

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Diesel Engine Fluid

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

SAMPLE INFORMATION method

### DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

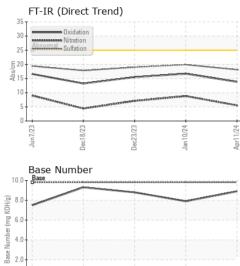
#### Fluid Condition

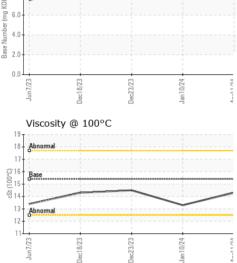
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number         Client Info         GFL0117583         GFL010815         GFL010805           Sample Date         Client Info         11 Apr 2024         10 Jan 2024         23 Dec 2023           Machine Age         hrs         Client Info         17610         0         0           Oil Age         hrs         Client Info         Not Changd         Changed         Changed         Changed         Nor MAL           Sample Status         Image         Client Info         Not Changd         Changed         Changed         Changed         Changed         Nor MAL         Nor MAL           CONTAMINATION         method         Imit/base         current         history1         history2         story1         history2           Fuel         V/C Method         >3.0         <1.0         <1.0         <1.0           Giycol         V/C Method         >3.0         <1.0         <1.0         history2           Fuel         V/C Method         >3.0         <1.0         <1.0         <1.0           Giycol         W/C Method         >3.0         <1         0         <1.0           Contratim         ppm         ASTM 55155         >2         <1         0         <1           Irin			method	iimit/base	current	nistory i	nistoryz
Machine Age         hrs         Client Info         18364         17610         0         0           Oil Age         hrs         Client Info         17610         0         0         0           Oil Age         krs         Client Info         Not Changed         Changed         Changed           Sample Status         n         mitubas         current         NoRMAL         NORMAL           VCOMethod         >3.0         <1.0         <1.0         <1.0           Water         NCC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Chromium         ppm         ASIM Distism         >20         1         0         <1           Chromium         ppm         ASIM Distism         >20         1         0         <1           Nickel         ppm         ASIM Distism         >20         0         0         0           Chromium         ppm         ASIM Distism         >20         2         3         2           Silver         ppm         ASIM Distism         >20         0         0           Chromium         ppm <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>GFL0117583</th> <th>GFL0108815</th> <th>GFL0105806</th>	Sample Number		Client Info		GFL0117583	GFL0108815	GFL0105806
Machine Age         hrs         Client Info         18364         17610         0         0           Oil Age         hrs         Client Info         17610         0         0         0           Oil Age         krs         Client Info         Not Changed         Changed         Changed           Sample Status         n         mitubas         current         NoRMAL         NORMAL           VCOMethod         >3.0         <1.0         <1.0         <1.0           Water         NCC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Chromium         ppm         ASIM Distism         >20         1         0         <1           Chromium         ppm         ASIM Distism         >20         1         0         <1           Nickel         ppm         ASIM Distism         >20         0         0         0           Chromium         ppm         ASIM Distism         >20         2         3         2           Silver         ppm         ASIM Distism         >20         0         0           Chromium         ppm <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>11 Apr 2024</th> <th>10 Jan 2024</th> <th>23 Dec 2023</th>	Sample Date		Client Info		11 Apr 2024	10 Jan 2024	23 Dec 2023
Oil Age         hrs         Client Info         17610         0         0           Oil Changed         Client Info         Not Changed         Changed         Changed           Sample Status         Imit/base         current         History1         History2           Fuel         WC Method         >3.0         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           Vexer METALS         method         Imit/base         current         History1         History2           Iron         ppm         ASTM D585m         >20         <1         0         <1           Kickel         ppm         ASTM D585m         >2         <1         0         <1           Nickel         ppm         ASTM D585m         >2         0         0         0           Aluminum         ppm         ASTM D585m         >40         <1         0         0           Cadmium         ppm         ASTM D585m         >40         <1         0         0           Astinumis         >15         <1		hrs				17610	17478
Oil Changed Sample Status         Client Info         Not Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL         Changed NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         <1.0         <1.0           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         >0.2         NEG         NEG         NEG           VEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         <1         0         <1           Silver         ppm         ASTM D5185m         >20         2         3         2           Lead         ppm         ASTM D5185m         >20         2         3         0           Tin         ppm         ASTM D5185m         >20         2         3         0           Copper         ppm         ASTM D5185m         >40         0         0         0           Copper         ppm         ASTM D5185m         >15         <	0	hrs	Client Info		17610	0	0
Sample Status         NORMAL         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         <1.0         <1.0           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         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >2         0         0         0           Vanadium         ppm         ASTM D5185m         >30         <1         3         0           Vanadium         ppm         ASTM D5185m         0         0         0         0           Vanadium         p	•					Changed	Changed
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         <1.0         <1.0         <1.0           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         >20         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Silver         ppm         ASTM D5185m         >20         2         3         2         <1           Lead         ppm         ASTM D5185m         >15         <1         0         0         <1           Copper         ppm         ASTM D5185m         0         <1         5         <1           Cadmium         ppm         ASTM D5185m         0 <td< th=""><th>-</th><th></th><th></th><th></th><th>•</th><th>0</th><th>0</th></td<>	-				•	0	0
Fuel         WC Method         >3.0         <1.0	-				-	-	-
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         >20         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         0           Silver         ppm         ASTM D5185m         >20         2         3         2           Lead         ppm         ASTM D5185m         >40         <1         0         0           Vanadium         ppm         ASTM D5185m         >15         <1         0         0           Cadper         ppm         ASTM D5185m         0         <1         5         <1           Boron         ppm         ASTM D5185m         0         <1         5         <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >90         4         19         10           Chromium         ppm         ASTM D5185m         >20         <1         0         <1           Nickel         ppm         ASTM D5185m         >2         <1         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         3         2           Lead         ppm         ASTM D5185m         >20         2         3         0           Tin         ppm         ASTM D5185m         >15         <1         0         0           Vanadium         ppm         ASTM D5185m         0         <1         5         <1           Vanadium         ppm         ASTM D5185m         0         <1         0         0           Cadmium         ppm         ASTM D5185m         0         <1         0         0	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5165m         >90         4         19         10           Chromium         ppm         ASTM D5165m         >20         <1         0         <1           Nickel         ppm         ASTM D5165m         >2         <1         0         <1           Titanium         ppm         ASTM D5165m         >2         <1         0         <1           Silver         ppm         ASTM D5165m         >2         0         0         0           Aluminum         ppm         ASTM D5165m         >20         2         3         2           Lead         ppm         ASTM D5165m         >20         2         3         0           Tin         ppm         ASTM D5165m         >0         <1         0         0           Cadmium         ppm         ASTM D5165m         <1         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5165m         0         61         59	Water		WC Method	>0.2	NEG	NEG	NEG
Iron         ppm         ASTM D5185m         >90         4         19         10           Chromium         ppm         ASTM D5185m         >20         <1	Glycol		WC Method		NEG	NEG	NEG
Iron         ppm         ASTM D5185m         >90         4         19         10           Chromium         ppm         ASTM D5185m         >20         <1		c	mathad	limit/bass	ourropt	biotory 1	biotory?
Chromium         ppm         ASTM D5185m         >20         <1		3					
Nickel         ppm         ASTM D5185m         >2         <1	Iron	ppm	ASTM D5185m	>90	4		
Titanium         ppm         ASTM D5185m         >2         <1		ppm	ASTM D5185m	>20	<1		<1
Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >20         2         3         2           Lead         ppm         ASTM D5185m         >40         <1         0         0           Copper         ppm         ASTM D5185m         >330         <1         3         0           Tin         ppm         ASTM D5185m         >15         <1         0         0           Vanadium         ppm         ASTM D5185m         <1         0         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0         0           Cadmium         ppm         ASTM D5185m         0         <1         5         <1           Boron         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1070         1136         1116							
Atuminum         ppm         ASTM D5185m         >20         2         3         2           Lead         ppm         ASTM D5185m         >40         <1         0         0           Copper         ppm         ASTM D5185m         >330         <1         3         0           Tin         ppm         ASTM D5185m         >15         <1         0         0           Vanadium         ppm         ASTM D5185m         >15         <1         0         0           Cadmium         ppm         ASTM D5185m         0         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         5         <1           Barium         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1010         972         992 <th></th> <th>ppm</th> <th></th> <th></th> <th></th> <th></th> <th></th>		ppm					
Lead         ppm         ASTM D5185m         >40         <1	Silver	ppm					
Copper         ppm         ASTM D5185m         >330         <1	Aluminum	ppm	ASTM D5185m	>20	2	3	2
Tin         ppm         ASTM D5185m         >15         <1	Lead	ppm	ASTM D5185m	>40	<1	0	0
Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         5         <1           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         61         59         60           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3	Copper	ppm	ASTM D5185m	>330	<1	3	0
Cadmium         ppm         ASTM D5185m         <1	Tin	ppm	ASTM D5185m	>15	<1	0	0
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         5         <1           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         61         59         60           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m <t< th=""><th>Vanadium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Vanadium	ppm	ASTM D5185m		0	0	0
Boron         ppm         ASTM D5185m         0         <1	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         61         59         60           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1070         1244         1317         1246           Sulfur         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method							
Molybdenum         ppm         ASTM D5185m         60         61         59         60           Manganese         ppm         ASTM D5185m         0         <1         0         0           Magnesium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1070         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844	ADDITIVES		method	limit/base	current	history1	history2
Manganese         ppm         ASTM D5185m         0         <1		ppm					
Magnesium         ppm         ASTM D5185m         1010         972         992         959           Calcium         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1150         1082         1065         1002           Zinc         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.7         0.2           Nitration         Abs/.mm         *ASTM D	Boron		ASTM D5185m	0	<1	5	<1
Calcium         ppm         ASTM D5185m         1070         1136         1116         1084           Phosphorus         ppm         ASTM D5185m         1150         1082         1065         1002           Zinc         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         <1         4           Potassium         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.7         0.2           Nitration         Abs/.m         *ASTM D7844         >6         0.1         0.7         0.2           Sulfation         Abs/.imm         *ASTM D7844 <th>Boron Barium</th> <th>ppm</th> <th>ASTM D5185m ASTM D5185m</th> <th>0</th> <th>&lt;1 0</th> <th>5 0</th> <th>&lt;1 0</th>	Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	<1 0	5 0	<1 0
Phosphorus         ppm         ASTM D5185m         1150         1082         1065         1002           Zinc         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         1         4           Potassium         ppm         ASTM D5185m         >20         2         1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.1mm         *ASTM D7415	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 61	5 0 59	<1 0 60
Zinc         ppm         ASTM D5185m         1270         1244         1317         1246           Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         <1         4           Potassium         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.7         0.2           Nitration         Abs/cm         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 61 <1	5 0 59 0	<1 0 60 0
Sulfur         ppm         ASTM D5185m         2060         3299         3116         3269           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         2         <1         4           Potassium         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.7         0.2           Nitration         Abs/cm         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 61 <1 972	5 0 59 0 992	<1 0 60 0 959
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         >20         1         <1         4           Potassium         ppm         ASTM D5185m         >20         2         <1         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         0.1         0.7         0.2           Nitration         Abs/cm         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.tmm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.tmm         *ASTM D7414         >25         13.8         16.7         15.5	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	<1 0 61 <1 972 1136	5 0 59 0 992 1116	<1 0 60 0 959 1084
Silicon         ppm         ASTM D5185m         >25         3         6         3           Sodium         ppm         ASTM D5185m         1         <1	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	0 0 60 0 1010 1070 1150	<1 0 61 <1 972 1136 1082	5 0 59 0 992 1116 1065	<1 0 60 0 959 1084 1002
Sodium         ppm         ASTM D5185m         1         <1	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	0 0 60 0 1010 1070 1150 1270	<1 0 61 <1 972 1136 1082 1244	5 0 59 0 992 1116 1065 1317	<1 0 60 0 959 1084 1002 1246
Sodium         ppm         ASTM D5185m         1         <1	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	0 0 60 0 1010 1070 1150 1270 2060	<1 0 61 <1 972 1136 1082 1244 3299	5 0 59 0 992 1116 1065 1317 3116	<1 0 60 0 959 1084 1002 1246 3269
Potassium         ppm         ASTM D5185m         >20         2         <1	Boron 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	0 0 60 1010 1070 1150 1270 2060	<1 0 61 <1 972 1136 1082 1244 3299 current	5 0 59 0 992 1116 1065 1317 3116 history1	<1 0 60 0 959 1084 1002 1246 3269 history2
Soot %         %         *ASTM D7844         >6         0.1         0.7         0.2           Nitration         Abs/cm         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.8         16.7         15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	<1 0 61 <1 972 1136 1082 1244 3299 current 3	5 0 59 0 992 1116 1065 1317 3116 history1 6	<1 0 60 0 959 1084 1002 1246 3269 history2 3
Nitration         Abs/cm         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.8         16.7         15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm	ASTM D5185m 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 <b>limit/base</b>	<1 0 61 <1 972 1136 1082 1244 3299 current 3 1	5 0 59 0 992 1116 1065 1317 3116 history1 6 <	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4
Nitration         Abs/cm         *ASTM D7624         >20         5.5         8.8         7.1           Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.8         16.7         15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Jimit/base</b> >25	<1 0 61 <1 972 1136 1082 1244 3299 current 3 1 2	5 0 59 0 992 1116 1065 1317 3116 history1 6 < 1 2 1 2 1	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.1         19.9         19.0           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.8         16.7         15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25	<1 0 61 <1 972 1136 1082 1244 3299 current 3 1 2 2	5 0 59 0 992 1116 1065 1317 3116 history1 6 <1 <1 <1 <1 history1	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3 3 history2
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     13.8     16.7     15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	<1 0 61 <1 972 1136 1082 1244 3299 current 3 1 2 2 current 0.1	5 0 59 0 992 1116 1065 1317 3116 history1 6 <1 <1 <1 history1 0.7	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3 4 3 <i>history2</i> 0.2
Oxidation         Abs/.1mm         *ASTM D7414         >25         13.8         16.7         15.5	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >20	<1 0 61 <1 972 1136 1082 1244 3299 current 3 1 2 current 0.1 5.5	5 0 59 0 992 1116 1065 1317 3116 history1 6 <1 <1 <1 history1 0.7 8.8	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3 4 3 <i>history2</i> 0.2 7.1
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 20 <b>imit/base</b> >6 >20	<1 0 61 <1 972 1136 1082 1244 3299 current 3 1 2 2 current 0.1 5.5 18.1	5 0 59 0 992 1116 1065 1317 3116 history1 6 <1 <1 <1 <1 0.7 8.8 19.9	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3 4 3 <b>history2</b> 0.2 7.1 19.0
Base Number (BN)         mg KUH/g         ASTM D2896         9.8         8.9         7.9         8.8	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 2260 2060 225 220 220 imit/base >6 >20 >30 imit/base	<1 0 61 41 972 1136 1082 1244 3299 Current 3 1 2 Current 0.1 5.5 18.1 Current	5 0 59 0 992 1116 1065 1317 3116 history1 6 <1 <1 <1 history1 0.7 8.8 19.9 history1	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3 0.2 7.1 19.0 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm % Abs/cm Abs/1mm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >6 >20 <b>imit/base</b> 30	<1 0 61 <1 972 1136 1082 1244 3299 <u>current</u> 3 1 2 <u>current</u> 0.1 5.5 18.1 <u>current</u> 13.8	5 0 59 0 992 1116 1065 1317 3116 <b>history1</b> 6 <1 <1 <1 <b>history1</b> 0.7 8.8 19.9 <b>history1</b> 16.7	<1 0 60 0 959 1084 1002 1246 3269 history2 3 4 3 0.2 7.1 19.0 history2 15.5

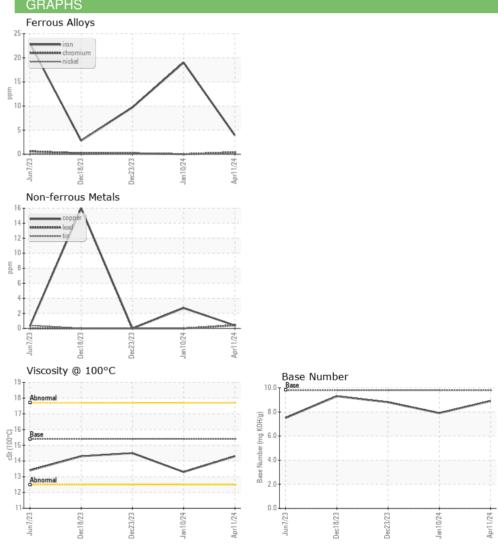


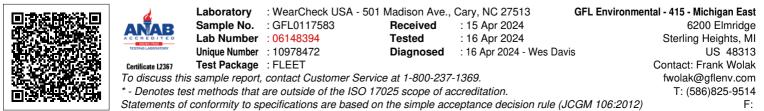
## **OIL ANALYSIS REPORT**





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
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	14.3	13.3	14.5
CRADHS						





Submitted By: Frank Wolak