**WEAR** CONTAMINATION **FLUID CONDITION** 

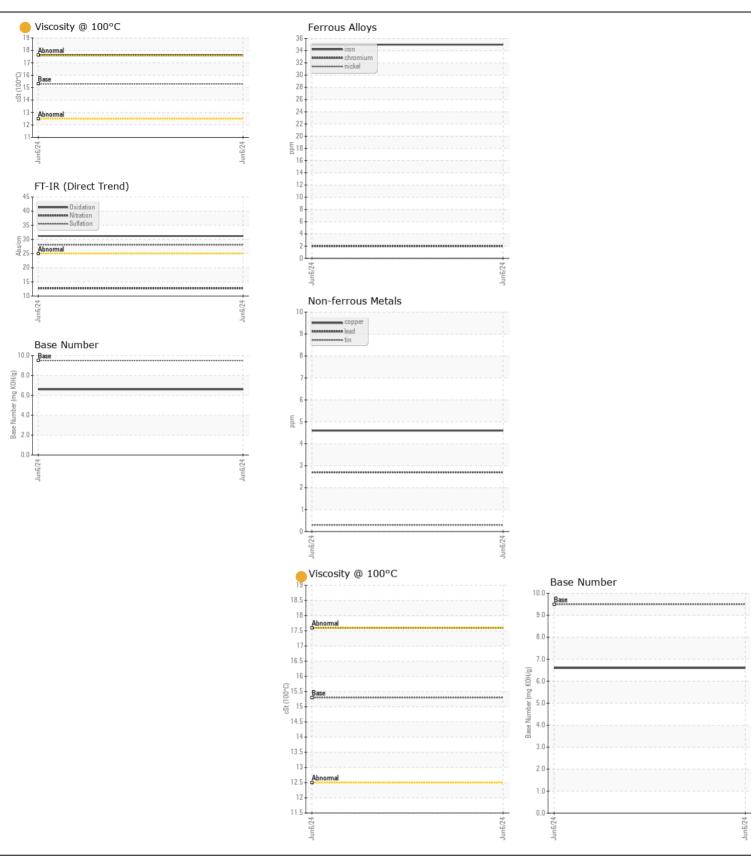
**NORMAL NORMAL ATTENTION** 

Machine Id

## **CUMMINS BARBARA ANN**

Genset

Sample Number   Client Info   Sample Resource   Client Info   Client Info   Sample Number   Client Info   Client Info   Get University   Get University   Client Info   Get University   G	KENDALL SUPER-D XA 15W40 ( GAL)							
Sample Date   Client Info   08 Jun 2024	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
### A Price of Control Info		Sample Number		Client Info		HRE0000254		
Machine Age   hrs   Client Info   500	at the next service interval to monitor.	Sample Date		Client Info		06 Jun 2024		
Filter Age		Machine Age	hrs	Client Info		4801		
Oil Changed   Client Info   Clie		Oil Age	hrs	Client Info		500		
Filter Changed   Sample Status		Filter Age	hrs	Client Info		500		
NEAR   Iron		Oil Changed		Client Info		Changed		
Iron		Filter Changed		Client Info		Changed		
All component wear rates are normal.    Chromium   ppm   ASTM D5165m   >2   2         Titanium   ppm   ASTM D5165m   >2   0         Sliver   ppm   ASTM D5165m   >5   0         Aluminum   ppm   ASTM D5165m   >12   4         Aluminum   ppm   ASTM D5165m   >17   3         Copper   ppm   ASTM D5165m   >17   3         Copper   ppm   ASTM D5165m   >17   3         Tin   ppm   ASTM D5165m   >17   3           Tin   ppm   ASTM D5165m   >17   3           Validow Metal   scalar   Visual   NONE   NONE           Validow Metal   Scalar   Visual   NONE   NONE           Validow Metal   Scalar   Visual   NONE   NONE           Validow Metal   Scalar   Visual   NONE   NONE		Sample Status				ATTENTION		
All component wear rates are normal.    Chromium   ppm   ASTM D5165m   >2   2         Titanium   ppm   ASTM D5165m   >2   0         Sliver   ppm   ASTM D5165m   >5   0         Aluminum   ppm   ASTM D5165m   >12   4         Aluminum   ppm   ASTM D5165m   >17   3         Copper   ppm   ASTM D5165m   >17   3         Copper   ppm   ASTM D5165m   >17   3         Tin   ppm   ASTM D5165m   >17   3           Tin   ppm   ASTM D5165m   >17   3           Validow Metal   scalar   Visual   NONE   NONE           Validow Metal   Scalar   Visual   NONE   NONE           Validow Metal   Scalar   Visual   NONE   NONE           Validow Metal   Scalar   Visual   NONE   NONE	WEAR	Iron	nnm	ASTM D5185m	>50	35		
Nickel   ppm   ASTM 05185n   22   0	WLAN							
Titanium   ppm   ASTM 05185m   12	All component wear rates are normal.							
Silver   ppm   ASTM D5185m   >5   0         Aluminum   ppm   ASTM D5185m   >12   2   4         Lead   ppm   ASTM D5185m   >17   3       Copper   ppm   ASTM D5185m   >70   5       Tin   ppm   ASTM D5185m   >70   5       Vanadium   ppm   ASTM D5185m   >70   5       Vanadium   ppm   ASTM D5185m   >15   <1       Vanadium   ppm   ASTM D5185m   >20   3       Valow Metal   scalar   *Visual   NONE   NONE   NONE       Vanadium   ppm   ASTM D5185m   >20   3       Fuel   WC Method   >4   0   <1,0       Water   WC Method   >4   0   <1,0       Glycol   WC Method   NEG       Solf   Solf   %   %   *ASTM D784   >0   1,0       Sulfation   Assim   *ASTM D784   >0   12,7       Sulfation   Assim   *ASTM D784   >0   12,7       Sulfation   Assim   *ASTM D784   >0   12,7       Sand/Dirt   scalar   *Visual   NONE   NONE       Appearance   Scalar   *Visual   NONE					>2			
Aluminum   ppm   ASTM D5185m   >12   4					_			
Lead								
Copper								
Time								
Vanadium   ppm   ASTM 05185m   <1								
White Metal   Scalar   Visual   NONE   NON					>15			
Silicon   ppm   ASTM D5185m   >25   6					NONE			
Silicon   ppm   ASTM D5185m   >25   6						_		
Potassium   ppm   ASTM D5185m   20   3		Yellow Metal	scalar	*Visual	NONE	NONE		
Fuel   WC Method   Solid   WC Method   NEG   W	CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	6		
Water	There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m	>20	3		
Glycol		Fuel		WC Method	>4.0	<1.0		
Soot %		Water		WC Method	>0.1	NEG		
Nitration		Glycol		WC Method		NEG		
Sulfation   Abs/.1mm   *ASTM D7415   >30   28.1         Silt   scalar   *Visual   NONE   NONE         Debris   scalar   *Visual   NONE   NONE   NONE         Sand/Dirt   scalar   *Visual   NONE   NONE   NONE         Appearance   scalar   *Visual   NORML		Soot %	%	*ASTM D7844		0.1		
Silt   scalar   *Visual   NONE   NONE   NONE   NONE   Sand/Dirt   scalar   *Visual   NONE   NORML		Nitration	Abs/cm	*ASTM D7624	>20	12.7		
Debris   Scalar   *Visual   NONE   NONE   Sand/Dirt   Scalar   *Visual   NORML   NORML   NORML   Scalar   *Visual   NORML   NORML   NORML   Scalar   *Visual   Scalar   *Visual   NORML   NORML   Scalar   *Visual   Scala		Sulfation	Abs/.1mm	*ASTM D7415	>30	28.1		
Sand/Dirt   Scalar   *Visual   NONE   NONE       NONE   Appearance   Scalar   *Visual   NORML   NORM		Silt	scalar	*Visual	NONE	NONE		
Appearance   Scalar   *Visual   NORML   NORML   NORML   Emulsified Water   Scalar   *Visual   NORML   NORML   NORML   NORML   Emulsified Water   Scalar   *Visual   NORML		Debris	scalar	*Visual	NONE	NONE		
Codor   Scalar   *Visual   NORML   N		Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water   scalar   *Visual   >0.1   NEG		Appearance	scalar	*Visual	NORML	NORML		
Sodium   ppm   ASTM D5185m   2		Odor	scalar	*Visual	NORML	NORML		
Boron   ppm   ASTM D5185m   50   28		<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG		
Boron   ppm   ASTM D5185m   50   28	TI LUD CONDITION	Ca allinua		ACTA DE10E				
The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.    Barium   ppm   ASTM D5185m   48         Molybdenum   ppm   ASTM D5185m   48         Magnesium   ppm   ASTM D5185m   270   714         Calcium   ppm   ASTM D5185m   1900   2359         Phosphorus   ppm   ASTM D5185m   1000   1187         Zinc   ppm   ASTM D5185m   1260   1518         Sulfur   ppm   ASTM D5185m   3400   5942         Oxidation   Abs/.1mm *ASTM D7414   >25   31.2         Base Number (BN)   mg KOH/g   ASTM D2896   9.5   6.66	FLUID CONDITION				F0			
there is suitable alkalinity remaining in the oil.    Molybdenum   ppm   ASTM D5185m   48         Magnesium   ppm   ASTM D5185m   270   714         Calcium   ppm   ASTM D5185m   1900   2359         Phosphorus   ppm   ASTM D5185m   1000   1187         Zinc   ppm   ASTM D5185m   1260   1518         Sulfur   ppm   ASTM D5185m   3400   5942         Oxidation   Abs/.1mm   *ASTM D7414   >25   31.2         Base Number (BN)   mg KOH/g   ASTM D2896   9.5   6.66	The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.				50			
Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         270         714             Calcium         ppm         ASTM D5185m         1900         2359             Phosphorus         ppm         ASTM D5185m         1000         1187             Zinc         ppm         ASTM D5185m         1260         1518             Sulfur         ppm         ASTM D5185m         3400         5942             Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6								
Magnesium         ppm         ASTM D5185m         270         714             Calcium         ppm         ASTM D5185m         1900         2359             Phosphorus         ppm         ASTM D5185m         1000         1187             Zinc         ppm         ASTM D5185m         1260         1518             Sulfur         ppm         ASTM D5185m         3400         5942             Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6		-						
Calcium         ppm         ASTM D5185m         1900         2359             Phosphorus         ppm         ASTM D5185m         1000         1187             Zinc         ppm         ASTM D5185m         1260         1518             Sulfur         ppm         ASTM D5185m         3400         5942             Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6		-			070			
Phosphorus         ppm         ASTM D5185m         1000         1187             Zinc         ppm         ASTM D5185m         1260         1518             Sulfur         ppm         ASTM D5185m         3400         5942             Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6								
Zinc         ppm         ASTM D5185m         1260         1518             Sulfur         ppm         ASTM D5185m         3400         5942             Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6								
Sulfur         ppm         ASTM D5185m         3400         5942             Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6		•						
Oxidation         Abs/.1mm         *ASTM D7414         >25         31.2             Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6								
Base Number (BN)         mg KOH/g         ASTM D2896         9.5         6.6								
Visc @ 100°C cSt ASTM D445 15.3 17.6		( )	0					
		Visc @ 100°C	cSt	ASTM D445	15.3	17.6		







Certificate L2367

Laboratory

Sample No.

Lab Number : 06216464 Unique Number : 11089328 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : HRE0000254 Received : 20 Jun 2024 **Tested** : 22 Jun 2024

Diagnosed : 23 Jun 2024 - Don Baldridge **SUPERIOR MARINE** 201 KELLY LANE CHESAPEAKE, OH

US 45619 Contact: DARRELL KEARNS

To discuss this sample report, contact Customer Service at 1-800-237-1369.

darrellkearns@superiormarineinc.com T:

\* - 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)

F: