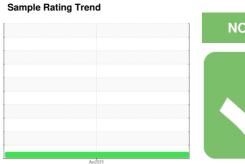


OIL ANALYSIS REPORT







Machine Id 2341 Component

Diesel Engine

ROYAL PURPLE MOTOR OIL 15W40 (--- QT

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

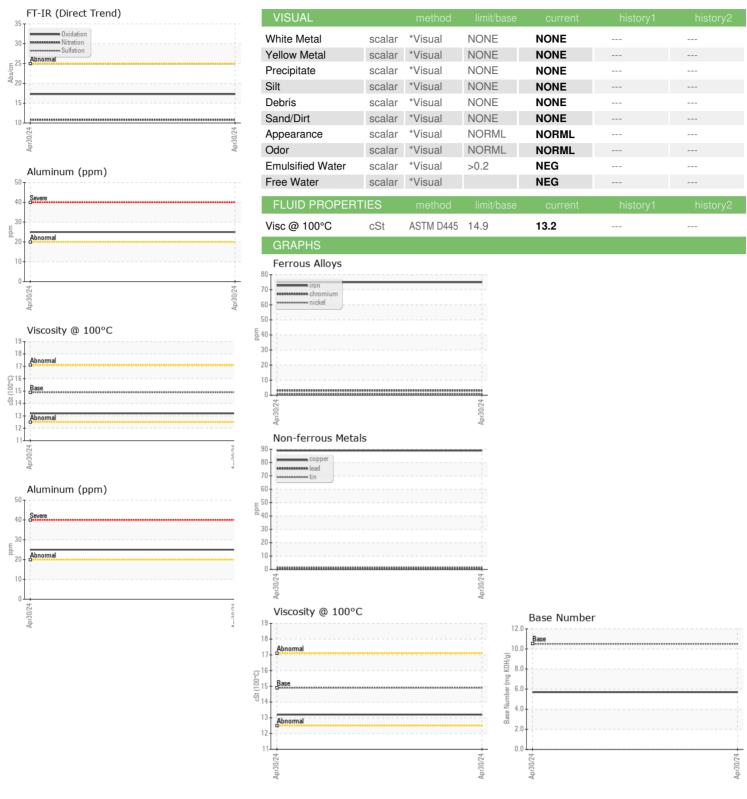
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info WC0720104	S)				Apr2024		
Sample Date Client Info 182179	SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 182179	Sample Number		Client Info		WC0720104		
Oil Age	Sample Date		Client Info		30 Apr 2024		
Contained Cilient Info Not Change Contained	Machine Age	mls	Client Info		182179		
CONTAMINATION	Oil Age	mls	Client Info		50000		
CONTAMINATION	Oil Changed		Client Info		Not Changd		
Water WC Method So. So	Sample Status				NORMAL		
Water Glycol WC Method >0.2 NEG	CONTAMINATION		method	limit/base	current	history1	history2
WEAR METALS	-uel		WC Method	>5	<1.0		
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >100 75	Nater		WC Method	>0.2	NEG		
Description	Glycol		WC Method		NEG		
Description	WEAR METALS		method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>100	75		
Titanium	Chromium	ppm	ASTM D5185m	>20	3		
Silver	Nickel	ppm	ASTM D5185m	>4	<1		
Aluminum	Γitanium	ppm	ASTM D5185m		<1		
Lead	Silver	ppm	ASTM D5185m	>3	0		
Copper ppm ASTM D5185m >330 89 Tin ppm ASTM D5185m >15 2 Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 100 4 Manganese ppm ASTM D5185m 100 4 Magnesium ppm ASTM D5185m 3050 2575 Phosphorus ppm ASTM D5185m 1050 955 Zinc ppm ASTM D5185m 1200 1141	Aluminum	ppm	ASTM D5185m	>20	25		
Tin	_ead	ppm	ASTM D5185m	>40	<1		
Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 100 4 Manganese ppm ASTM D5185m 100 4 Magnesium ppm ASTM D5185m 60 50 Magnesium ppm ASTM D5185m 3050 2575 Phosphorus ppm ASTM D5185m 1050 955 Zinc ppm ASTM D5185m 1200 1141 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	89		
Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 100 4 Manganese ppm ASTM D5185m 1 Magnesium ppm ASTM D5185m 60 50 Calcium ppm ASTM D5185m 1050 955 Phosphorus ppm ASTM D5185m 1200 1141 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Solicon ppm ASTM D5185m 25 12	Γin	ppm	ASTM D5185m	>15	2		
ADDITIVES	/anadium	ppm	ASTM D5185m		<1		
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 4 Manganese ppm ASTM D5185m 60 50 Magnesium ppm ASTM D5185m 3050 2575 Calcium ppm ASTM D5185m 1050 955 Phosphorus ppm ASTM D5185m 1200 1141 Zinc ppm ASTM D5185m 12500 3119 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 20 62 Potassium ppm ASTM D5185m >20 62 Soot % % *ASTM D7844	Boron	ppm	ASTM D5185m	0	0		
Manganese ppm ASTM D5185m 1 Magnesium ppm ASTM D5185m 60 50 Calcium ppm ASTM D5185m 3050 2575 Phosphorus ppm ASTM D5185m 1050 955 Zinc ppm ASTM D5185m 1200 1141 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m 20 62 INFRA-RED method limit/base current history1 his Soot % % ASTM D7844 >3 1.5 -	Barium	ppm	ASTM D5185m	0	0		
Magnesium ppm ASTM D5185m 60 50 Calcium ppm ASTM D5185m 3050 2575 Phosphorus ppm ASTM D5185m 1050 955 Zinc ppm ASTM D5185m 1200 1141 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7414	Molybdenum	ppm	ASTM D5185m	100	4		
Calcium ppm ASTM D5185m 3050 2575 Phosphorus ppm ASTM D5185m 1050 955 Zinc ppm ASTM D5185m 1200 1141 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >3 1.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base curr	Manganese	ppm	ASTM D5185m		1		
Phosphorus ppm ASTM D5185m 1050 955 Zinc ppm ASTM D5185m 1200 1141 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >3 1.5 Sulfation Abs/:nm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/:nm *ASTM D7414	Magnesium	ppm	ASTM D5185m	60	50		
Zinc ppm ASTM D5185m 1200 1141 Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >3 1.5 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	3050	2575		
Sulfur ppm ASTM D5185m 12500 3119 CONTAMINANTS method limit/base current history1 his Silicon ppm ASTM D5185m >25 12 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >3 1.5 Nitration Abs/.1mm *ASTM D7624 >20 10.8 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414 >25 17.3	Phosphorus	ppm	ASTM D5185m	1050	955		
CONTAMINANTS method limit/base current history1 history1 history1 history1 history1 history1 history1 history1 history1 history2	Zinc	ppm	ASTM D5185m	1200	1141		
Silicon ppm ASTM D5185m >25 12	Sulfur	ppm	ASTM D5185m	12500	3119		
Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >3 1.5 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414 >25 17.3	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 62 INFRA-RED method limit/base current history1 his Soot % % *ASTM D7844 >3 1.5 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414 >25 17.3	Silicon	ppm	ASTM D5185m	>25	12		
INFRA-RED	Sodium	ppm	ASTM D5185m		2		
Soot % *ASTM D7844 >3 1.5 Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414 >25 17.3	Potassium	ppm	ASTM D5185m	>20	62		
Nitration Abs/cm *ASTM D7624 >20 10.8 Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414 >25 17.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 24.9 FLUID DEGRADATION method limit/base current history1 his Oxidation Abs/.1mm *ASTM D7414 >25 17.3	Soot %	%	*ASTM D7844	>3	1.5		
FLUID DEGRADATION method limit/base current history1 history1 current history1 histo	Nitration	Abs/cm	*ASTM D7624	>20	10.8		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	24.9		
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Page Number (PN) mg/OU/g ACTM D0006 10 F	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.3		
Dase Number (DIV) Highory ASTIVI D2030 TU.S 5.7	Base Number (BN)	mg KOH/g	ASTM D2896	10.5	5.7		



OIL ANALYSIS REPORT







Certificate 12367

Laboratory Sample No.

: WC0720104 Lab Number : 06174820 Unique Number : 11020873 Test Package : FLEET

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 09 May 2024 **Tested** : 10 May 2024

Diagnosed : 10 May 2024 - Wes Davis

US 37015 Contact: MASON NICHOLSON M.NICHOLSON@DILLONTRANSPORTATION.COM

DILLON TRANSPORTATION

974 TN WALTZ PARKWAY

ASHLAND CITY, TN

T: (615)792-5099

F: (615)469-4200

* - 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)

Report Id: DILASH [WUSCAR] 06174820 (Generated: 05/15/2024 11:36:27) Rev: 1

Contact/Location: MASON NICHOLSON - DILASH