

Sample Rating Trend



Machine Id **5047** Component **Diesel Engine** Fluid **AMERIGUARD 15W40 (--- GAL)**

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

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		SBP0004656	SBP0001692	SBP0001666
Sample Date		Client Info		16 Aug 2023	16 Jan 2023	19 Aug 2022
Machine Age	mls	Client Info		194220	183928	172997
Oil Age	mls	Client Info		10292	10931	11506
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	36	34	50
Chromium	ppm	ASTM D5185m	>5	2	2	3
Nickel	ppm	ASTM D5185m	>2	- <1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	11	7	<u>▲</u> 12
Lead	ppm	ASTM D5185m	>30	<1	2	2
Copper	ppm	ASTM D5185m	>150	2	2	3
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			11 11 11			history O
ADDITIVES		method	limit/base	current	history1	nistory2
ADDITIVES Boron	maa	method ASTM D5185m	limit/base		history1 5	history2 37
Boron	ppm pom	ASTM D5185m	limit/base	7	5	37 0
Boron Barium	ppm		limit/base	7 0	5 0	37
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 70	5 0 72	37 0 74
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 0 70 <1	5 0	37 0
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		7 0 70 <1 1125	5 0 72 1	37 0 74 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		7 0 70 <1	5 0 72 1 1127	37 0 74 <1 916
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		7 0 70 <1 1125 1260	5 0 72 1 1127 1348	37 0 74 <1 916 1395
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		7 0 70 <1 1125 1260 1230	5 0 72 1 1127 1348 1074	37 0 74 <1 916 1395 978
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	7 0 70 <1 1125 1260 1230 1514	5 0 72 1 1127 1348 1074 1430	37 0 74 <1 916 1395 978 1232
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	limit/base	7 0 70 <1 1125 1260 1230 1514 3478	5 0 72 1 1127 1348 1074 1430 3594	37 0 74 <1 916 1395 978 1232 3558
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm 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	7 0 70 <1 1125 1260 1230 1514 3478 current	5 0 72 1 1127 1348 1074 1430 3594 history1	37 0 74 <1 916 1395 978 1232 3558 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base >20	7 0 70 <1 1125 1260 1230 1514 3478 current 8	5 0 72 1 1127 1348 1074 1430 3594 history1 10	37 0 74 <1 916 1395 978 1232 3558 history2 ▲ 28
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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 ASTM D5185m	limit/base >20	7 0 70 <1 1125 1260 1230 1514 3478 <u>current</u> 8 10	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6	37 0 74 <1 916 1395 978 1232 3558 history2 ▲ 28 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20 limit/base	7 0 70 <1 1125 1260 1230 1514 3478 current 8 10 12 22 current	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6 8 8 history1	37 0 74 <1 916 1395 978 1232 3558 history2 ▲ 28 7 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20 limit/base >3	7 0 70 <1 1125 1260 1230 1514 3478 current 8 10 12	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6 8	37 0 74 <1 916 1395 978 1232 3558 history2 28 7 8 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >20 >20 limit/base >3	7 0 70 <1 1125 1260 1230 1514 3478 <u>current</u> 8 10 12 2 <u>current</u> 0.8	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6 8 8 history1 0.8	37 0 74 <1 916 1395 978 1232 3558 history2 ▲ 28 7 8 28 7 8 <i>history2</i>
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 >20 >20 limit/base >3 >20	7 0 70 <1 1125 1260 1230 1514 3478 <i>current</i> 8 10 12 <i>current</i> 0.8 12.8	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6 8 <u>history1</u> 0.8 14.2	37 0 74 <1 916 1395 978 1232 3558 history2 ▲ 28 7 8 28 7 8 <i>history2</i> 0.9 16.1
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 D7844 *ASTM D7844	limit/base >20 >20 limit/base >3 >20 >30 >30 limit/base	7 0 70 <1 1125 1260 1230 1514 3478 <i>current</i> 8 10 12 <i>current</i> 0.8 12.8 23.5 <i>current</i>	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6 8 history1 0.8 14.2 26.1 history1	37 0 74 <1 916 1395 978 1232 3558 history2 ▲ 28 7 8 28 7 8 history2 0.9 16.1 30.1
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 D5185m	limit/base >20 >20 limit/base >3 >20 >30 >30 limit/base	7 0 70 <1 1125 1260 1230 1514 3478 current 8 10 12 2 current 0.8 12.8 23.5	5 0 72 1 1127 1348 1074 1430 3594 history1 10 6 8 8 history1 0.8 14.2 26.1	37 0 74 <1 916 1395 978 1232 3558 history2 28 7 8 28 7 8 bistory2 0.9 16.1 30.1



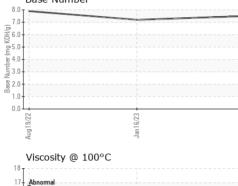
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Aug19/22

OIL ANALYSIS REPORT

VISUAL

Base Number



	Laboratory Sample No. Lab Number Unique Number	: SBP0004656 : <mark>05968602</mark>	A - 501 Madiso Received Diagnose Diagnostic		3	Bros. Fleet - Og	allala Locatio
		Aug19/22	Jan 16/23 +	Aug16/23	Aug19/22	Jan 16/23	
		13 - Abnormal			a 4.0 4.0 3.0 882 2.0 1.0		
		17+ Abnormal 16- \$2015 \$314			7.0 第6.0 第5.0		
		Viscosity @ 10		e,	Base Number	r	
		Aug19/22	Jan 16/23 +	44444444444444444444444444444444444444			
		E. 4 2					
		8 - tin					
		Non-ferrous N		Au			
		0 0 19/22	Jan 16/23	Aug16/23			
		E. 20-					
Jan 16/23 -		40 + iron 30 +	<u> </u>				
		GRAPHS Ferrous Alloys	5				
		FLUID PROP Visc @ 100°C		method limit/b ASTM D445	ase current 14.4	history1 14.3	history2 14.7
		Free Water	scalar	*Visual	NEG	NEG	NEG
Jan 16/23	Aug16/23	Odor Emulsified Wate		*Visual NORM *Visual >0.2	L NORML NEG	NORML NEG	NORML NEG
6/3	Sand/Dirt Appearance		*Visual NONE *Visual NORM	NONE NORML	NONE NORML	NONE NORML	
	Silt	scalar	*Visual NONE *Visual NONE	NONE	NONE	NONE	
		White Metal Yellow Metal Precipitate		*Visual NONE *Visual NONE *Visual NONE	NONE NONE	NONE NONE	NONE NONE

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Submitted By: DAN VAN ZEE

Page 2 of 2