

# **PROBLEM SUMMARY**

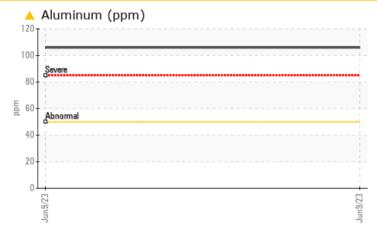
# WEAR

Sample Rating Trend

# CMS PUMP TEST STAND

Transmission (Auto) Fluid ATF (--- GAL)

### COMPONENT CONDITION SUMMARY



### RECOMMENDATION

We recommend that you drain the fluid from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample. We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC TEST RESULTS							
Sample Status				ABNORMAL			
Aluminum	ppm	ASTM D5185m	>50	<u> </u>			
Silt	scalar	*Visual	NONE	🔺 MODER			
Appearance	scalar	*Visual	NORML	🔺 HAZY			
PrtFilter					no image	no image	

Customer Id: PARNEWMN Sample No.: PH0000929 Lab Number: 05876714 Test Package: PLANT



To manage this report scan the QR code

To discuss the diagnosis or test data: Angela Borella +1 800-237-1369 angela.borella@wearcheckusa.com

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

RECOMMENDED AC	CTIONS			
Action	Status	Date	Done By	Description
Change Fluid			?	We recommend that you drain the fluid from the component if this has not already been done.
Resample			?	We recommend an early resample to monitor this condition.
Alert			?	We were unable to perform a particle count due to a high concentration of particles present in this sample.
Information Required			?	Please specify the brand, type, and viscosity of the oil on your next sample. Please specify the component make and model with your next sample.

HISTORICAL DIAGNOSIS



## **OIL ANALYSIS REPORT**

**Emulsified Water** 

Free Water

scalar

scalar \*Visual

\*Visual

>0.1

Sample Rating Trend

**WEAR** 

### Machine Id **CMS PUMP TEST STAND** Component

**Transmission (Auto)** Fluic ATF (--- GAL)

### DIAGNOSIS

### Recommendation

We recommend that you drain the fluid from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample. We were unable to perform a particle count due to a high concentration of particles present in this sample.

### A Wear

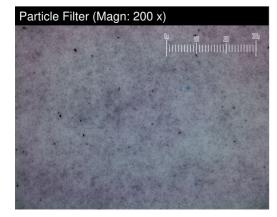
Aluminum ppm levels are abnormal.

### Contamination

There is a moderate amount of visible silt present in the sample.

### Fluid Condition

The AN level is acceptable for this fluid. The fluid is no longer serviceable as a result of the abnormal and/or severe wear.



Report Id: PARNEWMN [WUSCAR] 05876714 (Generated: 10/24/2023 09:46:27) Rev: 1



Iron         ppm         ASTM D5185m         >160         2             Chromium         ppm         ASTM D5185m         >5         0             Nickel         ppm         ASTM D5185m         >5         0             Silver         ppm         ASTM D5185m         >5         0             Auminum         ppm         ASTM D5185m         >50         <106             Lead         ppm         ASTM D5185m         >50         <11             Vanadium         ppm         ASTM D5185m         >10         0	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         0             Oil Age         hrs         Client Info         0              Oil Age         hrs         Client Info         N/A              Sample Status         Client Info         N/A               WEAR METALS         method         limit/base         current         history             WEAR METALS         method         limit/base         current         history             Kindolistism         >5         0                Silver         ppm         ASTM 05185m         >5         0	Sample Number		Client Info		PH0000929		
Machine Age     hrs     Client Info     0         Dil Aga     hrs     Client Info     N/A         Sample Status     I     Imit/base     current     History1        WEAR METALS     method     Imit/base     current     History1        WEAR METALS     method     Imit/base     current     History1        Tron     ppm     ASTM D5185m     >5     0         Trainum     ppm     ASTM D5185m     >5     0         Silver     ppm     ASTM D5185m     >5     0         Trin     ppm     ASTM D5185m     >50          Copper     ppm     ASTM D5185m     >50          ADDITIVES     ppm     ASTM D5185m     >50          Adamium     ppm     ASTM D5185m     >50          Cadmium     ppm     ASTM D5185m     >10     0         ADDITIVES     ppm     ASTM D5185m          Adaganese     ppm     ASTM D5185m	Sample Date		Client Info		09 Jun 2023		
Dil Changed     Client Info     N/A         WEAR METALS     method     limit/base     current     history1     istory1       Vican     ppm     ASTM D5185m     >160     2         Nickel     ppm     ASTM D5185m     >50     0         Silver     ppm     ASTM D5185m     >50     0         Silver     ppm     ASTM D5185m     >50     0         Lead     ppm     ASTM D5185m     >50     <106		hrs	Client Info		0		
Cili Changed         Cilient Info         N/A             WEAR METALS         method         limit/base         current         history1             WEAR METALS         method         limit/base         current         history1             Chromium         ppm         ASTM D5185n         >50         0              Nickel         ppm         ASTM D5185n         >50         0 <td>•</td> <td>hrs</td> <td>Client Info</td> <td></td> <td>0</td> <td></td> <td></td>	•	hrs	Client Info		0		
Sample Status         method         Imit/base         current         history1         history1           WEAR METALS         method         limit/base         current         history1         history1           tron         ppm         ASTM D5185m         >160         2             Silver         ppm         ASTM D5185m         >5         0             Silver         ppm         ASTM D5185m         >5         0             Aluminum         ppm         ASTM D5185m         >50         <1	-		Client Info				
Iron         ppm         ASTM D5185m         >160         2             Chromium         ppm         ASTM D5185m         >5         0             Nickel         ppm         ASTM D5185m         >5         0             Silver         ppm         ASTM D5185m         >5         0             Aduminum         ppm         ASTM D5185m         >50         <106	-				ABNORMAL		
Dr         ASTM D5185m         >5         0             Nickel         ppm         ASTM D5185m         >5         0             Silver         ppm         ASTM D5185m         >5         0             Aluminum         ppm         ASTM D5185m         >50         ▲ 106             Lead         ppm         ASTM D5185m         >50         <11	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >5         0             Titanium         ppm         ASTM D5185m         >5         0             Silver         ppm         ASTM D5185m         >50         4         106             Aluminum         ppm         ASTM D5185m         >50         <1	Iron	ppm	ASTM D5185m	>160	2		
Titanium       ppm       ASTM D5185m       0           Silver       ppm       ASTM D5185m       >5       0           Aluminum       ppm       ASTM D5185m       >50       <1	Chromium	ppm	ASTM D5185m	>5	0		
Silver         ppm         ASTM D5185m         >5         0             Aluminum         ppm         ASTM D5185m         >50         <106	Nickel	ppm	ASTM D5185m	>5	0		
Atuminum         ppm         ASTM D5185m         >50         ▲ 106             Lead         ppm         ASTM D5185m         >50         <1	Titanium	ppm	ASTM D5185m		0		
Lead         ppm         ASTM D5185m         >50         <1             Copper         ppm         ASTM D5185m         >225         5             Vanadium         ppm         ASTM D5185m         >10         0             Addmium         ppm         ASTM D5185m         >10         0             ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         69             Molybdenum         ppm         ASTM D5185m         6             Magnesium         ppm         ASTM D5185m         6             Zalcium         ppm         ASTM D5185m         6	Silver	ppm	ASTM D5185m	>5	0		
Lead         ppm         ASTM D5185m         >50         <1	Aluminum	ppm	ASTM D5185m	>50	<u> </u>		
Copper         ppm         ASTM D5185m         >225         5             Vanadium         ppm         ASTM D5185m         >10         0             Admium         ppm         ASTM D5185m         >10         0             ADDITIVES         method         limit/base         current         history1         history1           Boron         ppm         ASTM D5185m         69             Molybdenum         ppm         ASTM D5185m         6             Maganese         ppm         ASTM D5185m         6             Magnesium         ppm         ASTM D5185m         33	Lead			>50	<1		
TinppmASTM D5185m<>100VanadiumppmASTM D5185m0CadmiumppmASTM D5185m0ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m69BariumppmASTM D5185m6MolybdenumppmASTM D5185m6MaganeseppmASTM D5185m6MagnesiumppmASTM D5185m33ZalciumppmASTM D5185m175PhosphorusppmASTM D5185m175SulfurppmASTM D5185m918SoliumppmASTM D5185m918SoliumppmASTM D5185m>2016FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2VisualNONE0.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEVisualNONENONESiltscalar*VisualNONENONESiltscalar*VisualNONENONE							
Vanadium       ppm       ASTM D5185m       0           ADDITIVES       method       limit/base       current       history1       history2         Boron       ppm       ASTM D5185m       69           Boron       ppm       ASTM D5185m       69           Barium       ppm       ASTM D5185m       69           Magnesium       ppm       ASTM D5185m       61           Vagnesium       ppm       ASTM D5185m       33           Calcium       ppm       ASTM D5185m       46           Sulfur       ppm       ASTM D5185m       175           Sulfur       ppm       ASTM D5185m       918           Soliton       ppm       ASTM D5185m       >20       16		• •					
CadmiumppmASTM D5185m0ADDITIVESmethodlimit/basecurrenthistory1history1BoronppmASTM D5185m69BariumppmASTM D5185m0MolybdenumppmASTM D5185m6ManganeseppmASTM D5185m6MagnesiumppmASTM D5185m33CalciumppmASTM D5185m175PhosphorusppmASTM D5185m175SulfurppmASTM D5185m918SulfurppmASTM D5185m918SodiumppmASTM D5185m2016PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2VISUALmethodlimit/basecurrenthistory1history2VISUALscalar*VisualNONEVISUALscalar*VisualNONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONENONESiltscalar*VisualNONENONESiltscalar*VisualNONENO				-	-		
ADDITIVES         method         limit/base         current         history1         history3           Boron         ppm         ASTM D5185m         69					-		
Boron ppm ASTM D5185m 69 Barium ppm ASTM D5185m 6 Molybdenum ppm ASTM D5185m 6 Manganese ppm ASTM D5185m 6 Magnesium ppm ASTM D5185m 33 Calcium ppm ASTM D5185m 46 Phosphorus ppm ASTM D5185m 175 Zinc ppm ASTM D5185m 175 Zinc ppm ASTM D5185m 918 Sulfur ppm ASTM D5185m 918 Sulfur ppm ASTM D5185m 0 Sulfur ppm ASTM D5185m 0 FUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOHg ASTM D5185m >20 16 FLUID DEGRADATION method limit/base current history1 history2 Acid Number (AN) mg KOHg ASTM D8045 0.51 VISUAL method limit/base current history1 history2 Acid Number (AN) mg KOHg ASTM D8045 0.51 Precipitate scalar *Visual NONE NONE Silit scalar *Visual NONE NONE Silit scalar *Visual NONE NONE Sadada *Visual NONE NONE Sadada *Visual NONE NONE		ppiii					
BariumppmASTM D5185m0MolybdenumppmASTM D5185m6ManganeseppmASTM D5185m33MagnesiumppmASTM D5185m33CalciumppmASTM D5185m175CalciumppmASTM D5185m175PhosphorusppmASTM D5185m918SulfurppmASTM D5185m918SulfurppmASTM D5185m>2016SoliumppmASTM D5185m>201PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history1Acid Number (AN)mg KOHgASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2VisualNONENONEPrecipitatescalar*VisualNONENONESilitscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNONENONEAppearancescalar*VisualNONEASONEAstrScalar<	ADDITIVES		method	limit/base	current	history1	history2
MolybdenumppmASTM D5185m6ManganeseppmASTM D5185m<1	Boron	ppm	ASTM D5185m		69		
Manganese       ppm       ASTM D5185m       <1	Barium	ppm	ASTM D5185m		0		
MagnesiumppmASTM D5185m33CalciumppmASTM D5185m46PhosphorusppmASTM D5185m175ZincppmASTM D5185m43SulfurppmASTM D5185m918CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2016SodiumppmASTM D5185m>201PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOHgASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiltscalar*VisualNONENONESiltscalar*VisualNONENONEDebrisscalar*VisualNONENONEAppearancescalar*VisualNONENONEAppearancescalar*VisualNORMLHAZY	Molybdenum	ppm	ASTM D5185m		6		
CalciumppmASTM D5185m46PhosphorusppmASTM D5185m175ZincppmASTM D5185m43SulfurppmASTM D5185m918CONTAMINANTSmethodlimit/basecurrenthistory1history1SiliconppmASTM D5185m>2016SodiumppmASTM D5185m>201PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOHgASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiltscalar*VisualNONENONEDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLA HAZY	Manganese	ppm	ASTM D5185m		<1		
PhosphorusppmASTM D5185m175ZincppmASTM D5185m43SulfurppmASTM D5185m918CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2016SodiumppmASTM D5185m>201PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOHgASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONEMODERSand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNONEAMDER	Magnesium	ppm	ASTM D5185m		33		
ZincppmASTM D5185m43SulfurppmASTM D5185m918CONTAMINANTSmethodlimit/basecurrenthistory1history1SiliconppmASTM D5185m>2016SodiumppmASTM D5185m>2016PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOHgASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONENONEDebrisscalar*VisualNONENONEAppearancescalar*VisualNONENONEAppearancescalar*VisualNONEADDEAppearancescalar*VisualNORML <b>ADDE</b> Appearancescalar*VisualNORML <b>ADDE</b> Appearancescalar*VisualNORML <b>ADDE</b> Appearancescalar*VisualNORML <b>ADDE</b> <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>46</td> <td></td> <td></td>	Calcium	ppm	ASTM D5185m		46		
SulfurppmASTM D5185m918CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2016SodiumppmASTM D5185m>201PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOH/gASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONEMODERSiltscalar*VisualNONEMODERSand/Dirtscalar*VisualNONEANDEAppearancescalar*VisualNONEANDE	Phosphorus	ppm	ASTM D5185m		175		
CONTAMINANTSmethodlimit/basecurrenthistory1history1SiliconppmASTM D5185m>2016SodiumppmASTM D5185m0PotassiumppmASTM D5185m>201FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2Acid Number (AN)mg KOH/gASTM D80450.51VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiltscalar*VisualNONEMODERDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORML <b>MADER</b>	Zinc	ppm	ASTM D5185m		43		
Silicon       ppm       ASTM D5185m       >20       16           Sodium       ppm       ASTM D5185m       0            Potassium       ppm       ASTM D5185m       >20       1           FLUID DEGRADATION       method       limit/base       current       history1       history2         Acid Number (AN)       mg KOH/g       ASTM D8045       0.51           VISUAL       method       limit/base       current       history1       history2         White Metal       scalar       *Visual       NONE       NONE           Yellow Metal       scalar       *Visual       NONE       NONE           Silt       scalar       *Visual       NONE       MODER           Silt       scalar       *Visual       NONE            Debris       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NONE	Sulfur	ppm	ASTM D5185m		918		
Sodium       ppm       ASTM D5185m       0           Potassium       ppm       ASTM D5185m<>20       1           FLUID DEGRADATION       method       limit/base       current       history1       history1         Acid Number (AN)       mg KOH/g       ASTM D8045       0.51           VISUAL       method       limit/base       current       history1       history2         White Metal       scalar       *Visual       NONE       NONE           Yellow Metal       scalar       *Visual       NONE       NONE           Silt       scalar       *Visual       NONE       MODER           Second/Dirt       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NONE       NONE            Appearance       scalar       *Visual       NONE       NONE            Appearance       scalar       *Visual       NORML       A HAZY	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium       ppm       ASTM D5185m       >20       1           FLUID DEGRADATION       method       limit/base       current       history1       history2         Acid Number (AN)       mg KOH/g       ASTM D8045       0.51           VISUAL       method       limit/base       current       history1       history2         White Metal       scalar       *Visual       NONE       NONE           Yellow Metal       scalar       *Visual       NONE       NONE           Silt       scalar       *Visual       NONE       MODER           Debris       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NONE       NONE           Moder       scalar       *Visual       NONE            Start       scalar       *Visual       NONE       NONE           Moder       scalar       *Visual       NONE       NONE           Mappearance       scalar <td>Silicon</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;20</td> <td>16</td> <td></td> <td></td>	Silicon	ppm	ASTM D5185m	>20	16		
FLUID DEGRADATIONmethodlimit/basecurrenthistory1history1Acid Number (AN)mg KOH/gASTM D80450.51VISUALmethodlimit/basecurrenthistory1history1White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONEMODERSiltscalar*VisualNONEMODERDebrisscalar*VisualNONENONEAppearancescalar*VisualNORMLAZY	Sodium	ppm	ASTM D5185m		0		
Acid Number (AN)mg KOH/gASTM D80450.51VISUALmethodlimit/basecurrenthistory1history1White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONEMODERDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORML <b>AZY</b>	Potassium	ppm	ASTM D5185m	>20	1		
VISUALmethodlimit/basecurrenthistory1history2White Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONEMODERDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLA HAZY	FLUID DEGRADAT	TION	method	limit/base	current	history1	history2
White Metal       scalar       *Visual       NONE       NONE           Yellow Metal       scalar       *Visual       NONE       NONE           Precipitate       scalar       *Visual       NONE       NONE           Silt       scalar       *Visual       NONE       MODER           Debris       scalar       *Visual       NONE       NONE           Sand/Dirt       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NORML       AZY	Acid Number (AN)	mg KOH/g	ASTM D8045		0.51		
Yellow Metalscalar*VisualNONENONEPrecipitatescalar*VisualNONENONESiltscalar*VisualNONEMODERDebrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLATAZY	VISUAL		method	limit/base	current	history1	history2
Precipitatescalar*VisualNONENONESiltscalar*VisualNONE <b>MODER</b> Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORML <b>HAZY</b>	White Metal	scalar	*Visual	NONE	NONE		
Silt       scalar       *Visual       NONE       MODER           Debris       scalar       *Visual       NONE       NONE           Sand/Dirt       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NORML       HAZY	Yellow Metal	scalar	*Visual	NONE	NONE		
Debrisscalar*VisualNONENONESand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLHAZY	Precipitate	scalar	*Visual	NONE	NONE		
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMLA HAZY	Silt	scalar	*Visual	NONE			
Appearance scalar *Visual NORML A HAZY	Debris	scalar	*Visual	NONE	NONE		
Appearance scalar *Visual NORML A HAZY	Sand/Dirt	scalar	*Visual	NONE	NONE		
	Appearance			NORML			
	Odor	scalar	*Visual	NORML	NORML		

NEG

NEG

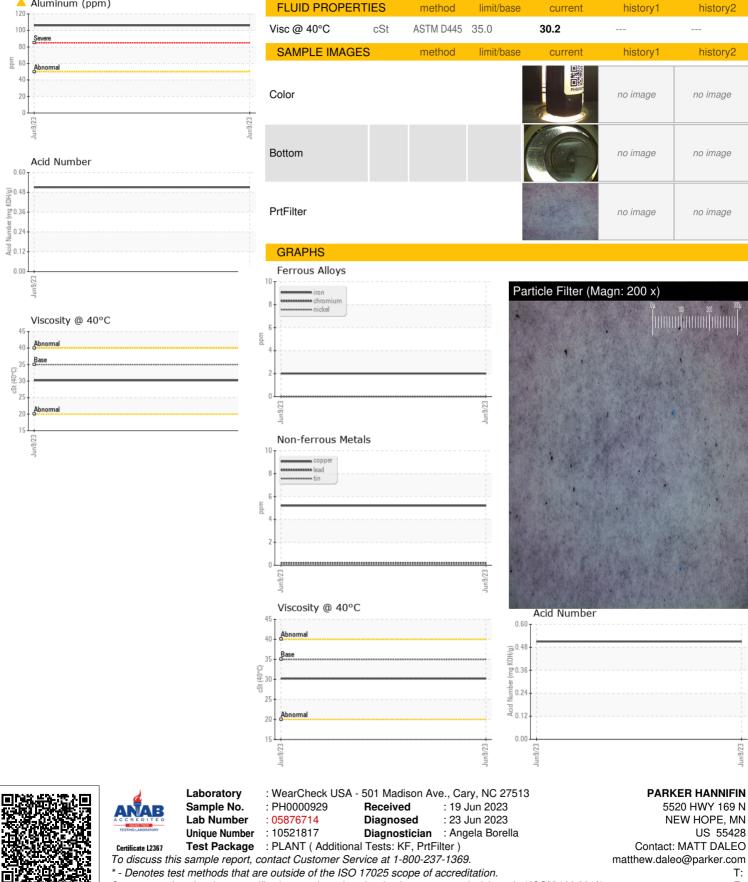
Submitted By: MATT DALEO

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🔺 Aluminum (ppm)

# **OIL ANALYSIS REPORT**



\* - 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:

F: