

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area Ewing Hauling Machine Id MACK 6767

Component Diesel Engine

GIBRALTAR 15W/40 SUPER S-3 LX (--- 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.

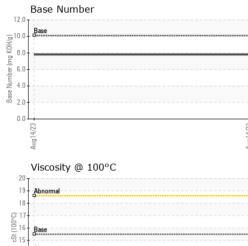
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0831113		
Sample Date		Client Info		14 Aug 2023		
Machine Age	mls	Client Info		14884		
Oil Age	mls	Client Info		150		
Oil Changed		Client Info		Filtered		
Sample Status				NORMAL		
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0		
Glycol		WC Method		NEG		
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	1		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>5	0		
Titanium	ppm	ASTM D5185m	>2	0		
Silver	ppm	ASTM D5185m	>2	0		
Aluminum	ppm	ASTM D5185m	>20	<1		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	0		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		<1		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	Method ASTM D5185m	limit/base	current 27	history1	history2
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base 66	27		
Boron Barium	ppm	ASTM D5185m ASTM D5185m		27 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		27 0 61		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66	27 0 61 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000	27 0 61 0 693		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	66 1000 1050	27 0 61 0 693 1357		
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	66 1000 1050 1150	27 0 61 0 693 1357 1006		
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	66 1000 1050 1150	27 0 61 0 693 1357 1006 1186		
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 ASTM D5185m	66 1000 1050 1150 1270 limit/base	27 0 61 0 693 1357 1006 1186 3930		
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 ASTM D5185m	66 1000 1050 1150 1270 limit/base	27 0 61 0 693 1357 1006 1186 3930 current		
Boron Barium Molybdenum Maganese 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 method ASTM D5185m	66 1000 1050 1150 1270 limit/base	27 0 61 0 693 1357 1006 1186 3930 current 3		
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 method ASTM D5185m	66 1000 1050 1150 1270 limit/base >25	27 0 61 0 693 1357 1006 1186 3930 current 3 2		 history2
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	66 1000 1050 1150 1270 limit/base >25 >20	27 0 61 0 693 1357 1006 1186 3930 current 3 2 0	 history1 	 history2
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	66 1000 1050 1150 1270 limit/base >25 >20 limit/base	27 0 61 0 693 1357 1006 1186 3930 current 3 2 0 0	 history1 history1	 history2 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	66 1000 1050 1150 1270 limit/base >25 >20 limit/base >4	27 0 61 0 693 1357 1006 1186 3930 current 3 2 0 0 current 0.1	 history1 history1 history1	 history2 history2
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	66 1000 1050 1150 1270 limit/base >25 >20 limit/base >4 >20	27 0 61 0 693 1357 1006 1186 3930 current 3 2 0 current 0.1 5.3	history1 history1	history2 history2
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	66 1000 1050 1150 1270 25 25 20 1imit/base >20 1imit/base >4 >20 30	27 0 61 0 693 1357 1006 1186 3930 current 3 2 0 current 0.1 5.3 16.5	 history1 history1 history1	 history2 history2 history2
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	66 1000 1050 1150 1270 imit/base >25 >20 imit/base >4 >20 >30	27 0 61 0 693 1357 1006 1186 3930 <u>current</u> 3 2 0 <u>current</u> 0.1 5.3 16.5	 history1 history1 history1	history2 history2 history2



Base Abnormal 14 13-12 Aug14/23

OIL ANALYSIS REPORT

VISUAL



	VISUAL		methou	iiiiii/base	current	nistory i	Thatoryz
***	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar		NONE	NONE		
	Precipitate		*Visual	NONE	NONE		
	Silt		*Visual	NONE	NONE		
	Debris		*Visual	NONE	NONE		
	_ Sand/Dirt		*Visual	NONE	NONE		
Aua 14/23	Appearance		*Visual	NORML	NORML		
Au		scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROPER	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C		ASTM D445		13.5		
	GRAPHS			1010			
	Ferrous Alloys						
	iron						
	8 - nickel						
	u d						
	4						
	2						
	0						
	/23			/23			
	Aug14/23			Aug14/23			
	⊲ Non-ferrous Met	alc		4			
	Non-terrous Met	.a15					
	copper						
	8 - eesseessees lead						
	4						
	2						
	23 +0			/23			
	Aug14/23			Aug14/23			
				Aı			
	Viscosity @ 100°	<i>с</i>			Base Number	r	
	19 - Abnormal			12.0	Pres		
	18				oase		
	000 8 3 15			Bu			
	E Base			a 6.0	1		
	Abnormal			4.0			
				2.0			
	13						
	12						
	Aug 14/23			Aug 14/23	Aug14/23		
				Au	Au		
	Au						
l aboratory		- 501 Madie		rv NC 27513			
Laboratory Sample No	: WearCheck USA					INTERSTATE V 432 ST	
Sample No.	: WearCheck USA : WC0831113	Received	: 22 /	Aug 2023		432 ST	OKES AVENU
Sample No. Lab Number	: WearCheck USA : WC0831113 : 05931431	Received Diagnose	: 22 / d : 24 /	Aug 2023 Aug 2023		432 ST	OKES AVENU TOWNSHIP, N
Sample No. Lab Number	: WearCheck USA : WC0831113 : 05931431 r : 10616702	Received	: 22 / d : 24 /	Aug 2023		432 STO EWING	OKES AVENU TOWNSHIP, N US 0863
Sample No. Lab Number Unique Numbe	: WearCheck USA : WC0831113 : 05931431 r : 10616702 : FLEET : contact Customer Set	Received Diagnose Diagnosti	: 22 / d : 24 / cian : Don 00-237-1369	Aug 2023 Aug 2023 I Baldridge		432 STO EWING	OKES AVENU TOWNSHIP, N US 0863 ct: Carlos Evar

Submitted By: Carlos Evans Page 2 of 2