

# **OIL ANALYSIS REPORT**

(EDB660) 10709

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (11 GAL)

Sample Rating Trend



# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

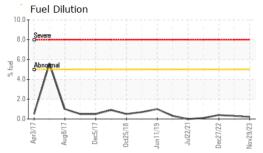
## ▲ Fluid Condition

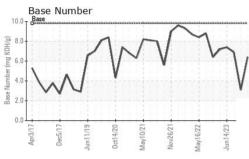
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

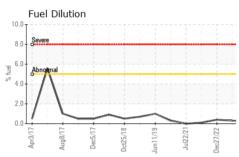
Sample Date         Client Info         19 Jan 2024         29 Nov 2023         05 Sep 2023           Machine Age         hrs         Client Info         20570         20270         19909           Oil Age         hrs         Client Info         300         0         598           Oil Changed         Client Info         Not Changd         Changed         Changed           Sample Status         Not Changd         Changed         Changed           CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         NEG         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2         6         5           Chromium         ppm         ASTM D5185m         >20         <1         0         0           Nickel         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >3	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   20570   20270   19909	Sample Number		Client Info		GFL0074648	GFL0074630	GFL0092493
Oil Age         hrs         Client Info         300         0         598           Oil Changed         Client Info         Not Changed         Chang	Sample Date		Client Info		19 Jan 2024	29 Nov 2023	05 Sep 2023
Oil Changed Sample Status         Client Info         Not Changed ATTENTION         Changed ABNORMAL         Changed NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2         6         5           Chromium         ppm         ASTM D5185m         >100         2         6         5           Chromium         ppm         ASTM D5185m         >20         <1	Machine Age	hrs	Client Info		20570	20270	19909
ATTENTION   ABNORMAL   NORMAL	Oil Age	hrs	Client Info		300	0	598
CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         N.E.G.         NEG.         NEG.         NEG.           Glycol         WC Method         NEG.         NEG.         NEG.         NEG.           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2         6         5           Chromium         ppm         ASTM D5185m         >20         <1         0         0           Nickel         ppm         ASTM D5185m         >20         0         0         0           Silver         ppm         ASTM D5185m         >20         2         2         4           Lead         ppm         ASTM D5185m         >20         0         0         0           Copper         ppm         ASTM D5185m         >33.0         <1         2         4           Tin         ppm         ASTM D5185m         >15         0         0         <1           Vanadium         ppm         ASTM D5185m         0         3         <1         1	Oil Changed		Client Info		Not Changd	Changed	Changed
Water         WC Method         >0.2         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2         6         5           Chromium         ppm         ASTM D5185m         >20         <1	Sample Status				ATTENTION	ABNORMAL	NORMAL
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >100         2         6         5           Chromium         ppm         ASTM D5185m         >20         <1         0         0           Nickel         ppm         ASTM D5185m         >4         0         0         0           Silver         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         4           Lead         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >15         0         0         <1           Vanadium         ppm         ASTM D5185m         >15         0         0         <1           Cadmium         ppm         ASTM D5185m         0         0         0         <1           Cadmium         ppm         ASTM D5185m         0         3         <1 <t< th=""><th>Water</th><th></th><th>WC Method</th><th>&gt;0.2</th><th>NEG</th><th>NEG</th><th>NEG</th></t<>	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >20         <1	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >20         <1         0         0           Nickel         ppm         ASTM D5185m         >4         0         0         0           Titanium         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >3         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         2         4           Lead         ppm         ASTM D5185m         >40         0         0         0         0           Copper         ppm         ASTM D5185m         >40         0         0         0         0           Copper         ppm         ASTM D5185m         >41         0         1         1         0         1           Vanadium         ppm         ASTM D5185m         0         0         0         0         0         1           Cadmium         ppm         ASTM D5185m         0         3         <1         1         1         1         1         1         1         1         1         1         1         1         1	Iron	maa	ASTM D5185m	>100	2	6	5
Nickel         ppm         ASTM D5185m         >4         0         0         0           Titanium         ppm         ASTM D5185m         0         0         0         0           Silver         ppm         ASTM D5185m         >3         0         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         2         2         4         4           Lead         ppm         ASTM D5185m         >40         0		• •					
Titanium							
Silver							
Aluminum         ppm         ASTM D5185m         >20         2         2         4           Lead         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >330         <1				>3			
Lead         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >330         <1         2         4           Tin         ppm         ASTM D5185m         >15         0         0         <1           Vanadium         ppm         ASTM D5185m         >15         0         0         <1           Cadmium         ppm         ASTM D5185m         0         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           Barium         ppm         ASTM D5185m         0         0         0         0         0           Magnesium         ppm         ASTM D5185m         0         0         0         <1         4         6         48           Calcium         ppm         ASTM D5185m         1070         871         <16         661         1255         1166           Phosphorus <th></th> <td>• •</td> <td></td> <td></td> <th></th> <td></td> <td></td>		• •					
Copper         ppm         ASTM D5185m         >330         <1         2         4           Tin         ppm         ASTM D5185m         >15         0         0         <1					_		
Tin         ppm         ASTM D5185m         >15         0         0         <1           Vanadium         ppm         ASTM D5185m         <1         0         <1           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         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         0         <1           Magnesium         ppm         ASTM D5185m         1010         733         416         948           Calcium         ppm         ASTM D5185m         1070         871         4526         1166           Phosphorus         ppm         ASTM D5185m         1270         982         4661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         4144         3350					-		
Vanadium         ppm         ASTM D5185m         <1         0         <1           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3         <1         1           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         51         29         65           Manganese         ppm         ASTM D5185m         1010         733         416         948           Calcium         ppm         ASTM D5185m         1070         871         526         1166           Phosphorus         ppm         ASTM D5185m         1070         871         606         995           Zinc         ppm         ASTM D5185m         1270         982         661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         1414         3350           CONTAMINANTS         method         limit/base         current         history1							
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3         <1	****			>10			
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         3         <1							
Boron		ррпп					
Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         51         29         65           Manganese         ppm         ASTM D5185m         0         0         0         <1           Magnesium         ppm         ASTM D5185m         1010         733         ▲ 416         948           Calcium         ppm         ASTM D5185m         1070         871         ▲ 526         1166           Phosphorus         ppm         ASTM D5185m         1150         871         ▲ 606         995           Zinc         ppm         ASTM D5185m         1270         982         ▲ 661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         ▲ 1414         3350           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D584	ADDITIVES		method				history2
Molybdenum         ppm         ASTM D5185m         60         51         29         65           Manganese         ppm         ASTM D5185m         0         0         0         <1			AOTA DELOE	0	_	4	
Manganese         ppm         ASTM D5185m         0         0         0         <1		• •					
Magnesium         ppm         ASTM D5185m         1010         733         ▲ 416         948           Calcium         ppm         ASTM D5185m         1070         871         ▲ 526         1166           Phosphorus         ppm         ASTM D5185m         1150         871         ▲ 606         995           Zinc         ppm         ASTM D5185m         1270         982         ▲ 661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         ▲ 1414         3350           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         >20         1         0         <1	Barium	ppm	ASTM D5185m	0	0	0	0
Calcium         ppm         ASTM D5185m         1070         871         ▲ 526         1166           Phosphorus         ppm         ASTM D5185m         1150         871         ▲ 606         995           Zinc         ppm         ASTM D5185m         1270         982         ▲ 661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         ▲ 1414         3350           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         20         1         0         <1           Potassium         ppm         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D5185m         >2         <1.0         0.2         <1.0           Soot %         %         *ASTM D7844         >3 </th <th>Barium Molybdenum</th> <th>ppm ppm</th> <th>ASTM D5185m ASTM D5185m</th> <th>0</th> <th>0 51</th> <th>0 29</th> <th>0 65</th>	Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 51	0 29	0 65
Phosphorus         ppm         ASTM D5185m         1150         871         ▲ 606         995           Zinc         ppm         ASTM D5185m         1270         982         ▲ 661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         ▲ 1414         3350           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         2         1         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D3524         >5         <1.0         0.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.2         0.3           Nitration         Abs/:nm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION         *ASTM D7414 <th>Barium Molybdenum Manganese</th> <th>ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>0 60 0</th> <th>0 51 0</th> <th>0 29 0</th> <th>0 65 &lt;1</th>	Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 51 0	0 29 0	0 65 <1
Zinc         ppm         ASTM D5185m         1270         982         ▲ 661         1255           Sulfur         ppm         ASTM D5185m         2060         2501         ▲ 1414         3350           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         2         1         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D3524         >5         <1.0         0.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.2         0.3           Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION         method	Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 51 0 733	0 29 0 • 416	0 65 <1 948
Sulfur         ppm         ASTM D5185m         2060         2501         ▲ 1414         3350           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         2         1         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1         1         0         <1         1         0         <1         1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0         <1         0	Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 51 0 733 871	0 29 0 ▲ 416 ▲ 526	0 65 <1 948 1166
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         2         1         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1	Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 51 0 733 871	0 29 0 ▲ 416 ▲ 526 ▲ 606	0 65 <1 948 1166 995
Silicon         ppm         ASTM D5185m         >25         2         1         3           Sodium         ppm         ASTM D5185m         2         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D3524         >5         <1.0         0.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.2         0.3           Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 51 0 733 871 871 982	0 29 0 ▲ 416 ▲ 526 ▲ 606	0 65 <1 948 1166 995 1255
Sodium         ppm         ASTM D5185m         2         1         1           Potassium         ppm         ASTM D5185m         >20         1         0         <1           Fuel         %         ASTM D3524         >5         <1.0         0.2         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.2         0.3           Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	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	0 60 0 1010 1070 1150 1270	0 51 0 733 871 871 982	0 29 0 ▲ 416 ▲ 526 ▲ 606	0 65 <1 948 1166 995 1255
Potassium         ppm         ASTM D5185m         >20         1         0         <1	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 60 0 1010 1070 1150 1270 2060	0 51 0 733 871 871 982 2501	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414	0 65 <1 948 1166 995 1255
Fuel         %         ASTM D3524         >5         <1.0	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 60 0 1010 1070 1150 1270 2060	0 51 0 733 871 871 982 2501	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414	0 65 <1 948 1166 995 1255 3350 history2
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0.2         0.2         0.3           Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 51 0 733 871 871 982 2501 current	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414 history1	0 65 <1 948 1166 995 1255 3350 history2
Soot %         %         *ASTM D7844         >3         0.2         0.2         0.3           Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 51 0 733 871 871 982 2501 current 2	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414 history1	0 65 <1 948 1166 995 1255 3350 history2
Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 51 0 733 871 871 982 2501 current 2 2	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414  history1 1 0	0 65 <1 948 1166 995 1255 3350 history2 3 1
Nitration         Abs/cm         *ASTM D7624         >20         5.9         5.4         8.0           Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	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	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 51 0 733 871 871 982 2501 current 2 2 1	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414  history1 1 0 0.2	0 65 <1 948 1166 995 1255 3350 history2 3 1 <1
Sulfation         Abs/.1mm         *ASTM D7415         >30         16.8         15.0         18.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         12.0         8.9         14.6	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 51 0 733 871 871 982 2501 current 2 2 1 <1.0	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414  history1  1 0 0.2  history1	0 65 <1 948 1166 995 1255 3350 history2 3 1 <1 <1.0
Oxidation Abs/.1mm *ASTM D7414 >25 <b>12.0</b> 8.9 14.6	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D7844	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5	0 51 0 733 871 871 982 2501 current 2 2 1 <1.0 current 0.2	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414  history1  1 0 0.2  history1 0.2	0 65 <1 948 1166 995 1255 3350 history2 3 1 <1 <1.0
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 60 0 1010 1070 1150 1270 2060 limit/base >25  >20 >5  limit/base >3 >20	0 51 0 733 871 871 982 2501 current 2 2 1 <1.0 current 0.2 5.9	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414  history1 1 0 0.2 history1 0.2 5.4	0 65 <1 948 1166 995 1255 3350 history2 3 1 <1 <1.0 history2 0.3 8.0
	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 D76185m	0 60 0 1010 1170 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30	0 51 0 733 871 871 982 2501 current 2 2 1 <1.0 current 0.2 5.9 16.8	0 29 0 ▲ 416 ▲ 526 ▲ 606 ▲ 661 ▲ 1414  history1  1 0 0.2  history1  0.2  5.4 15.0	0 65 <1 948 1166 995 1255 3350 history2 3 1 <1 <1.0 history2 0.3 8.0 18.7
	Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D7624 *ASTM D7615  method	0 60 0 1010 1070 1150 1270 2060  limit/base >25  >20 >5  limit/base >3 >20 >30  limit/base	0 51 0 733 871 871 982 2501 current 2 2 1 <1.0 current 0.2 5.9 16.8 current	0 29 0 416 4526 606 661 1414 history1 1 0 0.2 history1 0.2 5.4 15.0 history1	0 65 <1 948 1166 995 1255 3350 history2 3 1 <1 <1.0 history2 0.3 8.0 18.7 history2



# **OIL ANALYSIS REPORT**



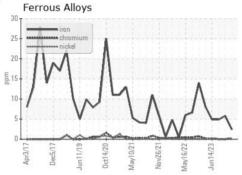


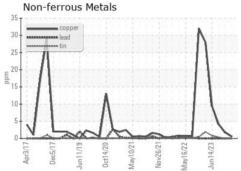


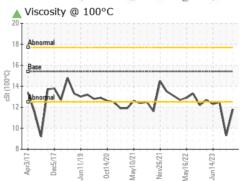
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

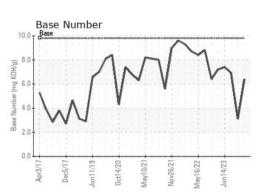
FLUID PROPI	ERHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>11.8</b>	<b>9.3</b>	12.5

## **GRAPHS**













Certificate L2367

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

: GFL0074648

: 06066439 : 10843116

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 22 Jan 2024 Diagnosed : 23 Jan 2024

Diagnostician : Don Baldridge

Test Package : FLEET ( Additional Tests: FuelDilution ) 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 - 095 - Atlanta West

2699 Cochran Industrial Blvd Douglasville, GA US 30127-1332 Contact: Darrell Welch darrell.welch@gflenv.com

T: (800)207-6618

Submitted By: Darrell Welch