

WEAR SEVERE CONTAMINATION NORMAL FLUID CONDITION ATTENTION

Machine Id KIOTI 55587 Component Diesel Engine Fluid KIOTI 15W40 (--- GAL)

RECOMMENDATION

We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

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WEAR

Bearing and/or bushing wear is indicated.

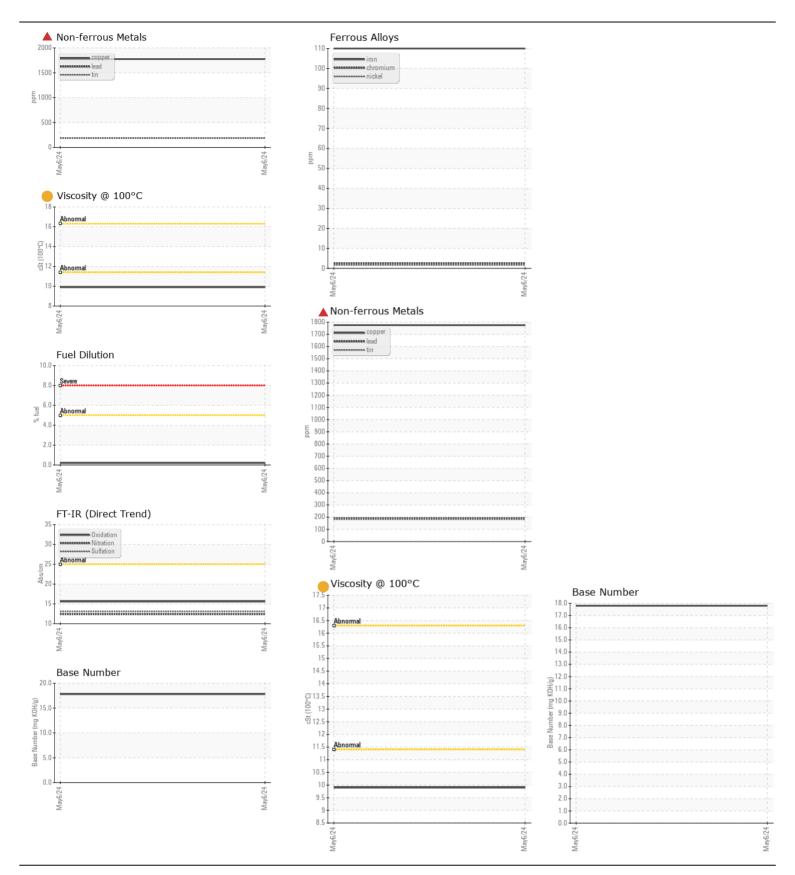
CONTAMINATION

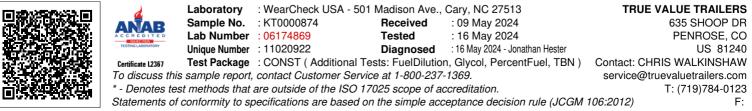
Fuel content negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type. 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		KT0000874		
Sample Date		Client Info		06 May 2024		
Machine Age	hrs	Client Info		321		
Oil Age	hrs	Client Info		121		
Filter Age	hrs	Client Info		121		
Oil Changed		Client Info		Not Changd		
Filter Changed		Client Info		Not Changd		
Sample Status				SEVERE		
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Iron	ppm	ASTM D5185m	>100	110		
Chromium	ppm	ASTM D5185m	>20	2		
Nickel	ppm	ASTM D5185m	>4	2		
Titanium	ppm	ASTM D5185m		<1		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	9		
Lead	ppm	ASTM D5185m	>40	🔺 188		
Copper	ppm	ASTM D5185m	>330	🔺 1775		
Tin	ppm	ASTM D5185m	>15	183		
Vanadium	ppm	ASTM D5185m		<1		
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Silicon	ppm	ASTM D5185m	>25	20		
Potassium	ppm	ASTM D5185m	>20	3		
Fuel	%	ASTM D3524	>5	0.2		
Water		WC Method	>0.2	NEG		
Glycol	%	*ASTM D2982		NEG		
				-		
Soot %	%	*ASTM D7844	>3	0.6		
Nitration	Abs/cm	*ASTM D7624	>20	0.6 12.4		
Nitration Sulfation	Abs/cm Abs/.1mm	*ASTM D7624 *ASTM D7415	>20 >30	0.6 12.4 13.1		
Nitration Sulfation Silt	Abs/cm Abs/.1mm scalar	*ASTM D7624 *ASTM D7415 *Visual	>20 >30 NONE	0.6 12.4 13.1 NONE		
Nitration Sulfation Silt Debris	Abs/cm Abs/.1mm scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual	>20 >30 NONE NONE	0.6 12.4 13.1 NONE NONE	 	
Nitration Sulfation Silt Debris Sand/Dirt	Abs/cm Abs/.1mm scalar scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual	>20 >30 NONE NONE NONE	0.6 12.4 13.1 NONE NONE NONE	 	
Nitration Sulfation Silt Debris Sand/Dirt Appearance	Abs/cm Abs/.1mm scalar scalar scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual	>20 >30 NONE NONE NONE NORML	0.6 12.4 13.1 NONE NONE NONE NORML	 	
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NONE NORML	 	
Nitration Sulfation Silt Debris Sand/Dirt Appearance	Abs/cm Abs/.1mm scalar scalar scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual	>20 >30 NONE NONE NONE NORML	0.6 12.4 13.1 NONE NONE NONE NORML	 	
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORE NORML NORML NEG		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar scalar	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873 1107		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873 1107 1097		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873 1107 1097 1260		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORML NORML >0.2	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873 1107 1097 1260 3389		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Oxidation	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m	>20 >30 NONE NONE NORE NORML	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873 1107 1097 1260 3389 15.6		
Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	Abs/cm Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm ppm	*ASTM D7624 *ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >30 NONE NONE NORML NORML >0.2	0.6 12.4 13.1 NONE NONE NORML NORML NEG 5 69 20 63 3 873 1107 1097 1260 3389		





Contact/Location: CHRIS WALKINSHAW - TRUPEN Page 2 of 2