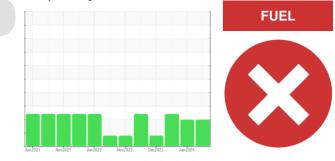
Sample Rating Trend



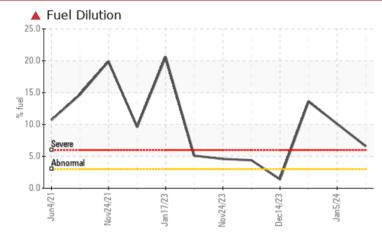
PROBLEM SUMMARY



Machine Id **45555M** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 15W40 (--- GAL)**



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS							
Sample Status				SEVERE	SEVERE	SEVERE	
Fuel	%	ASTM D3524	>3.0	6.6	▲ 10.1	1 3.6	

Customer Id: GFL415 Sample No.: GFL0117664 Lab Number: 06146479 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDE				
	DACTIONS			
Action	Status	Date	Done By	Description
Change Fluid			?	We recommend that already been done.
Resample			?	We recommend an e
Check Fuel/injector System			?	We advise that you o

We recommend that you drain the oil from the component if this has not already been done.

We recommend an early resample to monitor this condition.

We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS



05 Jan 2024 Diag: Wes Davis

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. 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.

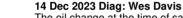


view report



27 Dec 2023 Diag: Wes Davis

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.All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.





The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.







OIL ANALYSIS REPORT

Sample Rating Trend



Diesel Engine PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Machine Id 4555M

Wear

All component wear rates are normal.

Contamination

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

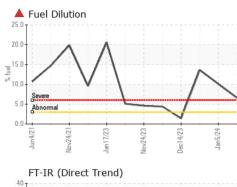
Fluid Condition

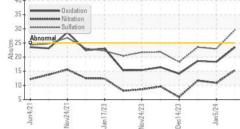
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

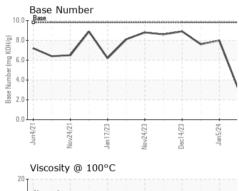
Sample Date Client Info 09 Apr 2024 05 Jan 2024 27 Dec 202 Machine Age hrs Client Info 20700 20313 20247 Oil Age hrs Client Info 20247 20247 20180 Oil Changed Client Info Not Changd SEVERE SEVERE SEVERE CONTAMINATION method Imit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Chromium ppm ASTM 05185m >90 61 30 29 Chromium ppm ASTM 05185m >2 0 0 0 Nickel ppm ASTM 05185m >2 0 0 0 Aumium ppm ASTM 05185m >2 0 0 0 Aumium ppm ASTM 05185m >2 0 0 0 Aumium ppm ASTM 05185m >2 0 0 0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age Oil Age Oil Age hrs Client Info 20700 20313 20247 Oil Age Oil Changed Kient Info 20247 20247 20140 Changed Several 20140 Changed Several 20140 Changed Several 20247 20247 20247 20140 Changed Several 20140 Changed Several 20140 Changed Several	Sample Number		Client Info		GFL0117664	GFL0108723	GFL0105823
Oil Age hrs Client Info 20247 20247 20147 20180 Oil Changed Client Info Not Changd SEVERE SEVERE SEVERE CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Water WC Method >0.2 NEG NEG NEG Tron ppm ASTM D5185m >20 2 <1	Sample Date		Client Info		09 Apr 2024	05 Jan 2024	27 Dec 2023
Oil Changed Sample Status Client Info Not Changd SEVERE Not Changed SEVERE Changed SEVERE Changed SEVERE Changed SEVERE Changed SEVERE Changed SEVERE SEVERE SEVERE	Machine Age	hrs	Client Info		20700	20313	20247
Sample Status SEVERE SEVERE SEVERE SEVERE SEVERE CONTAMINATION method imit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5185m >20 2 <1	Oil Age	hrs	Client Info		20247	20247	20180
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WeAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 61 30 29 Chromium ppm ASTM D5185m >20 0 0 <11	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 2 <1 1 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aduminum ppm ASTM D5185m >20 6 2 3 Lead ppm ASTM D5185m >20 6 2 2 Adadium ppm ASTM D5185m >330 6 2 2 Vanadium ppm ASTM D5185m 15 1 0 0 Adadium ppm ASTM D5185m 0 0 0 0 Copper ppm ASTM D5185m 0 0 0 0 Ad	Sample Status				SEVERE	SEVERE	SEVERE
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 61 30 29 Chromium ppm ASTM D5185m >20 2 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 61 30 29 Chromium ppm ASTM D5185m >20 2 <1	Water		WC Method	>0.2	NEG	NEG	NEG
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Nickel ppm ASTM D5185m >2 0 0 <1 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 6 2 3 Lead ppm ASTM D5185m >40 8 4 6 Copper ppm ASTM D5185m >40 8 4 6 Copper ppm ASTM D5185m >330 6 2 2 1 Vanadium ppm ASTM D5185m 15 1 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Boron ppm ASTM D5185m 0 1 0 0 0 Magnese ppm ASTM D5185m 0 1 0 0 0 Calcium ppm AST	Iron	ppm	ASTM D5185m	>90	61	30	29
Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >20 6 2 3 Lead ppm ASTM D5185m >20 6 2 3 Lead ppm ASTM D5185m >40 8 4 6 Copper ppm ASTM D5185m >330 6 2 2 Tin ppm ASTM D5185m >15 1 0 <1	Chromium	ppm	ASTM D5185m	>20	2	<1	1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >20 6 2 3 Lead ppm ASTM D5185m >40 8 4 6 Copper ppm ASTM D5185m >330 6 2 2 Tin ppm ASTM D5185m >15 1 0 <1	Nickel	ppm	ASTM D5185m	>2	0	0	<1
Aluminum ppm ASTM D5185m >20 6 2 3 Lead ppm ASTM D5185m >40 8 4 6 Copper ppm ASTM D5185m >330 6 2 2 Tin ppm ASTM D5185m >1 0 <1	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >40 8 4 6 Copper ppm ASTM D5185m >330 6 2 2 Tin ppm ASTM D5185m >1 0 <1	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 6 2 2 Tin ppm ASTM D5185m >15 1 0 <1	Aluminum	ppm	ASTM D5185m	>20	6	2	3
Tin ppm ASTM D5185m >15 1 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 2 0 0 Boron ppm ASTM D5185m 0 2 0 0 Barium ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 1 0 0 Magnesium ppm ASTM D5185m 1010 914 843 838 Calcium ppm ASTM D5185m 1070 1045 944 975 Phosphorus ppm ASTM D5185m 1270 1238 1107 1089 Sulfur ppm ASTM D5185m 2060 3233 2761 2587 CONTAMINANTS method limit/base current <td< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>>40</td><th>8</th><td>4</td><td>6</td></td<>	Lead	ppm	ASTM D5185m	>40	8	4	6
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Boron ppm ASTM D5185m 0 2 0 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 55 52 51 Manganese ppm ASTM D5185m 0 1 0 0 Magnesium ppm ASTM D5185m 1010 914 843 838 Calcium ppm ASTM D5185m 1010 914 843 838 Calcium ppm ASTM D5185m 1070 1045 944 975 Phosphorus ppm ASTM D5185m 1150 1023 919 909 Zinc ppm ASTM D5185m 1270 1238 1107 1089 Sulfur ppm ASTM D5185m 2060 3233 2761 2587 CONTAMINANTS method limit/base current history1 history2 Sodium ppm ASTM D5185m	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 55 52 51 Manganese ppm ASTM D5185m 0 1 0 0 Magnesium ppm ASTM D5185m 1010 914 843 838 Calcium ppm ASTM D5185m 1070 1045 944 975 Phosphorus ppm ASTM D5185m 1150 1023 919 909 Zinc ppm ASTM D5185m 1270 1238 1107 1089 Sulfur ppm ASTM D5185m 2060 3233 2761 2587 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 1 3.6 Sodium ppm ASTM D5185m							
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Calcium ppm ASTM D5185m 1070 1045 944 975 Phosphorus ppm ASTM D5185m 1150 1023 919 909 Zinc ppm ASTM D5185m 1270 1238 1107 1089 Sulfur ppm ASTM D5185m 2060 3233 2761 2587 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 2 0 Sooto% % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.1mm *ASTM D7415 <td< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m ASTM D5185m</td><td>0</td><th>2 0</th><td>0 0</td><td>0</td></td<>	Boron	ppm	ASTM D5185m ASTM D5185m	0	2 0	0 0	0
Phosphorus ppm ASTM D5185m 1150 1023 919 909 Zinc ppm ASTM D5185m 1270 1238 1107 1089 Sulfur ppm ASTM D5185m 2060 3233 2761 2587 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >25 6 4 3 Potassium ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D3524 >3.0 ▲ 6.6 10.1 ▲ 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/.mm<*ASTM D7415	Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 55	0 0 52	0 0 51
Zinc ppm ASTM D5185m 1270 1238 1107 1089 Sulfur ppm ASTM D5185m 2060 3233 2761 2587 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 2 0 Sootivm ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D3524 >3.0 ▲ 6.6 10.1 ▲ 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.mm<*ASTM D7415	Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 55 1	0 0 52 0	0 0 51 0
SulfurppmASTM D5185m2060323327612587CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25643SodiumppmASTM D5185m>20120Fuel%ASTM D5185m>20120Fuel%ASTM D5185m>20113.613.6INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>64.42.42.8NitrationAbs/cm*ASTM D7624>2015.410.911.7SulfationAbs/.tm*ASTM D7415>3029.622.923.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.tm*ASTM D7414>2523.518.318.6	Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 0 55 1 914	0 0 52 0 843	0 0 51 0 838
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m >25 6 4 3 Potassium ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D5185m >20 1 2 0 Fuel % ASTM D3524 >3.0 6.6 10.1 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.imm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.imm *ASTM D7414 <	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 0 55 1 914 1045	0 0 52 0 843 944	0 0 51 0 838 975
Silicon ppm ASTM D5185m >25 6 4 3 Sodium ppm ASTM D5185m 4 4 8 Potassium ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D3524 >3.0 ▲ 6.6 ▲ 10.1 ▲ 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.tmm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.tmm *ASTM D7414 >25 23.5 18.3 18.6	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 0 55 1 914 1045 1023	0 0 52 0 843 944 919	0 0 51 0 838 975 909
Sodium ppm ASTM D5185m 4 4 8 Potassium ppm ASTM D5185m<>20 1 2 0 Fuel % ASTM D3524<>3.0 ▲ 6.6 ▲ 10.1 ▲ 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844<>6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624<>20 15.4 10.9 11.7 Sulfation Abs/.1mm *ASTM D7415<>30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414<>25 23.5 18.3 18.6	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	0 0 60 0 1010 1070 1150 1270	2 0 55 1 914 1045 1023 1238	0 0 52 0 843 944 919 1107	0 0 51 0 838 975 909 1089
Potassium ppm ASTM D5185m >20 1 2 0 Fuel % ASTM D3524 >3.0 ▲ 6.6 ▲ 10.1 ▲ 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	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 60 0 1010 1070 1150 1270 2060	2 0 55 1 914 1045 1023 1238 3233	0 0 52 0 843 944 919 1107 2761	0 0 51 0 838 975 909 1089
Fuel % ASTM D3524 >3.0 ▲ 6.6 ▲ 10.1 ▲ 13.6 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm 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 60 1010 1070 1150 1270 2060	2 0 55 1 914 1045 1023 1238 3233 current	0 0 52 0 843 944 919 1107 2761 history1	0 0 51 0 838 975 909 1089 2587 history2
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.mm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.mm *ASTM D7414 >25 23.5 18.3 18.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 55 1 914 1045 1023 1238 3233 current 6	0 0 52 0 843 944 919 1107 2761 history1 4	0 0 51 0 838 975 909 1089 2587 history2 3
Soot % % *ASTM D7844 >6 4.4 2.4 2.8 Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.1mm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Iimit/base	2 0 55 1 914 1045 1023 1238 3233 <u>current</u> 6 4	0 0 52 0 843 944 919 1107 2761 history1 4 4	0 0 51 0 838 975 909 1089 2587 history2 3 8
Nitration Abs/cm *ASTM D7624 >20 15.4 10.9 11.7 Sulfation Abs/.1mm *ASTM D7624 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	2 0 55 1 914 1045 1023 1238 3233 <u>current</u> 6 4 1	0 0 52 0 843 944 919 1107 2761 history1 4 4 2	0 0 51 0 838 975 909 1089 2587 history2 3 8 0
Sulfation Abs/.1mm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base >25 >20 >20	2 0 55 1 914 1045 1023 1238 3233 Current 6 4 1 1 ▲ 6.6	0 0 52 0 843 944 919 1107 2761 history1 4 4 4 2 2 ▲ 10.1	0 0 51 0 838 975 909 1089 2587 history2 3 8 0
Sulfation Abs/.1mm *ASTM D7415 >30 29.6 22.9 23.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 >25 >20 >20 >3.0	2 0 55 1 914 1045 1023 1238 3233 current 6 4 1 1 ▲ 6.6	0 0 52 0 843 944 919 1107 2761 history1 4 4 2 2 ▲ 10.1	0 0 51 0 838 975 909 1089 2587 history2 3 8 0 0 ▲ 13.6
Oxidation Abs/.1mm *ASTM D7414 >25 23.5 18.3 18.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20 >3.0 Imit/base >6	2 0 55 1 914 1045 1023 1238 3233 current 6 4 1 6 4 5.6 current 4.4	0 0 52 0 843 944 919 1107 2761 history1 4 4 2 4 2 10.1 history1 2.4	0 0 51 0 838 975 909 1089 2587 history2 3 8 0 ↓ 13.6 history2 2.8
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 method *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >3.0 imit/base >6 >20	2 0 55 1 914 1045 1023 1238 3233 current 6 4 1 6.6 4 1 6.6 current 4.4 15.4	0 0 52 0 843 944 919 1107 2761 history1 4 4 4 2 10.1 history1 2.4 10.9	0 0 51 0 838 975 909 1089 2587 history2 3 8 0 13.6 13.6 history2 2.8 11.7
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25 >20 >3.0 Imit/base >6 >20 >20	2 0 55 1 914 1045 1023 1238 3233 current 6 4 1 6 6 4 1 6 6 4 1 1 6 6 4 1 1 8 6 6 4 1 1 8 6 6 4 1 1 8 6 6 4 1 1 8 8 9 1 4 1 8 9 1 4 1 9 1 4 1045 1045 1045 1045 1023 1023 1023 1023 1023 1023 1023 1023	0 0 52 0 843 944 919 1107 2761 history1 4 4 2 10.1 history1 2.4 10.9 22.9	0 0 51 0 838 975 909 1089 2587 history2 3 8 0 13.6 13.6 history2 2.8 11.7
Base Number (BN) mg KOH/g ASTM D2896 9.8 3.2 8.0 7.6	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 >3.0 imit/base >6 >20 >30 imit/base	2 0 55 1 914 1045 1023 1238 3233 Current 6 4 1 6 6 4 1 6 6 4 1 1 6 6 4 1 1 6 6 4 1 1 4 4 1 1 4 4 4 1 1 5.4 29.6 Current	0 0 52 0 843 944 919 1107 2761 history1 4 4 4 2 10.1 ► history1 2.4 10.9 22.9	0 0 51 0 838 975 909 1089 2587 history2 3 8 0 ▲ 13.6 history2 2.8 11.7 23.5

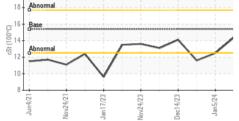


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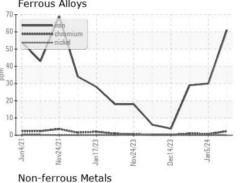


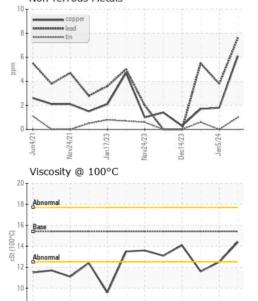


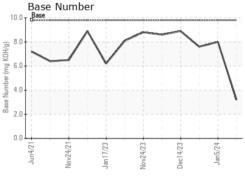


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	12.5	1 1.6
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 415 - Michigan East Sample No. : GFL0117664 6200 Elmridge Received : 11 Apr 2024 Lab Number : 06146479 Tested : 15 Apr 2024 Sterling Heights, MI US 48313 Unique Number : 10976557 Diagnosed : 15 Apr 2024 - Wes Davis ģ Test Package : FLEET (Additional Tests: PercentFuel) Contact: Frank Wolak Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. fwolak@gflenv.com T: (586)825-9514 * - 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) F:

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Jan 17/23

Nov24/21

Jan5/24 -

Dec14/23

8 Jun4/21

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Submitted By: Frank Wolak

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