



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

Machine Id  
**HAMM HD120 H2070092**

Component  
**Diesel Engine**

Fluid  
**{not provided} (--- GAL)**

### RECOMMENDATION

We advise that you check for faulty combustion and a possible overheat condition. We advise that you check the engine tuning and timing. We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

### WEAR

Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated.

### CONTAMINATION

There is an abnormal level of nitration indicated. Test for glycol is positive. Light fuel dilution occurring. There is a high concentration of glycol present in the oil. No other contaminants were detected in the oil.

### FLUID CONDITION

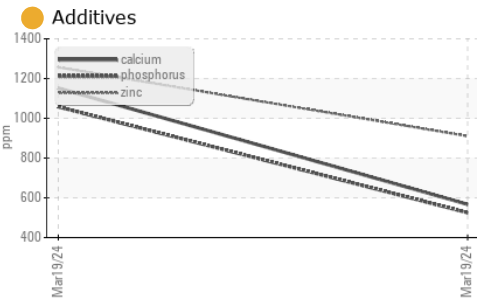
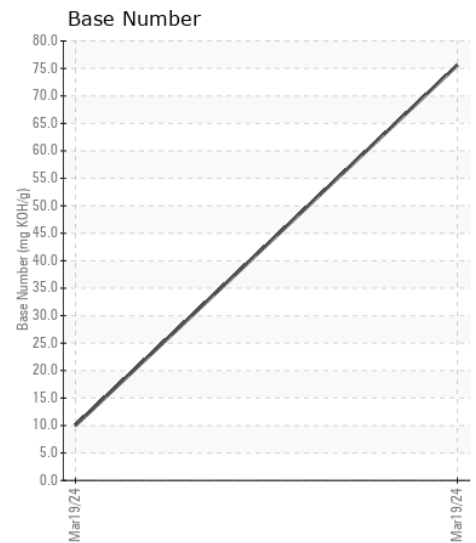
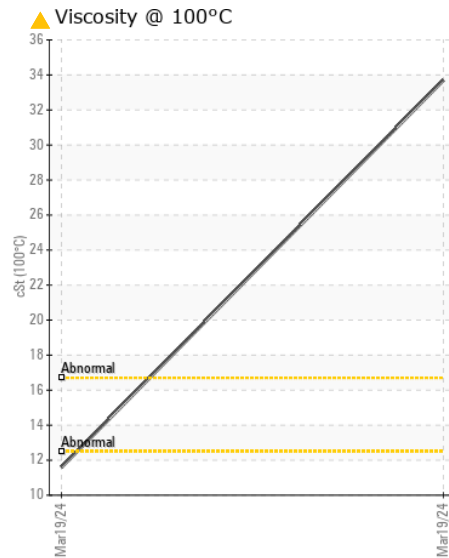
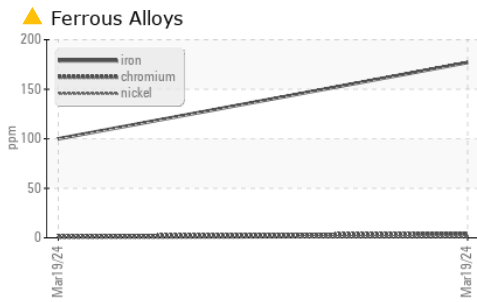
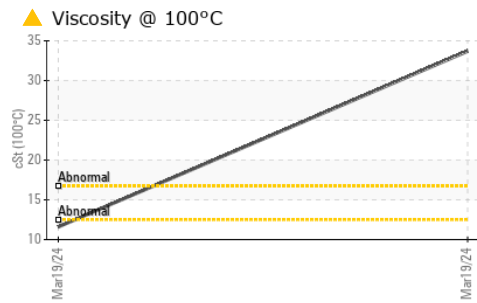
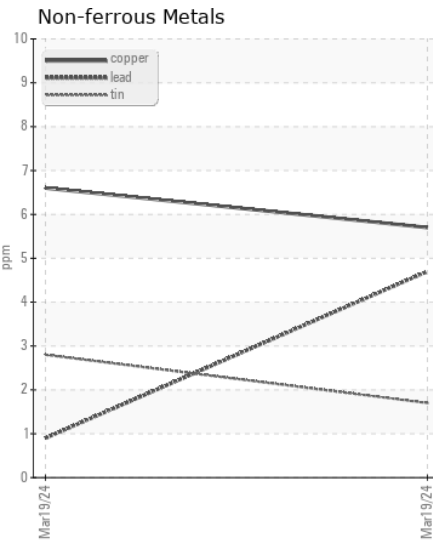
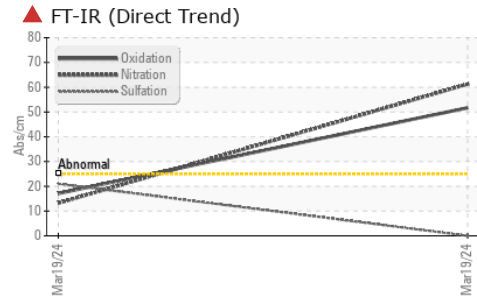
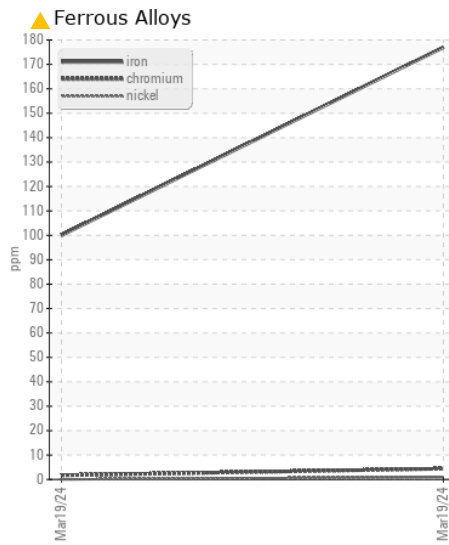
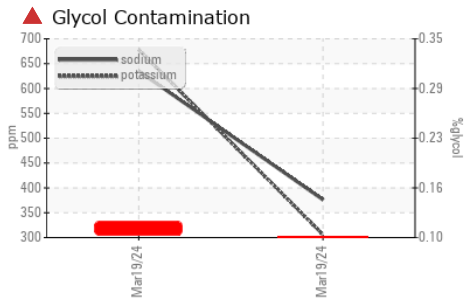
A small degree of oil oxidation was indicated. The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. An additive depletion is indicated. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0209466</b>	JR0197690	---
Sample Date		Client Info		<b>19 Mar 2024</b>	19 Mar 2024	---
Machine Age	hrs	Client Info		<b>7199</b>	7199	---
Oil Age	hrs	Client Info		<b>6779</b>	6779	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>N/A</b>	Not Changd	---
Filter Changed		Client Info		<b>N/A</b>	Not Changd	---
Sample Status				<b>SEVERE</b>	SEVERE	---

Iron	ppm	ASTM D5185m	>100	<b>▲ 100</b>	▲ 177	---
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	4	---
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	1	---
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>11</b>	17	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	5	---
Copper	ppm	ASTM D5185m	>330	<b>7</b>	6	---
Tin	ppm	ASTM D5185m	>15	<b>3</b>	2	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

Silicon	ppm	ASTM D5185m	>25	<b>9</b>	12	---
Potassium	ppm	ASTM D5185m	>20	<b>▲ 678</b>	▲ 306	---
Fuel	%	ASTM D3524	>5	<b>▲ 2.7</b>	▲ 7.1	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol	%	*ASTM D2982		<b>▲ 0.12</b>	▲ 0.10	---
Soot %	%	*ASTM D7844	>3	<b>0.8</b>	0.4	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>▲ 61.3</b>	13.2	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>0.0</b>	21.0	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

Sodium	ppm	ASTM D5185m		<b>● 635</b>	▲ 376	---
Boron	ppm	ASTM D5185m		<b>108</b>	9	---
Barium	ppm	ASTM D5185m		<b>2</b>	0	---
Molybdenum	ppm	ASTM D5185m		<b>72</b>	89	---
Manganese	ppm	ASTM D5185m		<b>5</b>	1	---
Magnesium	ppm	ASTM D5185m		<b>306</b>	931	---
Calcium	ppm	ASTM D5185m		<b>● 567</b>	1152	---
Phosphorus	ppm	ASTM D5185m		<b>● 525</b>	1058	---
Zinc	ppm	ASTM D5185m		<b>910</b>	1257	---
Sulfur	ppm	ASTM D5185m		<b>2265</b>	3054	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>▲ 51.7</b>	17.1	---
Base Number (BN)	mg KOH/g	ASTM D2896		<b>75.6</b>	10.0	---
Visc @ 100°C	cSt	ASTM D445		<b>▲ 33.7</b>	▲ 11.6	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0209466  
**Lab Number** : 06155622  
**Unique Number** : 10991045  
**Test Package** : CONST ( Additional Tests: FuelDilution, Glycol, PercentFuel, TBN )

**JRE - GARNER**  
 4161 AUBURN CHURCH RD  
 GARNER, NC  
 US 27529

Contact: RALEIGH SHOP  
 sean.betts@jamesriverequipment.com; catherine.anastasio@wearcheck.com

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)

T: (919)614-2260

F: (919)779-5432