

OIL ANALYSIS REPORT

Area Bernardsville **PETERBILT 1321**

Component Diesel Engine

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

Recommendation

Resample at the next service interval to monitor.

Wear

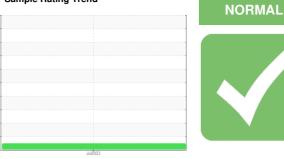
All component wear rates are normal.

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.



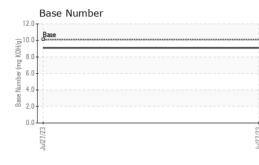
Sample Rating Trend

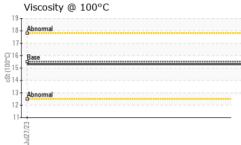


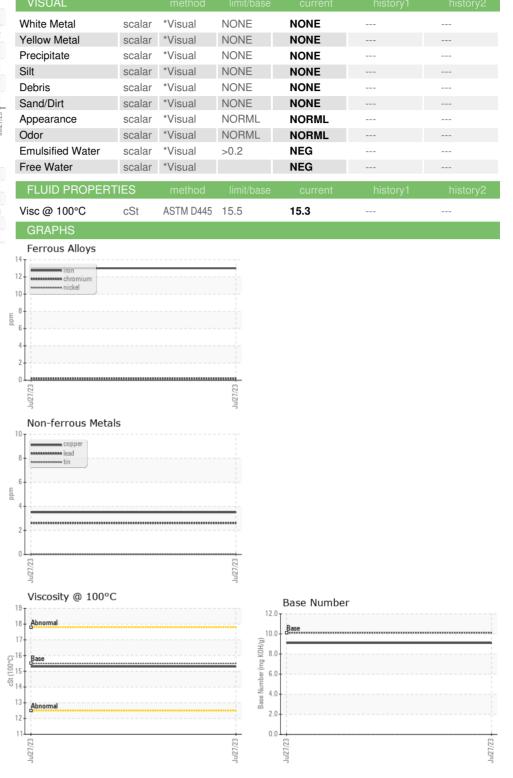
SAMPLE INFORM		mathad	limit/bass	ourropt	biotorud	biotory ()
	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0831061		
Sample Date		Client Info		27 Jul 2023		
Machine Age	mls	Client Info		659738		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINATIO	N	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	13		
Chromium	ppm	ASTM D5185m	>4	<1		
Nickel	ppm	ASTM D5185m	>2	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>25	<1		
Lead	ppm	ASTM D5185m	>45	3		
Copper	ppm	ASTM D5185m	>85	4		
Tin	ppm	ASTM D5185m	>4	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 17	history1	history2
	ppm ppm		limit/base			· · · · ·
Boron		ASTM D5185m	limit/base 660	17		
Boron Barium	ppm	ASTM D5185m ASTM D5185m		17 2		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		17 2 77		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660	17 2 77 0		
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	660 1000	17 2 77 0 929		
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	17 2 77 0 929 1449		
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	17 2 77 0 929 1449 1147		
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	660 1000 1050 1150	17 2 77 0 929 1449 1147 1364		
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 limit/base	17 2 77 0 929 1449 1147 1364 3639		
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	660 1000 1050 1150 1270 limit/base	17 2 77 0 929 1449 1147 1364 3639 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 method	660 1000 1050 1150 1270 limit/base >30	17 2 77 0 929 1449 1147 1364 3639 current 3	 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 method ASTM D5185m	660 1000 1050 1150 1270 limit/base >30	17 2 77 0 929 1449 1147 1364 3639 current 3 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 >30 >20	17 2 77 0 929 1449 1147 1364 3639 current 3 0 1	 history1 	 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	ASTM D5185m ASTM D5185m	660 1000 1050 1150 1270 limit/base >30 >20 limit/base	17 2 77 0 929 1449 1147 1364 3639 <u>current</u> 3 0 1 1 <u>current</u> 0.4	 history1 	 history2 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 limit/base >30 >20 limit/base >3	17 2 77 0 929 1449 1147 1364 3639 current 3 0 1	 history1 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 limit/base >30 s20 limit/base >3 s20	17 2 77 0 929 1449 1147 1364 3639 current 3 0 1 current 0.4 8.4	 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	660 1000 1050 1150 1270 20 30 20 20 33 20 20 33 20 33 20 33 20 33 20 33 20 33 20 33 20 33 20 33 20 33 20 33 20 33 20 20 20 20 20 20 20 20 20 20 20 20 20	17 2 77 0 929 1449 1147 1364 3639 current 3 0 1 current 0.4 8.4 21.1 current	 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	660 1000 1050 1150 1270 iinit/base >30 iinit/base >3 >20 >3 >20	17 2 77 0 929 1449 1147 1364 3639 current 3 0 1 current 0.4 8.4 21.1	 history1 history1 history1	 history2 history2 history2



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Test Package : FLEET Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. PChardon@interstatewaste.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

: WC0831061

: 05923213

: 10603160

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Diagnostician

: 14 Aug 2023

: 15 Aug 2023

: Don Baldridge

Received

Diagnosed

Laboratory

Sample No.

Lab Number

Unique Number

INTERSTATE WASTE-BERNARDSVILLE

33 OLD QUARRY ROAD

BERNARDSVILLE, NJ

Contact: Pablo Chardon

US 07924

T:

F: