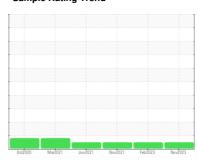


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **2026842**

Component **Diesel Engine**

NOT GIVEN (--- 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.

		0ct2020	Mar2021 Jun2021	Nov2021 Feb2023	Nov2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0108085	PCA0085138	PCA0061635
Sample Date		Client Info		27 Nov 2023	07 Feb 2023	13 Nov 2021
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	43	30	37
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	4	2	6
Lead	ppm	ASTM D5185m	>40	<1	<1	2
Copper	ppm	ASTM D5185m	>330	10	8	35
Tin	ppm	ASTM D5185m	>15	<1	<1	2
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1	history2 3
	ppm		limit/base			
Boron		ASTM D5185m	limit/base	0	2	3
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	0	2	3
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 59	2 0 61	3 0 62
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 59 1	2 0 61 1	3 0 62 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 59 1 946	2 0 61 1 938	3 0 62 <1 954
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 0 59 1 946 1065	2 0 61 1 938 1071	3 0 62 <1 954 1134
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 ASTM D5185m	limit/base	0 0 59 1 946 1065 984	2 0 61 1 938 1071 945	3 0 62 <1 954 1134 902
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 ASTM D5185m	limit/base	0 0 59 1 946 1065 984 1265	2 0 61 1 938 1071 945 1223	3 0 62 <1 954 1134 902 1178
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		0 0 59 1 946 1065 984 1265 2989	2 0 61 1 938 1071 945 1223 3202	3 0 62 <1 954 1134 902 1178 2253
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	0 0 59 1 946 1065 984 1265 2989	2 0 61 1 938 1071 945 1223 3202 history1	3 0 62 <1 954 1134 902 1178 2253 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20	0 0 59 1 946 1065 984 1265 2989 current 6 4	2 0 61 1 938 1071 945 1223 3202 history1 6 <1	3 0 62 <1 954 1134 902 1178 2253 history2 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20	0 0 59 1 946 1065 984 1265 2989 current 6	2 0 61 1 938 1071 945 1223 3202 history1 6 <1	3 0 62 <1 954 1134 902 1178 2253 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20	0 0 59 1 946 1065 984 1265 2989 current 6 4	2 0 61 1 938 1071 945 1223 3202 history1 6 <1	3 0 62 <1 954 1134 902 1178 2253 history2 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20 >5	0 0 59 1 946 1065 984 1265 2989 current 6 4 3 <1.0	2 0 61 1 938 1071 945 1223 3202 history1 6 <1 <1	3 0 62 <1 954 1134 902 1178 2253 history2 4 2 14 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	limit/base >25 >20 >5 limit/base	0 0 59 1 946 1065 984 1265 2989 current 6 4 3 <1.0	2 0 61 1 938 1071 945 1223 3202 history1 6 <1 <1 <1.0	3 0 62 <1 954 1134 902 1178 2253 history2 4 2 14 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D7844	limit/base >25 >20 >5 limit/base >3	0 0 59 1 946 1065 984 1265 2989 current 6 4 3 <1.0	2 0 61 1 938 1071 945 1223 3202 history1 6 <1 <1.0 history1 0.5	3 0 62 <1 954 1134 902 1178 2253 history2 4 2 14 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	limit/base >25	0 0 59 1 946 1065 984 1265 2989 current 6 4 3 <1.0 current 0.6 9.5	2 0 61 1 938 1071 945 1223 3202 history1 6 <1 <1 <1.0 history1 0.5 9.4	3 0 62 <1 954 1134 902 1178 2253 history2 4 2 14 <1.0 history2 0.6 9.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	limit/base >25	0 0 59 1 946 1065 984 1265 2989 current 6 4 3 <1.0 current 0.6 9.5 20.3 current	2 0 61 1 938 1071 945 1223 3202 history1 6 <1 <1 <1.0 history1 0.5 9.4 19.7 history1	3 0 62 <1 954 1134 902 1178 2253 history2 4 2 14 <1.0 history2 0.6 9.7 21.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7415 method	limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	0 0 59 1 946 1065 984 1265 2989 current 6 4 3 <1.0 current 0.6 9.5 20.3	2 0 61 1 938 1071 945 1223 3202 history1 6 <1 <1.0 history1 0.5 9.4 19.7	3 0 62 <1 954 1134 902 1178 2253 history2 4 2 14 <1.0 history2 0.6 9.7 21.5 history2



OIL ANALYSIS REPORT







Laboratory Sample No. Lab Number

Unique Number

: 06032167 : 10781958

cSt (100°C)

10

: PCA0108085

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

Nov13/21

: 12 Dec 2023 : 13 Dec 2023 Diagnostician : Jonathan Hester

Feb7/23

Test Package : FLEET (Additional Tests: FuelDilution) To discuss this sample report, contact Customer Service at 1-800-237-1369.

Viscosity @ 100°C

* - 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)



Base Number

12.0 10.0 (mg K0H/s 8 (

6.0

0.0

2047 HWY 9 WEST DILLON, SC US 29536

Contact: KEVIN HOOKS kevin.hooks@perdue.com T: (843)841-8069

Submitted By: KEVIN HOOKS

F: (843)841-8070

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

NEG

NEG

10.8