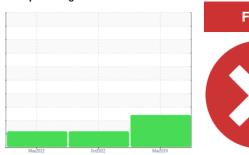


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id

JOHN DEERE 627

Diesel Engine

DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Metal levels are typical for a new component breaking in.

▲ Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

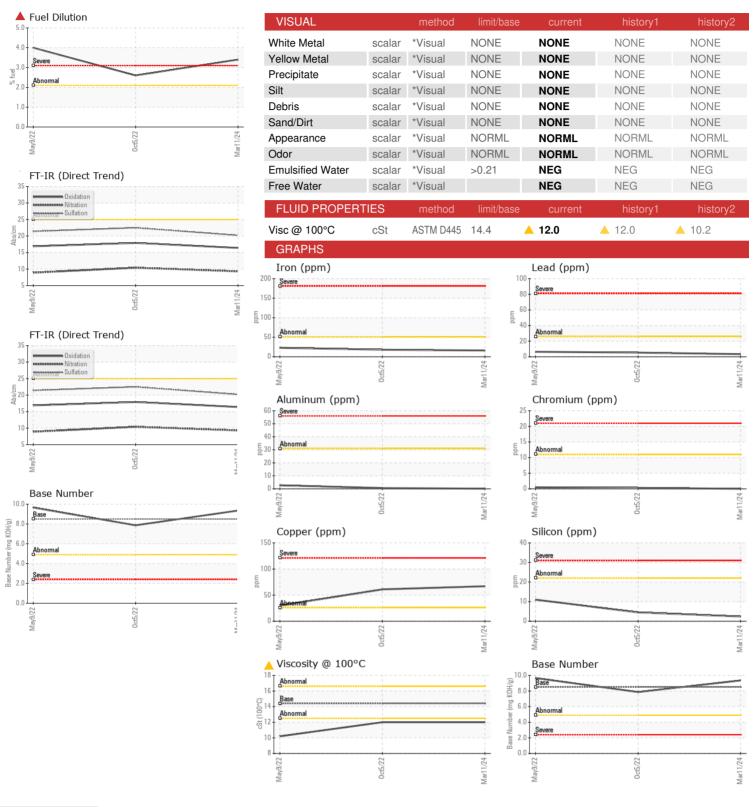
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION method limit/base current history1 history2							
Sample Date Client Info 11 Mar 2024 05 Oct 2022 09 May 2022 Machine Age hrs Client Info 780 497 189 Oil Age hrs Client Info 283 308 189 Oil Changed Client Info Changed Changed Changed Changed Changed Changed Changed ABNORMAL ABNORMA	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 11 Mar 2024 05 Oct 2022 09 May 2022 Machine Age hrs Client Info 780 497 189 Oil Age hrs Client Info 283 308 189 Oil Changed Client Info Changed Changed Changed Changed ABNORMAL ABNO	Sample Number		Client Info		RW0005155	RW0003815	RW0003684
Machine Age hrs Client Info 780 497 189 Oil Age hrs Client Info 283 308 189 Oil Changed Client Info Changed			Client Info		11 Mar 2024	05 Oct 2022	09 May 2022
Oil Age hrs Client Info 283 308 189 Oil Changed Sample Status Client Info Changed C	•	hrs	Client Info		780	497	
Sample Status Method Imitibase current history1 history2 Water WC Method >0.21 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >51 16 18 23 Chromium ppm ASTM D5185m >51 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Nickel ppm ASTM D5185m >3 0 0 0 Huminum ppm ASTM D5185m >31 <1 <1 3 Lead ppm ASTM D5185m >26 67 61 30 Tin ppm ASTM D5185m >26 67 61 30	•	hrs	Client Info		283	308	189
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.21 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >51 16 18 23 Chromium ppm ASTM D5185m >51 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >26 3 5 6 Copper ppm ASTM D5185m >26 67 61 30 Tin ppm ASTM D5185m >26 67 61 30 Vanadium ppm ASTM D5185m 0 0 0 0 Barium	Oil Changed		Client Info		Changed	Changed	Changed
Water Glycol WC Method Glycol >0.21 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >51 16 18 23 Chromium ppm ASTM D5185m >51 16 18 23 Chromium ppm ASTM D5185m >51 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Siiver ppm ASTM D5185m >31 <1	•				SEVERE	ABNORMAL	ABNORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >51 16 18 23 Chromium ppm ASTM D5185m >51 0 0 0 Nickel ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >26 3 5 6 Copper ppm ASTM D5185m >4 1 4 6 Vanadium ppm ASTM D5185m 0 0 0 0 Addium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 10 0 2 0 <th>CONTAMINATIO</th> <th>V</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINATIO	V	method	limit/base	current	history1	history2
WEAR METALS	Water		WC Method	>0.21	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >11 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >5 0 0 0 Titanium ppm ASTM D5185m 0 0 <1	Iron	ppm	ASTM D5185m	>51	16	18	23
Titanium ppm ASTM D5185m 0 0 <1	Chromium	ppm	ASTM D5185m	>11	0	<1	<1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >31 <1	Nickel	ppm	ASTM D5185m	>5	0	0	0
Aluminum ppm ASTM D5185m >31 <1	Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >26 3 5 6 Copper ppm ASTM D5185m >26 67 61 30 Tin ppm ASTM D5185m >4 1 4 6 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 61 78 219 Manganesium ppm ASTM D5185m 100 994 870 802 Calcium ppm ASTM D5185m 3000 1283	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >26 67 61 30 Tin ppm ASTM D5185m >4 1 4 6 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 100 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 2 8 219 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 450 994 870 802 Salifur ppm ASTM D5185m 1150 1142 1044 942 </th <th>Aluminum</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>31</th> <th><1</th> <th><1</th> <th>3</th>	Aluminum	ppm	ASTM D5185m	>31	<1	<1	3
Tin ppm ASTM D5185m >4 1 4 6 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 61 78 219 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1350 1371 1243	Lead	ppm	ASTM D5185m	>26	3	5	6
Vanadium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 61 78 219 Magnesium ppm ASTM D5185m 100 61 78 219 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 22 2 4 11 Sodium ppm ASTM D5185m >158 </th <th>Copper</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>26</th> <th>67</th> <th>61</th> <th>30</th>	Copper	ppm	ASTM D5185m	>26	67	61	30
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 61 78 219 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 450 994 870 802 Phosphorus ppm ASTM D5185m 450 994 870 802 Zinc ppm ASTM D5185m 1150 1142 1044 942 Zinc ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current	Tin	ppm	ASTM D5185m	>4	1	4	6
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 61 78 219 Magnesium ppm ASTM D5185m 100 2 8 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >158	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 250 3 18 233 Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 100 2 8 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 225 2 4 11 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >22	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 10 0 2 0 Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 0 2 8 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D5185m >20							
Molybdenum ppm ASTM D5185m 100 61 78 219 Manganese ppm ASTM D5185m 0 2 8 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1150 1142 1044 942 Zinc ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D5185m	ADDITIVES		method	limit/base	current	history1	history2
Manganese ppm ASTM D5185m 0 2 8 Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1150 1142 1044 942 Zinc ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Solium ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D5185m >2.1 3.4 4 0.6 4.0 INFRA-RED <td< th=""><th></th><th>ppm</th><th></th><th></th><th></th><th>•</th><th></th></td<>		ppm				•	
Magnesium ppm ASTM D5185m 450 994 870 802 Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1150 1142 1044 942 Zinc ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 3.4 2.6 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624	Boron		ASTM D5185m	250	3	18	233
Calcium ppm ASTM D5185m 3000 1283 1194 1319 Phosphorus ppm ASTM D5185m 1150 1142 1044 942 Zinc ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 3.4 2.6 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D741	Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	3 0	18	233
Phosphorus ppm ASTM D5185m 1150 1142 1044 942 Zinc ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 3.4 2.6 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method <th>Boron Barium Molybdenum</th> <th>ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>250 10</th> <th>3 0 61</th> <th>18 2 78</th> <th>233 0 219</th>	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	3 0 61	18 2 78	233 0 219
Zinc ppm ASTM D5185m 1350 1371 1243 1115 Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 ▲ 3.4 ▲ 2.6 ▲ 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method	Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	3 0 61 0	18 2 78 2	233 0 219 8
Sulfur ppm ASTM D5185m 4250 3963 3534 2913 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 ▲ 3.4 ▲ 2.6 ▲ 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm </th <th>Boron Barium Molybdenum Manganese Magnesium</th> <th>ppm ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>250 10 100 450</th> <th>3 0 61 0 994</th> <th>18 2 78 2 870</th> <th>233 0 219 8 802</th>	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	3 0 61 0 994	18 2 78 2 870	233 0 219 8 802
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 3.4 2.6 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	3 0 61 0 994 1283	18 2 78 2 870 1194	233 0 219 8 802 1319
Silicon ppm ASTM D5185m >22 2 4 11 Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 3.4 2.6 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	3 0 61 0 994 1283 1142	18 2 78 2 870 1194 1044	233 0 219 8 802 1319 942
Sodium ppm ASTM D5185m >158 3 2 6 Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 ▲ 3.4 ▲ 2.6 ▲ 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	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 ASTM D5185m	250 10 100 450 3000 1150	3 0 61 0 994 1283 1142	18 2 78 2 870 1194 1044 1243	233 0 219 8 802 1319 942 1115
Potassium ppm ASTM D5185m >20 6 2 5 Fuel % ASTM D3524 >2.1 ▲ 3.4 ▲ 2.6 ▲ 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	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	250 10 100 450 3000 1150 1350 4250	3 0 61 0 994 1283 1142 1371 3963	18 2 78 2 870 1194 1044 1243 3534	233 0 219 8 802 1319 942 1115 2913
Fuel % ASTM D3524 >2.1 ▲ 3.4 ▲ 2.6 ▲ 4.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base	3 0 61 0 994 1283 1142 1371 3963	18 2 78 2 870 1194 1044 1243 3534 history1	233 0 219 8 802 1319 942 1115 2913 history2
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >22	3 0 61 0 994 1283 1142 1371 3963 current	18 2 78 2 870 1194 1044 1243 3534 history1	233 0 219 8 802 1319 942 1115 2913 history2
Soot % % *ASTM D7844 >3 0.4 0.4 0.1 Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 Iimit/base >22 >158	3 0 61 0 994 1283 1142 1371 3963 current 2	18 2 78 2 870 1194 1044 1243 3534 history1 4 2	233 0 219 8 802 1319 942 1115 2913 history2 11 6
Nitration Abs/cm *ASTM D7624 >20 9.3 10.4 8.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5
Sulfation Abs/.1mm *ASTM D7415 >30 20.2 22.5 21.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20 >2.1	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6 ▲ 3.4	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2 1	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20 >2.1 limit/base	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2 ▲ 2.6 history1	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5 4.0
Oxidation Abs/.1mm *ASTM D7414 >25 16.4 17.9 16.9	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20 >2.1 limit/base >3	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6 ▲ 3.4	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2 ▲ 2.6 history1 0.4	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5 ▲ 4.0 history2 0.1
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20 >2.1 limit/base	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6 ▲ 3.4 current 0.4 9.3	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2 △ 2.6 history1 0.4 10.4	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5 ▲ 4.0 history2 0.1 8.9
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20 >2.1 limit/base >3 >20 >30	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6 ▲ 3.4 current 0.4 9.3 20.2	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2 ▲ 2.6 history1 0.4 10.4 22.5	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5 4.0 history2 0.1 8.9 21.4
7.00	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm	ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D7415 method	250 10 100 450 3000 1150 1350 4250 limit/base >22 >158 >20 >2.1 limit/base >3 >20 >30 limit/base	3 0 61 0 994 1283 1142 1371 3963 current 2 3 6 ▲ 3.4 current 0.4 9.3 20.2 current	18 2 78 2 870 1194 1044 1243 3534 history1 4 2 2 ▲ 2.6 history1 0.4 10.4 22.5 history1	233 0 219 8 802 1319 942 1115 2913 history2 11 6 5 ▲ 4.0 history2 0.1 8.9 21.4 history2



OIL ANALYSIS REPORT







Sample No.

: RW0005155

Lab Number : 06146743 Unique Number : 10976821

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

Tested Diagnosed

: 17 Apr 2024 : 17 Apr 2024 - Wes Davis

: 11 Apr 2024

Contact/Location: DAN HALLACK KARL BUTCHER - HALHAR

HART, MI US 49420 Contact: DAN HALLACK KARL BUTCHER

F: (231)873-2889

4223 W POLK

Test Package : MOB 2 (Additional Tests: PercentFuel) Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

shop@hallackcontracting.com T: (231)873-5081

HALLACK CONTRACTING, INC.

* - 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)