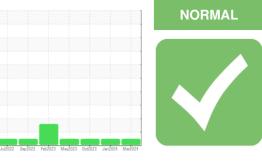


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

27 Component Diesel Engine Fluid PURUS SYNTHETIC BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

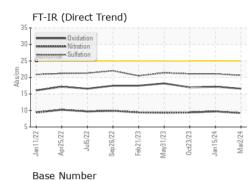
Fluid Condition

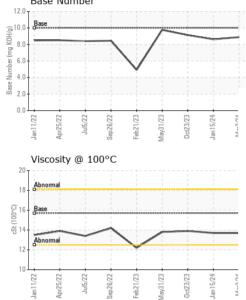
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RW0004548	RW0004553	RW0004563
Sample Date		Client Info		02 Mar 2024	15 Jan 2024	23 Oct 2023
Machine Age	mls	Client Info		640343	615332	587666
Oil Age	mls	Client Info		24000	24000	24000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	12	12	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	3
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	2
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 4	history2 2
	ppm ppm		limit/base			-
Boron		ASTM D5185m	limit/base	0	4	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0 0	4	2 7
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70	4 0 70	2 7 74
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1	4 0 70 <1	2 7 74 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937	4 0 70 <1 881	2 7 74 0 919
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937 1159	4 0 70 <1 881 1073	2 7 74 0 919 1159
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937 1159 963	4 0 70 <1 881 1073 926	2 7 74 0 919 1159 1117
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937 1159 963 1165	4 0 70 <1 881 1073 926 1215	2 7 74 0 919 1159 1117 1267
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 0 70 <1 937 1159 963 1165 3170	4 0 70 <1 881 1073 926 1215 2614	2 7 74 0 919 1159 1117 1267 3184
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937 1159 963 1165 3170 current	4 0 70 <1 881 1073 926 1215 2614 history1	2 7 74 0 919 1159 1117 1267 3184 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937 1159 963 1165 3170 current 6	4 0 70 <1 881 1073 926 1215 2614 history1 7	2 7 74 0 919 1159 1117 1267 3184 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 70 <1 937 1159 963 1165 3170 current 6 45	4 0 70 <1 881 1073 926 1215 2614 history1 7 40	2 7 74 0 919 1159 1117 1267 3184 history2 8 48
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	0 0 70 <1 937 1159 963 1165 3170 current 6 45 19	4 0 70 <1 881 1073 926 1215 2614 history1 7 40 17	2 7 74 0 919 1159 1117 1267 3184 history2 8 48 48 18
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	0 0 70 <1 937 1159 963 1165 3170 current 6 45 19 20 current	4 0 70 <1 881 1073 926 1215 2614 history1 7 40 17 17 history1	2 7 74 0 919 1159 1117 1267 3184 history2 8 48 18 18 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	0 0 70 <1 937 1159 963 1165 3170 current 6 45 19 current 0.3	4 0 70 <1 881 1073 926 1215 2614 history1 7 40 17 17 history1 0.3	2 7 74 0 919 1159 1117 1267 3184 history2 8 48 18 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	0 0 70 <1 937 1159 963 1165 3170 current 6 45 19 current 0.3 9.2	4 0 70 <1 881 1073 926 1215 2614 history1 7 40 17 history1 0.3 9.7	2 7 74 0 919 1159 1117 1267 3184 history2 8 48 48 18 18 history2 0.3 9.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >3 >20 >3 >20 >30	0 0 70 <1 937 1159 963 1165 3170 <u>current</u> 6 45 19 <u>current</u> 0.3 9.2 20.6	4 0 70 <1 881 1073 926 1215 2614 history1 7 40 17 7 40 17 0.3 9.7 21.1	2 7 74 0 919 1159 1117 1267 3184 history2 8 48 18 history2 0.3 9.4 21.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	limit/base >25 >20 limit/base >3 >20 >30 >30 limit/base	0 0 70 <1 937 1159 963 1165 3170 current 6 45 19 current 0.3 9.2 20.6 current	4 0 70 <1 881 1073 926 1215 2614 history1 7 40 17 7 40 17 0.3 9.7 21.1 history1	2 7 74 0 919 1159 1117 1267 3184 history2 8 48 48 18 history2 0.3 9.4 21.1 history2



OIL ANALYSIS REPORT





Jan15/24 - Mar2/24 - Mar2/	VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERTI Visc @ 100°C	scalar scalar scalar scalar scalar scalar scalar scalar scalar	method *Visual	limit/base NONE NONE NONE NONE NONE NONE NORE NORML NORML	Current NONE NONE NONE NONE NONE NONE	history1 NONE NONE NONE NONE NONE NONE NORE	history2 NONE NONE NONE NONE NONE NONE
Jan15/24	Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT	scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NORE NORML	NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE	NONE NONE NONE NONE
Jan15/24 +	Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT	scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NORML	NONE NONE NONE NONE	NONE NONE NONE NONE	NONE NONE NONE
Jan 15/24 + Mar2/24 + Mar2	Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NORML	NONE NONE NONE	NONE NONE NONE	NONE NONE NONE
Jan 15/24	Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERT	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NORML	NONE NONE	NONE	NONE NONE
Jan 15/24	Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPERTI	scalar scalar scalar scalar scalar	*Visual *Visual *Visual	NONE NORML	NONE	NONE	NONE
Jan15/24 +	Appearance Odor Emulsified Water Free Water FLUID PROPERTI	scalar scalar scalar scalar	*Visual *Visual	NORML			
Jan 15/24	Odor Emulsified Water Free Water FLUID PROPERTI	scalar scalar scalar	*Visual	NORML	NORML	NORML	NODM
lan l	Odor Emulsified Water Free Water FLUID PROPERTI	scalar scalar		NORMI			NORML
	Free Water FLUID PROPERTI	scalar	*Visual		NORML	NORML	NORML
	FLUID PROPERTI	scalar		>0.2	NEG	NEG	NEG
	FLUID PROPERTI		*Visual		NEG	NEG	NEG
				line it //e e e e			
			method	limit/base	current	history1	history2
		cSt	ASTM D445	15.7	13.7	13.7	13.9
	GRAPHS						
	Iron (ppm)			100-	Lead (ppm)		
	200 Severe			80	Severe		
m15/	150 -			60			
	100 - Abnormal			E 40	Abnormal		
	50 -			20			
				0			
	Jan 11/22 Apr25/22 Jul5/22 Sep26/22	Feb21/23 May31/23	Oct23/23	Mar2/24	Jan 1 1/22 Apr 25/22 Jul5/22	Sep26/22 Feb21/23 May31/23	Oct23/23 Jan15/24
	Jan' Apri	Feb; May,	Jan Jan	Ma	Apri	Sep. Feb.	Jan J
	Aluminum (ppm)				Chromium (p	pm)	
	50 40 Severe			50	Severe		· · · · · · · · · · · · · · · · · · ·
			1 1	40			
24 +	20 - Abnormal			³⁰	Abnormal		
Jan 15/24 ۸۸ مر میر ۱۵					- 0		
7		1	1 1	10			
	an 11/22 +	723	/23+	124	an 11/22 - pr25/22 - Jul5/22 -	/22 - /23 -	/23 -
	Jan 1 1/22 Apr25/22 Sep26/22	Feb21/23 May31/23	0ct23/23 Jan 15/24	Mar2/24	Jan 1 1/22 Apr25/22 Jul5/22	Sep26/22 Feb21/23 May31/23	0ct23/23 Jan15/24
	Copper (ppm)	~			Silicon (ppm)		
400 Severe				80	Severe		
3	300 -			60			
5.2	200 -			튭.40		\wedge	
					Abnormal		1
1	100-			20			
		2 23	23	- 54 0	22	22	23 +
	Jan 1 1/22 Apr25/22 Jul5/22 Sep26/22	Feb21/23 May31/23	0ct23/23 Jan 15/24	Mar2/24	Jan 11/22 Apr25/22 Jul5/22	Sep26/22 Feb21/23 May31/23	Oct23/23 Jan 15/24
	Viscosity @ 100°C	H Z	0 7		¬ ¬ ¬ Base Number	2	0 7
	20 T				T		
	18 - Abnormal	1 1 1 1		(0) 10.0 H0 10.0 but as 6.0 u as 6.0 equin 4.0 seg	Base		
cSt (100°C)	16 - Base			E 8.0			
St (1	14 Abnormal			a 0.0		\sim	
	12 Abnormal	~		2.0-			
			- - +	0.0	2+	3 3	
	Jan 11/22 Apr25/22 Jul5/22 Sep26/22	Feb21/23 May31/23	0ct23/23 Jan 15/24	Mar2/24	Jan 1 1/22 Apr25/22 Jul5/22	Sep26/22 Feb21/23 May31/23	Oct23/23
	Ar	Fe Ma	Ja 0	2	Ar Ar	Se Fe Ma	n n
ample No. : ab Number :	WearCheck USA - 501 RW0004548 06148904 10978982 MOR 2	Madison Receiv Tested Diagno	red : 15	NC 27513 Apr 2024 Apr 2024 Apr 2024 - We	es Davis	EL	TE FOODS IN 701 US 31 LK RAPIDS, M US 4962 roger WILSO

To discuss this sample report, co. * - 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: BURELKMI [WUSCAR] 06148904 (Generated: 04/16/2024 11:32:49) Rev: 1

Certificate L2367

Contact/Location: roger WILSON - BURELKMI

F: