

# **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL



### Area Ewing Hauling Machine Id MACK 6711

Component Diesel Engine

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

#### 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.

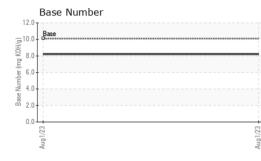
### Fluid Condition

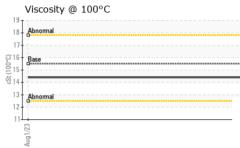
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0830842		
Sample Date		Client Info		01 Aug 2023		
Machine Age	hrs	Client Info		9651		
Oil Age	hrs	Client Info		150		
Oil Changed		Client Info		Not Changd		
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	5		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>5	0		
Titanium	ppm	ASTM D5185m	>2	0		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>20	<1		
Lead	ppm	ASTM D5185m	>40	<1		
Copper	ppm	ASTM D5185m	>330	<1		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
	11					
ADDITIVES			limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	6		
Boron Barium	ppm	ASTM D5185m ASTM D5185m		6 2		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 660	6 2 68		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660	6 2 68 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660 1000	6 2 68 0 801		
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660 1000 1050	6 2 68 0 801 1326	  	
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	660 1000 1050 1150	6 2 68 0 801 1326 1026	   	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660 1000 1050	6 2 68 0 801 1326 1026 1237	    	    
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	660 1000 1050 1150 1270	6 2 68 0 801 1326 1026 1237 3435		
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	660 1000 1050 1150 1270 limit/base	6 2 68 0 801 1326 1026 1237 3435 current	    	    
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 <b>method</b>	660 1000 1050 1150 1270	6 2 68 0 801 1326 1026 1237 3435 current 13		
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	660 1000 1050 1150 1270 limit/base >25	6 2 68 0 801 1326 1026 1237 3435 <u>current</u> 13 0	      history1	      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 <b>method</b>	660 1000 1050 1150 1270 limit/base	6 2 68 0 801 1326 1026 1237 3435 current 13	     history1	     history2
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	660 1000 1050 1150 1270 limit/base >25	6 2 68 0 801 1326 1026 1237 3435 <u>current</u> 13 0	      history1	      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	660 1000 1050 1150 1270 limit/base >25 >20	6 2 68 0 801 1326 1026 1237 3435 current 13 0 4	     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	660 1000 1050 1150 1270 <b>limit/base</b> >25 >20	6 2 68 0 801 1326 1026 1237 3435 current 13 0 4	     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	660 1000 1050 1150 1270 limit/base >25 >20 limit/base >20	6 2 68 0 801 1326 1026 1237 3435 <u>current</u> 13 0 4 <u>current</u>	     history1   history1 	     history2  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	660 1000 1050 1150 1270 1270 imit/base >25 >20 imit/base >4 >20	6 2 68 0 801 1326 1026 1237 3435 current 13 0 4 current 0.2 6.8	      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 D7844 *ASTM D7844	660 1000 1050 1150 1270 225 >25 >20 <b>limit/base</b> >4 >20 >30	6 2 68 0 801 1326 1026 1237 3435 <u>current</u> 13 0 4 <u>current</u> 0.2 6.8 18.6	      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 D7844 *ASTM D7624 *ASTM D7415	660 1000 1050 1150 1270 225 225 220 220 imit/base >4 >20 >30	6 2 68 0 801 1326 1026 1237 3435 <i>current</i> 13 0 4 <i>current</i> 0.2 6.8 18.6	      history1   history1  history1	     history2  history2  history2  history2



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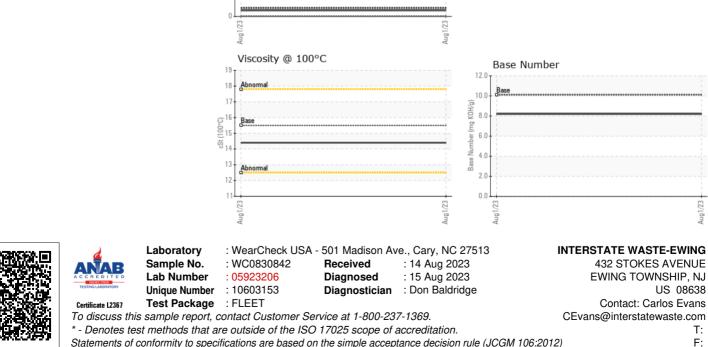




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	LIGHT		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.2	NEG		
Free Water	scalar	*Visual		NEG		
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	14.4		
GRAPHS						
Ferrous Alloys						
iron 8						
nickel						
6 -						
4						
2						
	******	******				
Aug1/23			Aug1/23			
			Au			
Non-ferrous Meta	als					



bpm



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)