

OIL ANALYSIS REPORT

Area **Closter** FREIGHTLINER 2456

Component Diesel Engine

GIBRALTAR 15W/40 SUPER S-3 LX (11)

Recommendation

Resample at the next service interval to monitor.

Wear

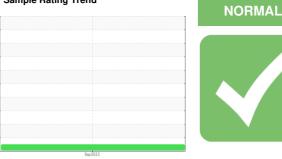
All component wear rates are normal.

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 Rating Trend



SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0831044		
Sample Date		Client Info		18 Sep 2023		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Oil Changed		Client Info		Changed		
Sample Status				NORMAL		
CONTAMINATION	٨	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	4		
Chromium	ppm	ASTM D5185m	>5	0		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	0		
Aluminum	ppm	ASTM D5185m	>30	2		
Lead	ppm	ASTM D5185m	>30	<1		
Copper	ppm	ASTM D5185m	>150	<1		
Tin	ppm	ASTM D5185m	>5	<1		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
Cadiman	ppin	AGTIVI DOTODITI		0		
ADDITIVES	ppin	method	limit/base	current	history1	history2
	ppm		limit/base	-		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1 	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m		current 4 0	history1 	history2
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m		current 4 0 61	history1 	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66	current 4 0 61 0	history1 	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000	current 4 0 61 0 749	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050	Current 4 0 61 0 749 1092 945 1156	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270	Current 4 0 61 0 749 1092 945	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base	Current 4 0 61 0 749 1092 945 1156 3440 Current	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base	current 4 0 61 0 749 1092 945 1156 3440 current 2	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >20	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1	history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >20	current 4 0 61 0 749 1092 945 1156 3440 current 2	history1 history1	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >20	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1 1 current	history1	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >20 limit/base >20	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1 1 current 0.5	history1	history2 history2
ADDITIVES 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	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >20 limit/base	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1 1 current	history1 history1 history1 history1	history2 history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	66 1000 1050 1150 1270 limit/base >20 limit/base >20	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1 1 current 0.5	history1 history1 history1 history1 history1 history1	history2 history2 history2 history2
ADDITIVES 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	method ASTM D5185m	66 1000 1050 1150 1270 20 imit/base >20 imit/base >3 >20	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1 1 current 0.5 8.0	history1 history1 history1 history1 history1	history2 history2 history2
ADDITIVES 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	method ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 220 20 20 1imit/base >3 >20 3 20	current 4 0 61 0 749 1092 945 1156 3440 current 2 <1 1 current 0.5 8.0 18.5	history1 history1 history1 history1	history2 history2 history2

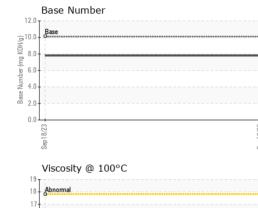


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13 Abnormal 12 11 Sep18/23

OIL ANALYSIS REPORT

VISUAL



	VISUAL		method			history1	history2
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal		*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt		*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
33	_ Sand/Dirt	scalar	*Visual	NONE	NONE		
Sep 18/23	Appearance	scalar	*Visual	NORML	NORML		
Š		scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPER	TIFS	method	limit/base	current	history1	history2
1							
	Visc @ 100°C	cSt	ASTM D445	15.5	13.3		
	GRAPHS						
	Ferrous Alloys						
	iron						
	8 - nickel						
	6						
	Щ. 4						
	2						
	23	**************	******	/23			
	Sep 18/23			Sep18/23			
	Non-ferrous Meta	le		03			
	10 _T :						
	copper						
	8-						
	6 -						
	6 - E						
	6- Ed 4-						
	4						
	б 4 2						
	4						
	4 2 0						
	4			Sep 18/23			
	Viscosity @ 100°C	C		Sep18/23	Base Number		
	Viscosity @ 100°C	c		270 270 20 20 20 20 20 20 20 20 20 20 20 20 20	Base Number		
	Viscosity @ 100°0	c		12.0	Bace		
	Viscosity @ 100°0	c		12.0	Base		
	Viscosity @ 100°0	c		12.0	Base		
	Viscosity @ 100°0	c		12.0	Base		
	Viscosity @ 100°C	c		12.0	- Base		
	Viscosity @ 100°0	C		12.0 (0,H) 8,0 (0,H) 8,0 (Base		
	Viscosity @ 100°0	C		12.0 (0)H (0)H (0)H (0)H (0)H (0)H (0)H (0)	Base		
	Viscosity @ 100°C	C		12.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	Base		
	Viscosity @ 100°C	C		12.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	Base		
	Viscosity @ 100°0			12.0 (0)HOX Bull a during see 2.0 EZ2081 65	Base Base 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Laboratory	Viscosity @ 100°C	501 Madis		12.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(Base Base 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ERSTATE WA	
Sample No.	Viscosity @ 100°C	501 Madis Received	: 29 :	12.0 10.0	Base Base 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		ROAD AVEN
Sample No. Lab Number	Viscosity @ 100°C	501 Madis Received Diagnose	i : 29 : ed : 29 :	12.0 10.0	Base Base 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		ROAD AVENI CLOSTER,
Sample No. Lab Number Unique Number	Viscosity @ 100°C Viscosity @ 100°C	501 Madis Received	i : 29 : ed : 29 :	12.0 10.0	Base Base 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	77 RAILF	ROAD AVENI CLOSTER, US 076
Sample No. Lab Number Unique Number	Viscosity @ 100°C Viscosity @ 100°C Base Abnormal Abnormal Control of the second	501 Madis Received Diagnose Diagnosti	29 (d : 29 (ician : We	12.0 10.0	Base Base EZ28 Line S 3 INT	77 RAILF	ROAD AVENI CLOSTER, US 076 Tony Gaglia