

#### Machine Id HITACHI 470LC-6 HCMJAG60T00060492 Component Right Final Drive Fluid JOHN DEERE GL-5 80W90 (--- GAL)

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

### **WEAR**

Gear wear is indicated.

# CONTAMINATION

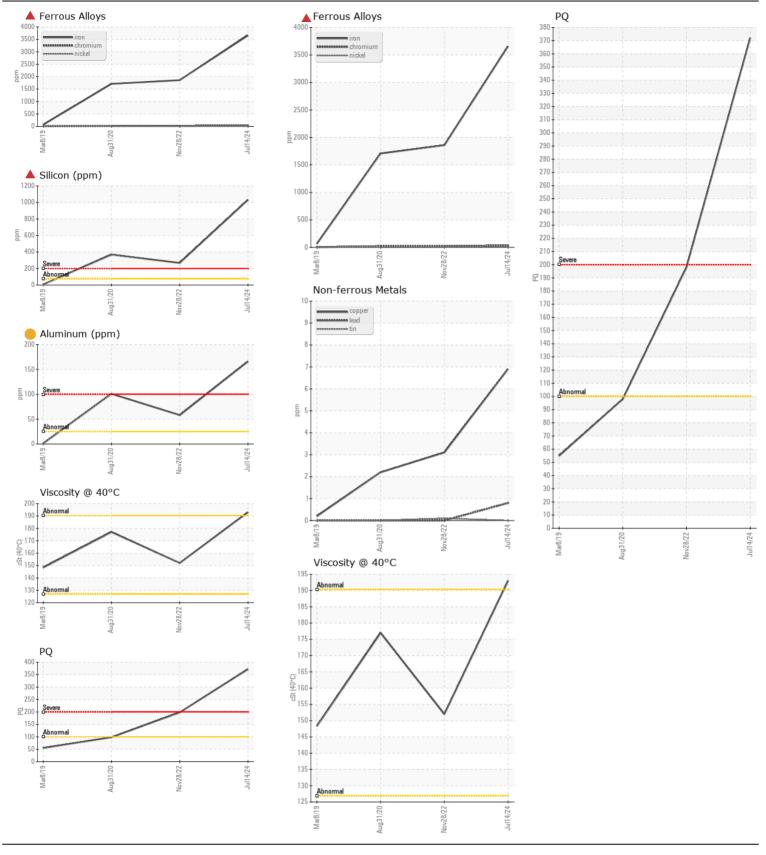
Elemental levels of silicon (Si) and aluminum (Al) indicate aluminasilicate (coarse dirt) ingress.

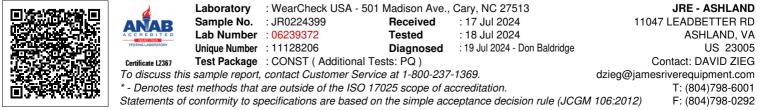
# FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

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Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0224399	JR0148711	JR0059724
Sample Date		Client Info		14 Jul 2024	28 Nov 2022	31 Aug 2020
Machine Age	hrs	Client Info		8033	5966	3982
Oil Age	hrs	Client Info		0	0	2000
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				SEVERE	SEVERE	SEVERE
					400	
PQ		ASTM D8184	500	372	198	98
Iron	ppm	ASTM D5185m	>500	▲ 3658	▲ 1858	<b>1</b> 709
Chromium	ppm	ASTM D5185m	>10	▲ 35	▲ 20 0	<u> </u>
Nickel	ppm	ASTM D5185m	>10	4	2	<1
Titanium	ppm	ASTM D5185m		22	4	5
Silver	ppm	ASTM D5185m	0.5	<1	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>166</b>	58	101
Lead	ppm	ASTM D5185m	>25	<1	0	0
Copper	ppm	ASTM D5185m	>50	7	3	2
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	MODER	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		*Visual ASTM D5185m	NONE			
Silicon	ppm	ASTM D5185m	>75	<b>1</b> 032	<b>2</b> 68	NONE 368 31
Silicon Potassium			>75 >20	▲ 1032 50	▲ 268 15	▲ 368 31
Silicon	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>75 >20 >0.2	<b>1</b> 032	<b>2</b> 68	<b>▲</b> 368
Silicon Potassium Water	ppm	ASTM D5185m ASTM D5185m	>75 >20	▲ 1032 50 NEG	▲ 268 15 NEG	▲ 368 31 NEG
Silicon Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>75 >20 >0.2 NONE	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >0.2 NONE NONE	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>
Silicon Potassium Water Silt Debris	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>75 >20 >0.2 NONE NONE NONE	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance	ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NEG</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar gppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> <li>136</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> <li>1</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> <li>136</li> <li>0</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> <li>&lt;1</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> <li>1</li> <li>4</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> <li>136</li> <li>0</li> <li>2</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> <li>&lt;1</li> <li>0</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> <li>1</li> <li>4</li> <li>28</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> <li>136</li> <li>0</li> <li>2</li> <li>15</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> <li>&lt;1</li> <li>0</li> <li>16</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> <li>1</li> <li>4</li> <li>28</li> <li>10</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NORML</li> <li>136</li> <li>0</li> <li>2</li> <li>15</li> <li>7</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> <li>&lt;1</li> <li>0</li> <li>16</li> <li>12</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> <li>1</li> <li>4</li> <li>28</li> <li>10</li> <li>8</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> <li>136</li> <li>0</li> <li>2</li> <li>15</li> <li>7</li> <li>16</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> <li>&lt;1</li> <li>0</li> <li>16</li> <li>12</li> <li>43</li> </ul>
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm pm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>75 >20 >0.2 NONE NONE NONE NORML NORML	<ul> <li>1032</li> <li>50</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>8</li> <li>126</li> <li>1</li> <li>4</li> <li>28</li> <li>10</li> <li>8</li> <li>1006</li> </ul>	<ul> <li>268</li> <li>15</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>5</li> <li>136</li> <li>0</li> <li>2</li> <li>15</li> <li>7</li> <li>16</li> <li>1329</li> </ul>	<ul> <li>368</li> <li>31</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>9</li> <li>30</li> <li>&lt;1</li> <li>0</li> <li>16</li> <li>12</li> <li>43</li> <li>1841</li> </ul>

Contact/Location: DAVID ZIEG - JAMASH





Contact/Location: DAVID ZIEG - JAMASH Page 2 of 2