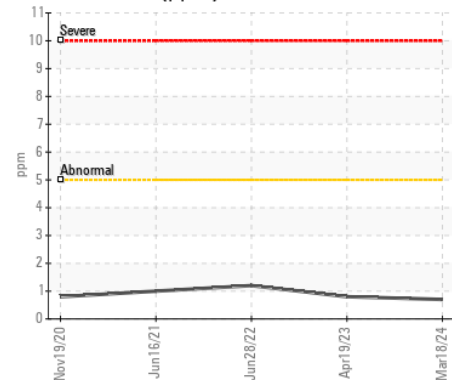
Additives



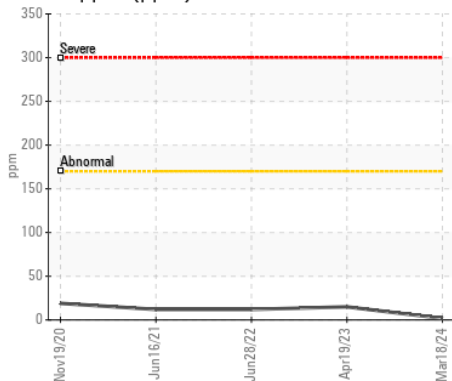
Iron (ppm)



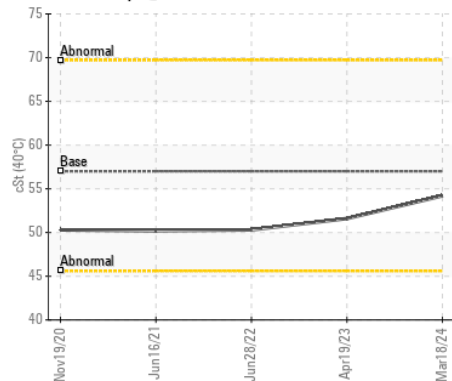
Aluminum (ppm)



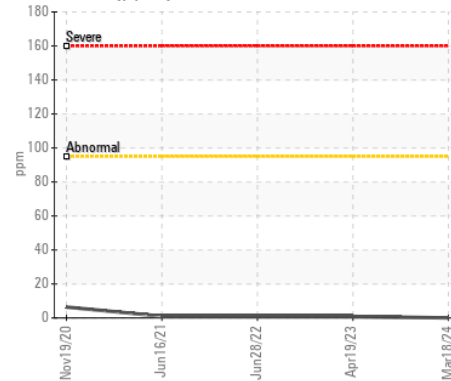
Copper (ppm)



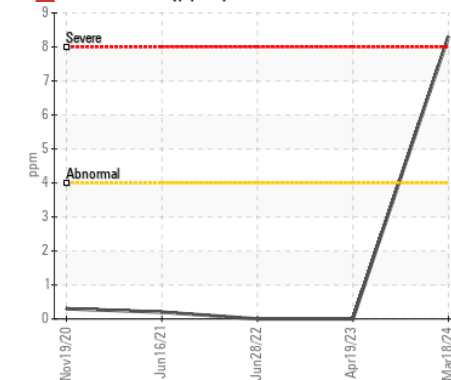
Viscosity @ 40°C



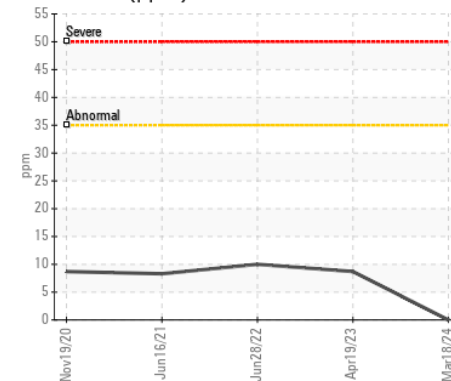
Lead (ppm)



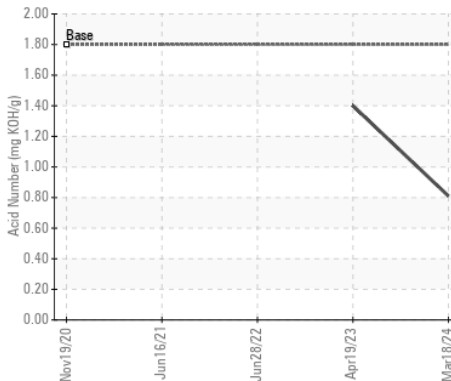
▲ Chromium (ppm)



Silicon (ppm)



Acid Number



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0078902 **Received** : 15 Apr 2024  
**Lab Number** : 02628963 **Tested** : 16 Apr 2024  
**Unique Number** : 5762095 **Diagnosed** : 17 Apr 2024 - Kevin Marson  
**Test Package** : MOB 2 ( Additional Tests: KV100, TAN Man, VI )

**TRUCK AND EQUIPMENT SOLUTION**  
 2 BERTRAM INDUSTRIAL PKWY.  
 MIDHURST, ON  
 CA L9X 1L2  
 Contact: Julie Holden  
 parts@tesbarrie.com  
 T: (705)792-7620  
 F: (705)725-5425

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.