

# **PROBLEM SUMMARY**

Sample Rating Trend

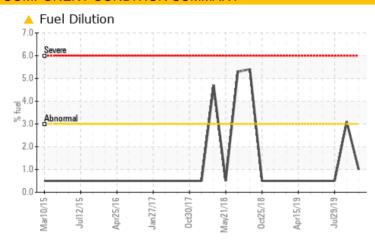


Machine Id 10556 Component

**Diesel Engine** 

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

# **COMPONENT CONDITION SUMMARY**



# RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATION	C TEST	RESULT	S				
Sample Status				MARGINAL	ABNORMAL	NORMAL	
Fuel	0/2	ASTM D3524	>3.0	A 1 0	A 3.1	<1 O	

Customer Id: GFL732 **Sample No.:** GFL0046607 Lab Number: 05898354 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

# RECOMMENDED ACTIONS

There are no recommended actions for this sample.

# HISTORICAL DIAGNOSIS

# 27 May 2022 Diag: Jonathan Hester

FUEL



We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.



06 Sep 2020 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination 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.



12 Jun 2020 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination 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.



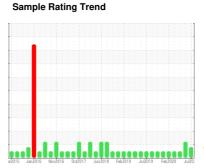


# **OIL ANALYSIS REPORT**

Machine Id 10556 Component

**Diesel Engine** 

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





# DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

# Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

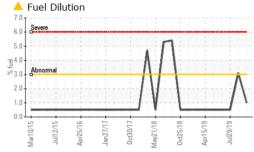
### **Fluid Condition**

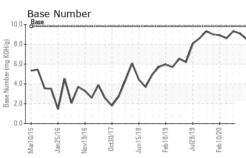
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

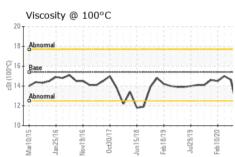
SAMPLE INFORMATION   method   limit/base   current   history1   history2	#AL) #2015 Jan2015 Nev2016 Oct2017 Jum2018 Feb2019 Jul2015 Feb2020 Jul201						
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age Oil Age Oil Age Sample Status         days Client Info Client Info Client Info Sample Status         Client Info Client Info Marginat         0         90         90           Contaged Marginat         Changed Changed Marginat         Changed ABNORMAL         NCRMAL           CONTAMINATION         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >75         6         23         6           Chromium         ppm         ASTM D5185m         >5         <1         <1         <1           Nickel         ppm         ASTM D5185m         >5         <1         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Titanium         ppm         ASTM D5185m         >2         0         0         <1           Silver         ppm         ASTM D5185m         >15         1         8         1           Lead         ppm         ASTM D5185m         >10         1         <1         <1           Copper         ppm         ASTM D5185m         >1         0         0         0           Vanadium         ppm <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>GFL0046607</th> <th>GFL0044640</th> <th>GFL0010011</th>	Sample Number		Client Info		GFL0046607	GFL0044640	GFL0010011
Oil Age         days         Client Info         Not Changed Changed Changed Changed Changed ABNORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         NORMAL         Contanged NORMAL         NO	Sample Date		Client Info		12 Jul 2023	27 May 2022	06 Sep 2020
Oil Changed Sample Status         Client Info         Not Changed MARGINAL         Changed ABNORMAL         Changed NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >75         6         23         6           Chromium         ppm         ASTM D5185m         >5         <1	Machine Age	days	Client Info		0	0	80248
CONTAMINATION         method         limit/base         current         history1         history2           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >75         6         23         6           Chromium         ppm         ASTM D5185m         >5         <1	Oil Age	days	Client Info		0	90	90
CONTAMINATION	Oil Changed		Client Info		Not Changd	Changed	Changed
WEAR METALS	Sample Status				MARGINAL	ABNORMAL	NORMAL
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >75         6         23         6           Chromium         ppm         ASTM D5185m         >5         <1         <1         <1           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Sliver         ppm         ASTM D5185m         >2         1         0         0           Aluminum         ppm         ASTM D5185m         >2         <1         0         0           Aluminum         ppm         ASTM D5185m         >2         <1         0         0           Aluminum         ppm         ASTM D5185m         >100         1         <1         <1           Lead         ppm         ASTM D5185m         >4         <1         <1         0           Copper         ppm         ASTM D5185m         >4         <1         <1         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0	CONTAMINAT	ION	method	limit/base	current	history1	history2
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >5         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1 <td>WEAR METAL</td> <td>S</td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>75	6	23	6
Titanium	Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum         ppm         ASTM D5185m         >15         1         8         1           Lead         ppm         ASTM D5185m         >25         <1	Titanium	ppm	ASTM D5185m	>2	0	0	<1
Lead         ppm         ASTM D5185m         >25         <1         0         0           Copper         ppm         ASTM D5185m         >100         1         <1         <1           Tin         ppm         ASTM D5185m         >4         <1         <1         0           Antimony         ppm         ASTM D5185m         0         0         0         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         14         4         6           Boron         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Magnesium         ppm         ASTM D5185m         0         56         57         56           Magnesium         ppm         ASTM D5185m         1010         878         917         958           Calcium         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1270         1207	Silver	ppm	ASTM D5185m	>2	<1	0	0
Copper         ppm         ASTM D5185m         >100         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1	Aluminum	ppm	ASTM D5185m	>15	1	8	1
Tin         ppm         ASTM D5185m         >4         <1         <1         0           Antimony         ppm         ASTM D5185m           0           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         0         14         4         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         41         4         6           Barium         ppm         ASTM D5185m         0         <1         <1         <1           Manganese         ppm         ASTM D5185m         0         <1         <1         <1         <1           Magnesium         ppm         ASTM D5185m         1010         878         917         958           Calcium         ppm         ASTM D5185m         1070         1068         1271         1045 <td>Lead</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;25</td> <th>&lt;1</th> <td>0</td> <td>0</td>	Lead	ppm	ASTM D5185m	>25	<1	0	0
Antimony         ppm         ASTM D5185m           0           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         0         0         0         0           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         56         57         56           Manganese         ppm         ASTM D5185m         0         <1	Copper	ppm	ASTM D5185m	>100	1	<1	<1
Vanadium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         14         4         6           Barium         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         56         57         56           Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         1010         878         917         958           Calcium         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1270         1207         1289         1118           Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25 </td <td>Tin</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;4</td> <th>&lt;1</th> <td>&lt;1</td> <td>0</td>	Tin	ppm	ASTM D5185m	>4	<1	<1	0
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         144         4         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molydenum         ppm         ASTM D5185m         60         56         57         56           Manganese         ppm         ASTM D5185m         0         <1	Antimony	ppm	ASTM D5185m				0
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         14         4         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         56         57         56           Manganese         ppm         ASTM D5185m         0         <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron         ppm         ASTM D5185m         0         14         4         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         56         57         56           Manganese         ppm         ASTM D5185m         10 10         878         917         958           Calcium         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1270         1207         1289         1118           Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D5185m         >	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         56         57         56           Manganese         ppm         ASTM D5185m         0         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         60         56         57         56           Manganese         ppm         ASTM D5185m         0         <1         <1         <1           Magnesium         ppm         ASTM D5185m         1010         878         917         958           Calcium         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1150         968         1035         1027           Zinc         ppm         ASTM D5185m         1270         1207         1289         1118           Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D7844	Boron	ppm	ASTM D5185m	0	14	4	6
Manganese         ppm         ASTM D5185m         0         <1	Barium	mag	ASTM D5185m	0	0	0	0
Magnesium         ppm         ASTM D5185m         1010         878         917         958           Calcium         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1150         968         1035         1027           Zinc         ppm         ASTM D5185m         1270         1207         1289         1118           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         1.0         3.1         <1.0		1-1-					
Calcium         ppm         ASTM D5185m         1070         1068         1271         1045           Phosphorus         ppm         ASTM D5185m         1150         968         1035         1027           Zinc         ppm         ASTM D5185m         1270         1207         1289         1118           Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         2         4         2           Potassium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         1.0         3.1         <1.0	Molybdenum		ASTM D5185m	60	56	57	56
Phosphorus         ppm         ASTM D5185m         1150         968         1035         1027           Zinc         ppm         ASTM D5185m         1270         1207         1289         1118           Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         1.0         3.1         <1.0	•	ppm					
Zinc         ppm         ASTM D5185m         1270         1207         1289         1118           Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         2         4         2           Potassium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         ▲ 1.0         ▲ 3.1         <1.0	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Sulfur         ppm         ASTM D5185m         2060         3529         3093         2448           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         2         4         2           Potassium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         1.0         3.1         <1.0	Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	1010	<1 878	<1 917	<1 958
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         5         5         3           Sodium         ppm         ASTM D5185m         2         4         2           Potassium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         1.0         3.1         <1.0	Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070	<1 878 1068	<1 917 1271	<1 958 1045
Silicon       ppm       ASTM D5185m       >25       5       5       3         Sodium       ppm       ASTM D5185m       2       4       2         Potassium       ppm       ASTM D5185m       >20       3       4       0         Fuel       %       ASTM D3524       >3.0       1.0       3.1       <1.0         INFRA-RED       method       limit/base       current       history1       history2         Soot %       %       *ASTM D7844       >6       0.2       1.6       0.2         Nitration       Abs/cm       *ASTM D7624       >20       6.4       11.8       6.8         Sulfation       Abs/.1mm       *ASTM D7415       >30       18.3       24.2       19.4         FLUID DEGRADATION       method       limit/base       current       history1       history2         Oxidation       Abs/.1mm       *ASTM D7414       >25       14.4       18.0       14.6	Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150	<1 878 1068 968	<1 917 1271 1035	<1 958 1045 1027
Sodium         ppm         ASTM D5185m         2         4         2           Potassium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         1.0         3.1         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         1.6         0.2           Nitration         Abs/cm         *ASTM D7624         >20         6.4         11.8         6.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.3         24.2         19.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270	<1 878 1068 968 1207	<1 917 1271 1035 1289	<1 958 1045 1027 1118
Potassium         ppm         ASTM D5185m         >20         3         4         0           Fuel         %         ASTM D3524         >3.0         ▲ 1.0         ▲ 3.1         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         1.6         0.2           Nitration         Abs/cm         *ASTM D7624         >20         6.4         11.8         6.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.3         24.2         19.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	<1 878 1068 968 1207 3529	<1 917 1271 1035 1289 3093	<1 958 1045 1027 1118 2448
Fuel         %         ASTM D3524         >3.0         ▲ 1.0         ▲ 3.1         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         1.6         0.2           Nitration         Abs/cm         *ASTM D7624         >20         6.4         11.8         6.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.3         24.2         19.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060	<1 878 1068 968 1207 3529 current	<1 917 1271 1035 1289 3093 history1	<1 958 1045 1027 1118 2448 history2
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.2         1.6         0.2           Nitration         Abs/cm         *ASTM D7624         >20         6.4         11.8         6.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.3         24.2         19.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	0 1010 1070 1150 1270 2060	<1 878 1068 968 1207 3529 current	<1 917 1271 1035 1289 3093 history1	<1 958 1045 1027 1118 2448 history2
Soot %         %         *ASTM D7844 >6         0.2         1.6         0.2           Nitration         Abs/cm         *ASTM D7624 >20         6.4         11.8         6.8           Sulfation         Abs/.1mm         *ASTM D7415 >30         18.3         24.2         19.4           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	<1 878 1068 968 1207 3529 current 5	<1 917 1271 1035 1289 3093 history1 5 4	<1 958 1045 1027 1118 2448 history2 3 2
Nitration         Abs/cm         *ASTM D7624         >20         6.4         11.8         6.8           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.3         24.2         19.4           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25	<1 878 1068 968 1207 3529 current 5 2 3	<1 917 1271 1035 1289 3093 history1 5 4	<1 958 1045 1027 1118 2448 history2 3 2 0
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.3         24.2         19.4           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	<1 878 1068 968 1207 3529 current 5 2 3 1.0	<1 917 1271 1035 1289 3093 history1 5 4 4 4 3.1	<1 958 1045 1027 1118 2448 history2 3 2 0 <1.0
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     14.4     18.0     14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524	0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	<1 878 1068 968 1207 3529	<1 917 1271 1035 1289 3093 history1 5 4 4	<1 958 1045 1027 1118 2448 history2 3 2 0 <1.0 history2
Oxidation         Abs/.1mm         *ASTM D7414         >25         14.4         18.0         14.6	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D3524  method *ASTM D7844	0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6	<1 878 1068 968 1207 3529	<1 917 1271 1035 1289 3093 history1 5 4 4  ▲ 3.1 history1 1.6	<1 958 1045 1027 1118 2448 history2 3 2 0 <1.0 history2 0.2
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20	<1 878 1068 968 1207 3529 current 5 2 3 ▲ 1.0 current 0.2 6.4	<1 917 1271 1035 1289 3093 history1 5 4 4	<1 958 1045 1027 1118 2448 history2 3 2 0 <1.0 history2 0.2 6.8
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7614	0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	<1 878 1068 968 1207 3529	<1 917 1271 1035 1289 3093 history1 5 4 4	<1 958 1045 1027 1118 2448 history2 3 2 0 <1.0 history2 0.2 6.8 19.4
	Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D7524  Method  *ASTM D7624 *ASTM D7615  Method	0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30 limit/base	<1 878 1068 968 1207 3529 current  5 2 3 ▲ 1.0 current  0.2 6.4 18.3 current	<1 917 1271 1035 1289 3093 history1 5 4 4	<1 958 1045 1027 1118 2448 history2 3 2 0 <1.0 history2 0.2 6.8 19.4 history2

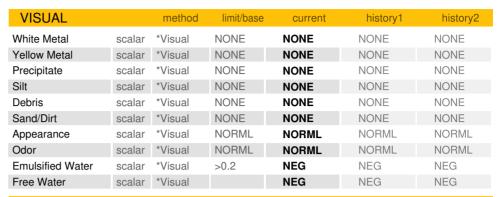


# **OIL ANALYSIS REPORT**



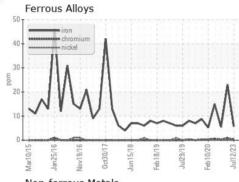


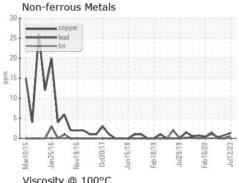


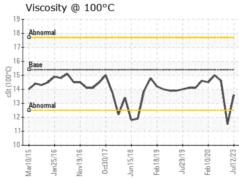


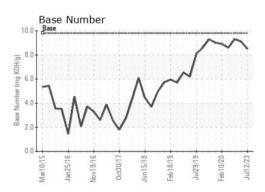
FLUID PROPI	EHITES	method	iiiiii/base	current	riistory i	HIStory
Visc @ 100°C	cSt	ASTM D445	15.4	13.6	<u></u> 11.5	14.6

## **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: GFL0046607 : 05898354 : 10559710

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 14 Jul 2023 Diagnosed

: 17 Jul 2023 Diagnostician : Wes Davis

Test Package : FLEET ( Additional Tests: PercentFuel ) 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. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

GFL Environmental - 732 - Thomaston Hauling

2616 Waynmansville Road Thomaston, GA US 30286

Contact: WILLIAM BROWN william.brown@gflenv.com T: (706)936-4065