

# **OIL ANALYSIS REPORT**

**Action Newark** PETERBILT 2353

Component

Diesel Engine

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

# Sample Rating Trend **GLYCOL**

## **DIAGNOSIS**

#### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

#### Wear

All component wear rates are normal.

### Contamination

Sodium and/or potassium levels are high.

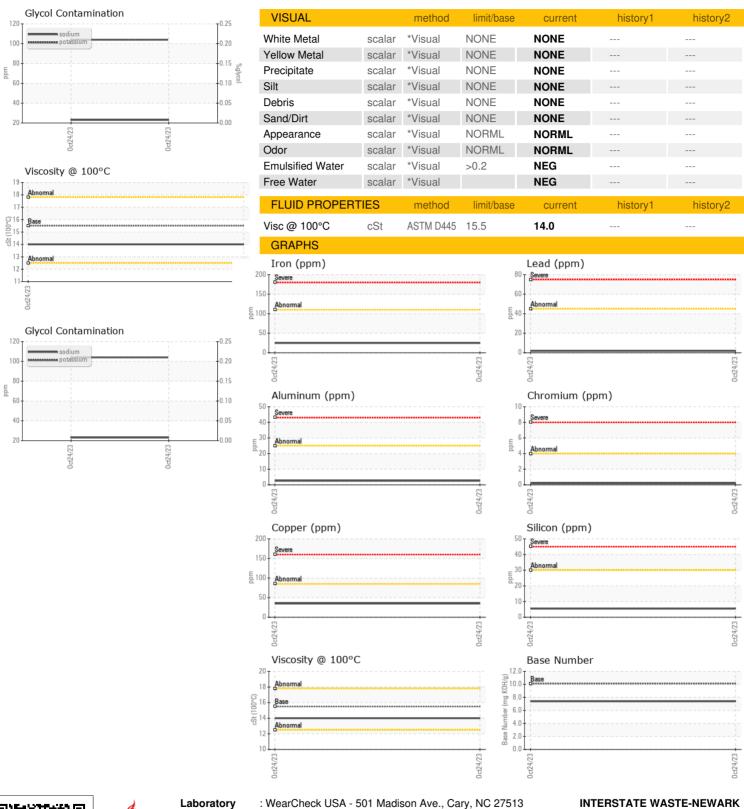
#### **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil.

Sample Number         Client Info         WC0863171            Sample Date         Client Info         24 Oct 2023            Machine Age         hrs         Client Info         0            Oil Age         hrs         Client Info         0            Oil Changed         Client Info         N/A            Sample Status         ABNORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >         <1.0             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >         <1.0             WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >110         25             Iron         ppm         ASTM D5185m         >2         0             Iritarium         ppm         ASTM D5185m <t< th=""><th></th><th></th><th></th><th></th><th>Oct2023</th><th></th><th></th></t<>					Oct2023		
Sample Date   Client Info   Q4 Oct 2023	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   0   .	Sample Number		Client Info		WC0863171		
Oil Age         hrs         Client Info         NA             Oil Changed         Client Info         N/A             Sample Status         ABNORMAL             CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         -5         <1.0	Sample Date		Client Info		24 Oct 2023		
Coli   Changed   Colient Info   N/A	•	hrs	Client Info		0		
ABNORMAL	Oil Age	hrs	Client Info		0		
ABNORMAL	Oil Changed		Client Info		N/A		
WEAR METALS	Sample Status				ABNORMAL		
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >11 0         25             Chromium         ppm         ASTM D5185m         >4         <1	CONTAMINATIO	N	method	limit/base	current	history1	history2
Iron	Fuel		WC Method	>5	<1.0		
Chromium         ppm         ASTM D5185m         >4         <1             Nickel         ppm         ASTM D5185m         >2         0             Titianium         ppm         ASTM D5185m         >2         0             Siliver         ppm         ASTM D5185m         >2         0             Aluminum         ppm         ASTM D5185m         >2         0             Lead         ppm         ASTM D5185m         >45         2             Copper         ppm         ASTM D5185m         >4         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	25		
Description	Chromium	ppm	ASTM D5185m	>4	<1		
Silver	Nickel	ppm	ASTM D5185m	>2	0		
Aluminum	Titanium	ppm	ASTM D5185m		0		
Lead         ppm         ASTM D5185m         >45         2             Copper         ppm         ASTM D5185m         >85         35             Tin         ppm         ASTM D5185m         >4         <1	Silver	ppm	ASTM D5185m	>2	0		
Copper         ppm         ASTM D5185m         >85         35             Tin         ppm         ASTM D5185m         >4         <1	Aluminum	ppm	ASTM D5185m	>25	3		
Tin ppm ASTM D5185m >4 <1	Lead	ppm	ASTM D5185m	>45	2		
Vanadium         ppm         ASTM D5185m         0             ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         11             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         0         712            Magnesium         ppm         ASTM D5185m         1050         1171             Calcium         ppm         ASTM D5185m         1050         1171             Phosphorus         ppm         ASTM D5185m         1270         1136             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;85</td> <td>35</td> <td></td> <td></td>	Copper	ppm	ASTM D5185m	>85	35		
Cadmium         ppm         ASTM D5185m         0             Boron         ppm         ASTM D5185m         11             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         0             Manganese         ppm         ASTM D5185m         <1		ppm	ASTM D5185m	>4	<1		
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         11             Barium         ppm         ASTM D5185m         0             Molybdenum         ppm         ASTM D5185m         66         68             Manganese         ppm         ASTM D5185m         1000         712             Magnesium         ppm         ASTM D5185m         1050         1171             Calcium         ppm         ASTM D5185m         1050         1171             Phosphorus         ppm         ASTM D5185m         1150         976             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         23 <td>Vanadium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <td>0</td> <td></td> <td></td>	Vanadium	ppm	ASTM D5185m		0		
Boron ppm ASTM D5185m 11	Cadmium	ppm	ASTM D5185m		0		
Barium ppm ASTM D5185m 0	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         66         68             Manganese         ppm         ASTM D5185m         1000         712             Calcium         ppm         ASTM D5185m         1050         1171             Phosphorus         ppm         ASTM D5185m         1150         976             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         "ASTM D5185m         >20         NEG             INFRA-RED         method         limit/base         current         history1	Boron	ppm	ASTM D5185m		11		
Manganese         ppm         ASTM D5185m         <1             Magnesium         ppm         ASTM D5185m         1000         712             Calcium         ppm         ASTM D5185m         1050         1171             Phosphorus         ppm         ASTM D5185m         1150         976             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         >20         104             Potassium         ppm         ASTM D5185m         >20         NEG             Glycol         % ASTM D2982         NEG              INFRA-RED         method         limit/base         current         history1	Barium	ppm	ASTM D5185m		0		
Magnesium         ppm         ASTM D5185m         1 000         712             Calcium         ppm         ASTM D5185m         1050         1171             Phosphorus         ppm         ASTM D5185m         1150         976             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D5185m         >20         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.0	Molybdenum	ppm	ASTM D5185m	66	68		
Calcium         ppm         ASTM D5185m         1050         1171             Phosphorus         ppm         ASTM D5185m         1150         976             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D5185m         >20         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Sulfation         Abs/cm         *ASTM D7415         >30         21.0	Manganese	ppm	ASTM D5185m		<1		
Phosphorus         ppm         ASTM D5185m         1150         976             Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D5185m         >20         104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0	Magnesium	ppm	ASTM D5185m	1000	712		
Zinc         ppm         ASTM D5185m         1270         1136             Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Calcium	ppm	ASTM D5185m	1050	1171		
Sulfur         ppm         ASTM D5185m         2891             CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Phosphorus	ppm	ASTM D5185m	1150	976		
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Zinc	ppm	ASTM D5185m	1270	1136		
Silicon         ppm         ASTM D5185m         >30         6             Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Sulfur	ppm	ASTM D5185m		2891		
Sodium         ppm         ASTM D5185m         23             Potassium         ppm         ASTM D5185m         >20         ▲ 104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	CONTAMINANTS	6	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         ▲ 104             Glycol         %         *ASTM D2982         NEG             INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Silicon	ppm	ASTM D5185m	>30	6		
Soot %	Sodium	ppm	ASTM D5185m		23		
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Potassium	ppm	ASTM D5185m	>20	<u> </u>		
Soot %         *ASTM D7844         >3         1.2             Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Glycol	%	*ASTM D2982		NEG		
Nitration         Abs/cm         *ASTM D7624         >20         10.0             Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         21.0             FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         15.6	Soot %	%	*ASTM D7844	>3	1.2		
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 15.6	Nitration	Abs/cm	*ASTM D7624	>20	10.0		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.0		
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 10.1 7.4	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.6		
	Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.4		



# **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number

**Unique Number** 

: WC0863171

: 10725445

: 05997085

Received : 02 Nov 2023 Diagnosed : 07 Nov 2023 Diagnostician : Jonathan Hester

Test Package : MOB 1 ( Additional Tests: Glycol, 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.

US 07114 Contact: Robert Witynski

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RWitynski@interstatewaste.com T:

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

F:

NEWARK, NJ