

# **OIL ANALYSIS REPORT**

# **Action Newark PETERBILT 2477**

Component Diesel Engine

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

# Sample Rating Trend



### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

### **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.

Oil Changed Status         Client Info         N/A             Sample Status         NORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         NEG             Glycol         WC Method         NEG             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >110         6             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >4         0             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >2         0             Chromium         ppm         ASTM D5185m         >4         0             Ilium         ppm         ASTM D5185m         >45 <t< th=""><th></th><th></th><th></th><th></th><th>Oct2023</th><th></th><th></th></t<>					Oct2023		
Sample Date   Client Info   24 Oct 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0	Sample Number		Client Info		WC0863188		
Oil Age         hrs         Client Info         N/A	Sample Date		Client Info		24 Oct 2023		
Contamination	Machine Age	hrs	Client Info		0		
CONTAMINATION	Oil Age	hrs	Client Info		0		
CONTAMINATION         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         >110         6             Chromium         ppm         ASTM D5185m         >2         0             Nickel         ppm         ASTM D5185m         >2         0             Silver         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >25         2             Lead         ppm         ASTM D5185m         >45         0             Copper         ppm         ASTM D5185m         >4         <1             Vanadium         ppm         ASTM D5185m         0             Van	Oil Changed		Client Info		N/A		
Fuel	Sample Status				NORMAL		
WEAR METALS	CONTAMINATION	٧	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >110         6             Chromium         ppm         ASTM D5185m         >4         0             Nickel         ppm         ASTM D5185m         >2         0             Titanium         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         0             Lead         ppm         ASTM D5185m         >4         5         0             Copper         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0              Cadmium         ppm         ASTM D5185m	Fuel		WC Method	>5	<1.0		
Irron	Glycol		WC Method		NEG		
Chromium         ppm         ASTM D5185m         >4         0             Nickel         ppm         ASTM D5185m         >2         0             Titanium         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         2             Aluminum         ppm         ASTM D5185m         >45         0             Lead         ppm         ASTM D5185m         >4         <1             Copper         ppm         ASTM D5185m         >4         <1             Tin         ppm         ASTM D5185m         0              Vanadium         ppm         ASTM D5185m         0              Cadmium         ppm         ASTM D5185m         0              Barium         ppm         ASTM D5185m         0	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >4         0             Nickel         ppm         ASTM D5185m         >2         0             Titanium         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         2             Aluminum         ppm         ASTM D5185m         >45         0             Lead         ppm         ASTM D5185m         >4         <1	Iron	nnm	ASTM D5185m	>110	6		
Nickel	-						
Titanium					-		
Silver				_	-		
Aluminum				>2			
Lead					-		
Copper         ppm         ASTM D5185m         >85         0             Tin         ppm         ASTM D5185m         >4         <1	Lead			>45			
Tin			ASTM D5185m	>85	0		
Vanadium         ppm         ASTM D5185m         0             Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         10             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         1000         769             Magnesium         ppm         ASTM D5185m         1050         1134             Calcium         ppm         ASTM D5185m         1050         1134             Phosphorus         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Solium <th>• •</th> <th></th> <th>ASTM D5185m</th> <th>&gt;4</th> <th>&lt;1</th> <th></th> <th></th>	• •		ASTM D5185m	>4	<1		
Cadmium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         10             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         1000         769             Magnesium         ppm         ASTM D5185m         1050         1134             Calcium         ppm         ASTM D5185m         1150         974             Phosphorus         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         0	Vanadium		ASTM D5185m		0		
Boron	Cadmium		ASTM D5185m		0		
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         66         58             Manganese         ppm         ASTM D5185m         1000         769             Magnesium         ppm         ASTM D5185m         1050         1134             Calcium         ppm         ASTM D5185m         1050         974             Phosphorus         ppm         ASTM D5185m         1270         1158             Zinc         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base <th< th=""><th>Boron</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>10</th><th></th><th></th></th<>	Boron	ppm	ASTM D5185m		10		
Molybdenum         ppm         ASTM D5185m         66         58             Manganese         ppm         ASTM D5185m         1000         769             Magnesium         ppm         ASTM D5185m         1050         1134             Calcium         ppm         ASTM D5185m         1050         974             Phosphorus         ppm         ASTM D5185m         1270         1158             Zinc         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base <th< td=""><th>Barium</th><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td></td><td></td></th<>	Barium	ppm	ASTM D5185m		0		
Magnesium         ppm         ASTM D5185m         1 000         769             Calcium         ppm         ASTM D5185m         1 050         1134             Phosphorus         ppm         ASTM D5185m         1 150         974             Zinc         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         0              Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         % ASTM D7624         >3         1.3             Nitration         Abs/.1mm         *ASTM D7415         >30         20	Molybdenum		ASTM D5185m	66	58		
Calcium         ppm         ASTM D5185m         1050         1134             Phosphorus         ppm         ASTM D5185m         1150         974             Zinc         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         >20         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base <t< td=""><th>Manganese</th><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td></td><td></td></t<>	Manganese	ppm	ASTM D5185m		0		
Phosphorus         ppm         ASTM D5185m         1150         974             Zinc         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         >0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current	Magnesium	ppm	ASTM D5185m	1000	769		
Zinc         ppm         ASTM D5185m         1270         1158             Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         0              Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 <th< td=""><th>Calcium</th><td>ppm</td><td>ASTM D5185m</td><td>1050</td><th>1134</th><td></td><td></td></th<>	Calcium	ppm	ASTM D5185m	1050	1134		
Sulfur         ppm         ASTM D5185m         2940             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	Phosphorus	ppm	ASTM D5185m	1150	974		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	Zinc	ppm	ASTM D5185m	1270	1158		
Silicon         ppm         ASTM D5185m         >30         3             Sodium         ppm         ASTM D5185m         0              Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	Sulfur	ppm	ASTM D5185m		2940		
Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium         ppm         ASTM D5185m         0             Potassium         ppm         ASTM D5185m         >20         0             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	Silicon	ppm	ASTM D5185m	>30	3		
INFRA-RED	Sodium		ASTM D5185m		0		
Soot %         %         *ASTM D7844         >3         1.3             Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	Potassium	ppm	ASTM D5185m	>20	0		
Nitration         Abs/cm         *ASTM D7624         >20         7.6             Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6							
Sulfation         Abs/.1mm         *ASTM D7415         >30         20.1             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.6	INFRA-RED		method	limit/base	current	history1	history2
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 13.6		%				,	•
Oxidation	Soot %		*ASTM D7844	>3	1.3		
	Soot % Nitration	Abs/cm	*ASTM D7844 *ASTM D7624	>3 >20	1.3 7.6		
	Soot % Nitration Sulfation	Abs/cm Abs/.1mm	*ASTM D7844 *ASTM D7624 *ASTM D7415	>3 >20 >30	1.3 7.6 20.1	 	
	Soot % Nitration Sulfation FLUID DEGRADA	Abs/cm Abs/.1mm	*ASTM D7844 *ASTM D7624 *ASTM D7415 method	>3 >20 >30 limit/base	1.3 7.6 20.1 current	  history1	history2



## **OIL ANALYSIS REPORT**







Laboratory Sample No.

Lab Number **Unique Number** 

: 05997090 : 10725450

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0863188 Received : 02 Nov 2023 Diagnosed : 03 Nov 2023 Diagnostician : Wes Davis

Test Package : MOB 1 (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

**INTERSTATE WASTE-NEWARK** 

110 EVERGREEN AVE, BAY 3 NEWARK, NJ US 07114

Contact: Robert Witynski RWitynski@interstatewaste.com

T:

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