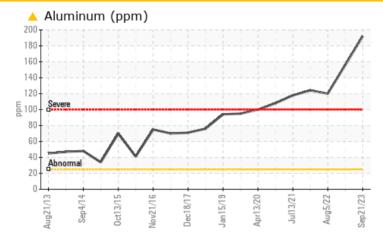


# **PROBLEM SUMMARY**

### Area **LINE 7** Machine Id **[LINE 7] L7 WRAPPER 1 L7 WRAPPER 1** Component **Gearbox** Fluid **NOT GIVEN (--- GAL)**

# COMPONENT CONDITION SUMMARY



## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC	C TEST	<b>FRESULT</b>	S			
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Aluminum	ppm	ASTM D5185m	>25	<u> </u>	<b>1</b> 56	<b>1</b> 20

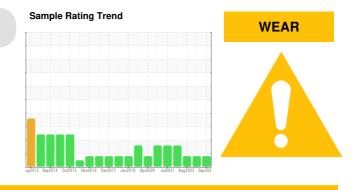
Customer Id: HERHER Sample No.: PCA0103730 Lab Number: 05966477 Test Package: IND 2



To manage this report scan the QR code

*To discuss the diagnosis or test data:* Don Baldridge +1 <u>don.b505@comcast.net</u>

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com



### **RECOMMENDED ACTIONS**

There are no recommended actions for this sample.

### **HISTORICAL DIAGNOSIS**

#### 28 Feb 2023 Diag: Don Baldridge



No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



#### 05 Aug 2022 Diag: Don Baldridge

No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





#### 31 Jan 2022 Diag: Jonathan Hester

No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other component wear rates are normal. Appearance is milky. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.





# **OIL ANALYSIS REPORT**

# Area LINE 7 Machine Id [LINE 7] L7 WRAPPER 1 L7 WRAPPER 1 Component

Gearbox Fluid NOT GIVEN (--- GAL)

# DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

#### 🔺 Wear

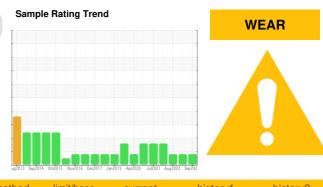
The aluminum level is abnormal. All other component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### **Fluid Condition**

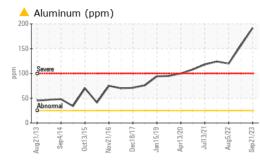
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

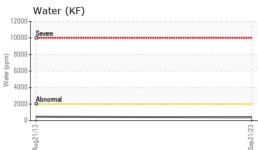


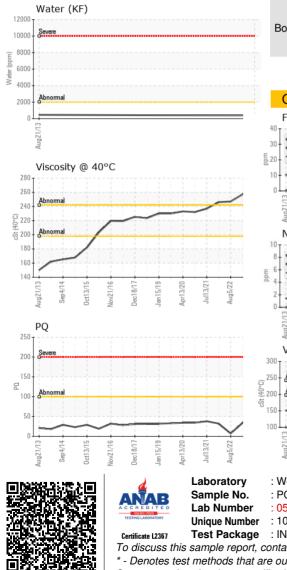
Machine AgehrsClient Info000Oil AgehrsClient InfoN/AN/ANot ChangdSample StatusImit/baseCurrenthistory1history2PQASTM D818444347IronppmASTM D5185m>200363128ChromiumppmASTM D5185m>15<1<1<1NickelppmASTM D5185m>15<1<1<1SilverppmASTM D5185m>251921561<1SilverppmASTM D5185m>251921561<1<1CopperppmASTM D5185m>25192156120<10<10<10<10<101001001001010100101001011010111011110111<	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age     hrs     Client Info     0     0     0       Oil Age     hrs     Client Info     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A     Not Changd       Sample Status     Imit/base     current     history1     history2       PQ     ASTM D8184     44     34     7       Iron     ppm     ASTM D8185     >200     36     31     28       Chromium     ppm     ASTM D5185     >15     0     0     0       Nickel     ppm     ASTM D5185     >15     0     0     0       Aluminum     ppm     ASTM D5185     >15     0     0     0       Aluminum     ppm     ASTM D5185     >25     192     156     120       Lead     ppm     ASTM D5185     >25     192     160     0     0       Antimony     ppm     ASTM D5185     >25     -1     <1	Sample Number		Client Info		PCA0103730	PCA0089753	PCA0075444
Oil Age     hrs     Client Info     0     0     0       Oil Changed     Client Info     N/A     N/A     N/A     Not Changd       Sample Status     Client Info     N/A     ABNORMAL     ABNORMAL     ABNORMAL     ABNORMAL       WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     44     34     7       Iron     ppm     ASTM D5185m     >200     36     31     28       Chromium     ppm     ASTM D5185m     >15     0     0     0       Nickel     ppm     ASTM D5185m     >15     0     0     0       Aluminum     ppm     ASTM D5185m     0     0     0     0       Autinum     ppm     ASTM D5185m     >200     4     4     4       Tin     ppm     ASTM D5185m     >200     4     4     4       Tin     ppm     ASTM D5185m     >200     4     4     4       <	Sample Date		Client Info		21 Sep 2023	28 Feb 2023	05 Aug 2022
Oil Changed Sample Status     Client Info     N/A     N/A     Not Changd ABNORMAL       WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     44     34     7       Iron     ppm     ASTM D8184     44     34     7       Iron     ppm     ASTM D5185m     >200     36     31     28       Chromium     ppm     ASTM D5185m     >15     <1     <1     <1     <1       Nickel     ppm     ASTM D5185m     >15     0     0     0     0       Itanium     ppm     ASTM D5185m     >15     0     0     0     0       Aluminum     ppm     ASTM D5185m     >100     1     <1     10       Copper     ppm     ASTM D5185m     >200     4     4     4       Antimony     ppm     ASTM D5185m     >20     1     <1     0       Antimony     ppm     ASTM D5185m     25	Machine Age	hrs	Client Info		0	0	0
Sample Status     Imathod     Imit/base     Current     Mistory1     Mistory2       PQ     ASTM D8184     44     34     7       Iron     ppm     ASTM D8186     >200     36     31     28       Chronium     ppm     ASTM D5185m     >15     <1	Oil Age	hrs	Client Info		0	0	0
WEAR METALS     method     limit/base     current     history1     history2       PQ     ASTM D8184     44     34     7       Iron     ppm     ASTM D8185     >200     36     31     28       Chromium     ppm     ASTM D5185m     >15     <1	Oil Changed		Client Info		N/A	N/A	Not Changd
PQ     ASTM D8184     44     34     7       Iron     ppm     ASTM D5185m     >200     36     31     28       Chromium     ppm     ASTM D5185m     >15     <1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron     ppm     ASTM D5185m     >200     36     31     28       Chromium     ppm     ASTM D5185m     >15     <1     <1     <1       Nickel     ppm     ASTM D5185m     >15     0     0     0       Titanium     ppm     ASTM D5185m     <1     <1     <1     <1       Silver     ppm     ASTM D5185m     >25     ▲192     ▲156     ▲120       Lead     ppm     ASTM D5185m     >200     4     4     4       Tin     ppm     ASTM D5185m     >200     4     4     4       Lead     ppm     ASTM D5185m     >200     4     4     4       Tin     ppm     ASTM D5185m     >5          Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     5     5     5	WEAR METALS	6	method	limit/base	current	history1	history2
Chromium     ppm     ASTM D5185m     >15     <1     <1     <1     <1       Nickel     ppm     ASTM D5185m     >15     0     0     0       Titanium     ppm     ASTM D5185m     <1	PQ		ASTM D8184		44	34	7
Nickel     ppm     ASTM D5185m     >15     0     0     0       Titanium     ppm     ASTM D5185m     <1	Iron	ppm	ASTM D5185m	>200	36	31	28
Titanium   ppm   ASTM D5185m   <1   <1   <1   <1     Silver   ppm   ASTM D5185m   >25   ▲   192   ▲   156   ▲   120     Aluminum   ppm   ASTM D5185m   >25   ▲   192   ▲   156   ▲   120     Lead   ppm   ASTM D5185m   >200   4   4   4     Tin   ppm   ASTM D5185m   >200   4   4   4     Antimony   ppm   ASTM D5185m   0   0   0   0     Cadmium   ppm   ASTM D5185m   0   0   0   0     Boron   ppm   ASTM D5185m   0   0   0   0     Molybdenum   ppm   ASTM D5185m   0   0   0   0   0   11	Chromium	ppm	ASTM D5185m	>15	<1	<1	<1
Silver     ppm     ASTM D5185m     0     0     0       Aluminum     ppm     ASTM D5185m     >25     192     156     120       Lead     ppm     ASTM D5185m     >100     1     <1	Nickel	ppm	ASTM D5185m	>15	0	0	0
Aluminum   ppm   ASTM D5185m   >25   ▲ 192   ▲ 156   ▲ 120     Lead   ppm   ASTM D5185m   >100   1   <1	Titanium	ppm	ASTM D5185m		<1	<1	<1
Lead     ppm     ASTM D5185m     >100     1     <1     0       Copper     ppm     ASTM D5185m     >200     4     4     4       Tin     ppm     ASTM D5185m     >25     <1	Silver	ppm	ASTM D5185m		0	0	0
Copper     ppm     ASTM D5185m     >200     4     4     4       Tin     ppm     ASTM D5185m     >25     <1	Aluminum	ppm	ASTM D5185m	>25	<b>192</b>	<b>1</b> 56	<b>1</b> 20
Tin     ppm     ASTM D5185m     >25     <1     <1     0       Antimony     ppm     ASTM D5185m     >5          Vanadium     ppm     ASTM D5185m     >5          Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     5     5     5     5       Calcium     ppm     ASTM D5185m     554     494     528       Zinc     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     50     37     30     30 <tr< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;100</td><th>1</th><td>&lt;1</td><td>0</td></tr<>	Lead	ppm	ASTM D5185m	>100	1	<1	0
Antimony     ppm     ASTM D5185m     >5          Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     5     5     5     5       Calcium     ppm     ASTM D5185m     554     494     528       Zinc     ppm     ASTM D5185m     554     494     528       Sulfur     ppm     ASTM D5185m     554     1169     970     785       Sulfur     ppm     ASTM D5185m     >50     37     30     30     30<	Copper	ppm	ASTM D5185m	>200	4	4	4
Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0     0       Magnesium     ppm     ASTM D5185m     5     5     5     5       Calcium     ppm     ASTM D5185m     2579     2233     1878       Phosphorus     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     20     37     30	Tin	ppm	ASTM D5185m	>25	<1	<1	0
CadmiumppmASTM D5185m000ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m000BariumppmASTM D5185m01118MolybdenumppmASTM D5185m000ManganeseppmASTM D5185m000MangesiumppmASTM D5185m555CalciumppmASTM D5185m554494528PhosphorusppmASTM D5185m1169970785SulfurppmASTM D5185m1257711711152CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m373030SodiumppmASTM D5185m>20<1	Antimony	ppm	ASTM D5185m	>5			
ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m000BariumppmASTM D5185m0118MolybdenumppmASTM D5185m000ManganeseppmASTM D5185m000MagnesiumppmASTM D5185m555CalciumppmASTM D5185m555CalciumppmASTM D5185m554494528ZincppmASTM D5185m1169970785SulfurppmASTM D5185m125711711152CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m373030SodiumppmASTM D5185m>20<1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron     ppm     ASTM D5185m     0     0     0       Barium     ppm     ASTM D5185m     0     11     8       Molybdenum     ppm     ASTM D5185m     0     0     0       Manganese     ppm     ASTM D5185m     0     0     0       Magnesium     ppm     ASTM D5185m     <1	Cadmium	ppm	ASTM D5185m		0	0	0
Barium     ppm     ASTM D5185m     0     11     8       Molybdenum     ppm     ASTM D5185m     0     0     0       Manganese     ppm     ASTM D5185m     c1     <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     0     0     0       Manganese     ppm     ASTM D5185m     <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese     ppm     ASTM D5185m     <1     <1     <1       Magnesium     ppm     ASTM D5185m     5     5     5       Calcium     ppm     ASTM D5185m     2579     2233     1878       Phosphorus     ppm     ASTM D5185m     2554     494     528       Zinc     ppm     ASTM D5185m     554     494     528       Zinc     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     1257     1171     1152       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     37     30     30       Sodium     ppm     ASTM D5185m     >20     <1	Barium	ppm	ASTM D5185m		0	11	8
Magnesium     ppm     ASTM D5185m     5     5       Calcium     ppm     ASTM D5185m     2579     2233     1878       Phosphorus     ppm     ASTM D5185m     554     494     528       Zinc     ppm     ASTM D5185m     554     494     528       Sulfur     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     1257     1171     1152       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     37     30     30       Sodium     ppm     ASTM D5185m     >20     <1	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium     ppm     ASTM D5185m     2579     2233     1878       Phosphorus     ppm     ASTM D5185m     554     494     528       Zinc     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     1257     1171     1152       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     37     30     30       Sodium     ppm     ASTM D5185m     >20     <1	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus     ppm     ASTM D5185m     554     494     528       Zinc     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     1257     1171     1152       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     37     30     30       Sodium     ppm     ASTM D5185m     >20     <1     2     0       Potassium     ppm     ASTM D6304     >0.2     0.038         ppm Water     ppm     ASTM D6304     >200     380         FLUID DEGRADATION     method     limit/base     current     history1     history2	Magnesium	ppm	ASTM D5185m		5	5	5
Zinc     ppm     ASTM D5185m     1169     970     785       Sulfur     ppm     ASTM D5185m     1257     1171     1152       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     37     30     30       Sodium     ppm     ASTM D5185m     >20     31     0     <1	Calcium	ppm	ASTM D5185m		2579	2233	1878
SulfurppmASTM D5185m125711711152CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50373030SodiumppmASTM D5185m>20310<1	Phosphorus	ppm	ASTM D5185m		554	494	528
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>50 <b>37</b> 3030SodiumppmASTM D5185m>20 <b>3</b> 0<1	Zinc	ppm	ASTM D5185m		1169	970	785
Silicon     ppm     ASTM D5185m     >50 <b>37</b> 30     30       Sodium     ppm     ASTM D5185m     >50 <b>37</b> 30     30        Potassium     ppm     ASTM D5185m     >20     <1     2     0       Water     %     ASTM D6304     >0.2 <b>0.038</b> ppm Water     ppm     ASTM D6304     >2000 <b>380</b> FLUID DEGRADATION     method     limit/base     current     history1     history2	Sulfur	ppm	ASTM D5185m		1257	1171	1152
SodiumppmASTM D5185m30<1	CONTAMINAN	ΓS	method	limit/base	current	history1	history2
Potassium     ppm     ASTM D5185m     >20     <1     2     0       Water     %     ASTM D6304     >0.2     0.038         ppm Water     ppm     ASTM D6304     >2000     380         FLUID DEGRADATION     method     limit/base     current     history1     history2	Silicon	ppm	ASTM D5185m	>50	37	30	30
Water     %     ASTM D6304     >0.2     0.038         ppm Water     ppm     ASTM D6304     >2000     380         FLUID DEGRADATION     method     limit/base     current     history1     history2	Sodium	ppm	ASTM D5185m		3	0	<1
ppm Water     ppm     ASTM D6304     >2000 <b>380</b> FLUID DEGRADATION     method     limit/base     current     history1     history2	Potassium	ppm	ASTM D5185m	>20	<1	2	0
FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.2	0.038		
	ppm Water	ppm	ASTM D6304	>2000	380		
Acid Number (AN)     mg KOH/g     ASTM D8045     0.96     0.12     0.402	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.96	0.12	0.402



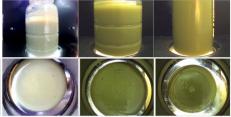
# **OIL ANALYSIS REPORT**



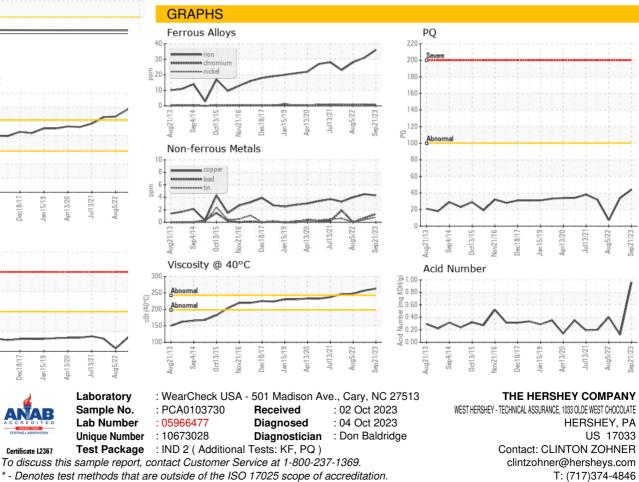




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		263	257	247
SAMPLE IMAG	iES	method	limit/base	current	history1	history2
Color				. 4.		



Bottom



\* - 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)

Contact/Location: CLINTON ZOHNER - HERHER

F: (717)374-4594