

## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id **196M** Component **Diesel Engine** Fluid

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

DIAGNOSIS	
Recommendation	

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

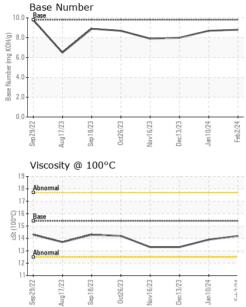
### Fluid Condition

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

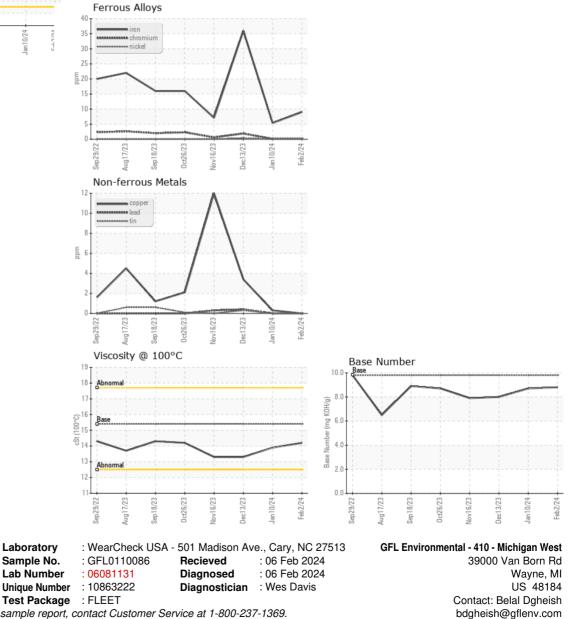
Sample Date         Client Info         02 Feb 2024         10 Jan 2024         13 Dec 2023           Machine Age         hrs         Client Info         12378         12188         11988           Oil Age         hrs         Client Info         600         12042         146           Oil Changed         Client Info         Changed         N/A         NORMAL         NORMAL         NORMAL           Sample Status         Imit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         <1.0         <1.0           Glycol         WC Method         >0.2         NEG         NEG         NEG           WeArr         WC Method         >0.2         NEG         NEG         NEG           Vickel         ppm         ASTM 05165m         >20         9         5         36           Chromium         ppm         ASTM 05165m         >20         0         0         0           Trainium         ppm         ASTM 05165m         >2         0         0         0           Silver         ppm         ASTM 05165m         >2         0         0         1         3           Lead	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         12378         12188         11988           Oil Age         hrs         Client Info         600         12042         146           Oil Changed         Client Info         Changed         NA         NoRMAL         NoRMAL           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           Chromium         ppm         ASTM 05185m         >20         41         <1         2           Chromium         ppm         ASTM 05185m         >20         0         0         0           Silver         ppm         ASTM 05185m         >20         0         0         0           Silver         ppm         ASTM 05185m         >30         0         0         1         3           Silver         ppm         ASTM 05185m         >30         0         <1         3           Grenomium <td< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>GFL0110086</th><th>GFL0110007</th><th>GFL0059272</th></td<>	Sample Number		Client Info		GFL0110086	GFL0110007	GFL0059272
Oil Age         hrs         Client Info         600         12042         146           Oil Changed         Client Info         Changed         N/A           Sample Status         Image         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >0.2         NEG         NEG         NEG           Water         WC Method         >0.2         NEG         NEG         NEG           Water         WC Method         >0.2         NEG         NEG         NEG           WetAR METALS         method         imit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >20         9         5         36           Chromium         ppm         ASTM D5185m         >20         0         0         1           Titanium         ppm         ASTM D5185m         >20         0         0         1           Capper         ppm         ASTM D5185m         >30         0         <1         3           Cadmium         ppm         ASTM D5185m         0         <	Sample Date		Client Info		02 Feb 2024	10 Jan 2024	13 Dec 2023
Oil Changed     Client Info     Changed NORMAL     N/A       Sample Status     Image     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     limit/base     current     History1     History2       Fuel     WC Method     >0.0     <1.0	Machine Age	hrs	Client Info		12378	12188	11988
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           When         NP         ASTM D5186m         >200         9         5         36           Chromium         ppm         ASTM D5186m         >20         0         0         <1           Nickel         ppm         ASTM D5186m         >20         0         0         0           Auminum         ppm         ASTM D5186m         >20         0         0         0           Auminum         ppm         ASTM D5186m         300         2         1         3           Lead         ppm         ASTM D5186m         30         2         1         0           Vanadium         ppm         ASTM D5185m         0         <1         0         0           AstM D5185m         0	Oil Age	hrs	Client Info		600	12042	146
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0         <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         <1         2           Nickel         ppm         ASTM D5185m         >20         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         <1         3           Lead         ppm         ASTM D5185m         >30         0         <1         3         3           Copper         ppm         ASTM D5185m         >30         0         <1         2           Barinum         ppm         ASTM D5185m         0         0         <1         2           Barinum         ppm         ASTM D5185m <td< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th>N/A</th></td<>	Oil Changed		Client Info		Changed	Changed	N/A
Fuel         WC Method         >3.0         <1.0	Sample Status				NORMAL	NORMAL	NORMAL
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         <1         2           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >2         0         0         <1           Copper         ppm         ASTM D5185m         >30         0         <1         3           Lead         ppm         ASTM D5185m         >30         0         <1         0           Cadmium         ppm         ASTM D5185m         0         0         <1         2           Barium         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         0         <1         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         >200         9         5         36           Chromium         ppm         ASTM D5185m         >20         <1         <1         2           Nickel         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >30         2         1         3           Lead         ppm         ASTM D5185m         >30         0         <1         3           Vanadium         ppm         ASTM D5185m         15         0         0         <1           Vanadium         ppm         ASTM D5185m         0         0         <1         0           Cadmium         ppm         ASTM D5185m         0         0         <1         0           ADDITVES         method         limit/base         current         history1         history2           Barium         ppm         ASTM D5185m         0         0         <1         3 </th <th>Fuel</th> <th></th> <th>WC Method</th> <th>&gt;3.0</th> <th>&lt;1.0</th> <th>&lt;1.0</th> <th>&lt;1.0</th>	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >200         9         5         36           Chromium         ppm         ASTM D5185m         >200         <1         <1         2           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Titanium         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >30         0         <1         3           Lead         ppm         ASTM D5185m         >30         0         <1         3           Copper         ppm         ASTM D5185m         >30         0         <1         0           Cadmium         ppm         ASTM D5185m         0         0         <1         0           Cadmium         ppm         ASTM D5185m         0         2         1         2           Braine         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         0         <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         ppm         ASTM D5185m         >200         9         5         36           Chromium         ppm         ASTM D5185m         >20         <1         <1         2           Nickel         ppm         ASTM D5185m         >2         0         0         <1           Titanium         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >30         2         1         3           Lead         ppm         ASTM D5185m         >30         0         <1         3           Copper         ppm         ASTM D5185m         >30         0         <1         0           Cadmium         ppm         ASTM D5185m         >30         0         <1         0           Cadmium         ppm         ASTM D5185m         0         2         1         2         1           Boron         ppm         ASTM D5185m         0         2         1         2         2           Magnesium         ppm         ASTM D5185m         1010         9	Glycol		WC Method		NEG	NEG	NEG
Chromium         ppm         ASTM D5185m         >20         <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >2         0         0         <1	Iron	ppm	ASTM D5185m	>200	9	5	36
Titanium         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >30         2         1         3           Lead         ppm         ASTM D5185m         >30         0         0         <1           Copper         ppm         ASTM D5185m         >30         0         <1         3           Tin         ppm         ASTM D5185m         >30         0         <1         0           Vanadium         ppm         ASTM D5185m         >15         0         0         <1           Cadmium         ppm         ASTM D5185m         0         2         1         2           Boron         ppm         ASTM D5185m         0         5         0         0           Molybdenum         ppm         ASTM D5185m         0         5         0         0           Molybdenum         ppm         ASTM D5185m         0         0         <1         <1           Maganese         ppm         ASTM D5185m         1010         912         969	Chromium	ppm	ASTM D5185m	>20	<1	<1	2
Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >30         2         1         3           Lead         ppm         ASTM D5185m         >30         0         0         <1           Copper         ppm         ASTM D5185m         >30         0         <1         3           Tin         ppm         ASTM D5185m         >15         0         0         <1         0           Cadmium         ppm         ASTM D5185m         >15         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         2         1         2         2           Boron         ppm         ASTM D5185m         0         5         0         0         0           Maganese         ppm         ASTM D5185m         0         5         0         0         0         16         1	Nickel	ppm	ASTM D5185m	>2	0	0	<1
Aluminum         ppm         ASTM D5185m         >30         2         1         3           Lead         ppm         ASTM D5185m         >30         0         0         <1           Copper         ppm         ASTM D5185m         >30         0         <1         3           Tin         ppm         ASTM D5185m         >15         0         0         <1         0           Vanadium         ppm         ASTM D5185m         >15         0         0         <1         0           Cadmium         ppm         ASTM D5185m         0         21         1         2           Boron         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         5         0         0           Magnaese         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1070	Titanium	ppm	ASTM D5185m	>2	0	0	0
Aluminum         ppm         ASTM D5185m         >30         2         1         3           Lead         ppm         ASTM D5185m         >30         0         0         <1           Copper         ppm         ASTM D5185m         >30         0         <1         3           Tin         ppm         ASTM D5185m         >15         0         0         <1         0           Vanadium         ppm         ASTM D5185m         >15         0         0         <1         0           Cadmium         ppm         ASTM D5185m         0         2         1         2         0	Silver				0	0	0
Copper         ppm         ASTM D5185m         >30         0         <1	Aluminum	ppm	ASTM D5185m	>30	2	1	3
Tin         ppm         ASTM D5185m         >15         0         0         <1	Lead	ppm	ASTM D5185m	>30	0	0	<1
Vanadium         ppm         ASTM D5185m         0         <1	Copper	ppm	ASTM D5185m	>30	0	<1	3
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         5         0         0           Magnesium         ppm         ASTM D5185m         0         577         577         52           Magnesium         ppm         ASTM D5185m         0         0         <1	Tin	ppm	ASTM D5185m	>15	0	0	<1
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         5         0         0           Molybdenum         ppm         ASTM D5185m         60         57         57         52           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20	Vanadium	ppm	ASTM D5185m		0	<1	0
Boron         ppm         ASTM D5185m         0         2         1         2           Barium         ppm         ASTM D5185m         0         5         0         0           Molybdenum         ppm         ASTM D5185m         60         57         57         52           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1150         906         1061         916           Zinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base	Cadmium	ppm	ASTM D5185m		0	0	0
Barium         ppm         ASTM D5185m         0         5         0         0           Molybdenum         ppm         ASTM D5185m         60         57         57         52           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1070         965         961         916           Zinc         ppm         ASTM D5185m         1150         906         1061         916           Zinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base							
Molybdenum         ppm         ASTM D5185m         60         57         57         52           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1070         965         961         941           Stinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base	ADDITIVES		method	limit/base	current	history1	history2
Manganese         ppm         ASTM D5185m         0         0         <1	ADDITIVES Boron	ppm					
Magnesium         ppm         ASTM D5185m         1010         912         969         859           Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1150         906         1061         916           Zinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20         2         3         34           Potassium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/.mm         *ASTM D7624 <t< th=""><th></th><th></th><th>ASTM D5185m</th><th>0</th><th>2</th><th>1</th><th>2</th></t<>			ASTM D5185m	0	2	1	2
Calcium         ppm         ASTM D5185m         1070         965         961         941           Phosphorus         ppm         ASTM D5185m         1150         906         1061         916           Zinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/.rm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.imm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         lim	Boron	ppm	ASTM D5185m ASTM D5185m	0	2 5	1 0	2 0
Phosphorus         ppm         ASTM D5185m         1150         906         1061         916           Zinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.tmm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base </th <th>Boron Barium</th> <th>ppm ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>0 0 60</th> <th>2 5 57</th> <th>1 0 57</th> <th>2 0 52</th>	Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 5 57	1 0 57	2 0 52
Zinc         ppm         ASTM D5185m         1270         1159         1248         1180           Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20         2         2         3           Potassium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.tmm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base	Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 5 57 0	1 0 57 <1	2 0 52 <1
Sulfur         ppm         ASTM D5185m         2060         2957         3123         2595           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >20         2         2         3           Potassium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.imm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.imm         *ASTM D7414	Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 5 57 0 912	1 0 57 <1 969	2 0 52 <1 859
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>30547SodiumppmASTM D5185m0334PotassiumppmASTM D5185m>20223INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>300.21NitrationAbs/cm*ASTM D7624>204.55.813.5SulfationAbs/.imm*ASTM D7415>3017.718.224.8FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.imm*ASTM D7414>2513.114.225.0	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 5 57 0 912 965	1 0 57 <1 969 961	2 0 52 <1 859 941
Silicon         ppm         ASTM D5185m         >30         5         4         7           Sodium         ppm         ASTM D5185m         >30         0         3         34           Potassium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.tmm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.tmm         *ASTM D7414         >25         13.1         14.2         25.0	Boron Barium Molybdenum Manganese Magnesium Calcium	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	2 5 57 0 912 965 906	1 0 57 <1 969 961 1061	2 0 52 <1 859 941 916
Sodium         ppm         ASTM D5185m         0         3         34           Potassium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.1         14.2         25.0	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	2 5 57 0 912 965 906 1159	1 0 57 <1 969 961 1061 1248	2 0 52 <1 859 941 916 1180
Potassium         ppm         ASTM D5185m         >20         2         2         3           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.1         14.2         25.0	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	2 5 57 0 912 965 906 1159 2957	1 0 57 <1 969 961 1061 1248 3123	2 0 52 <1 859 941 916 1180 2595
INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.1         14.2         25.0	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 5 57 0 912 965 906 1159 2957 current	1 0 57 <1 969 961 1061 1248 3123 history1	2 0 52 <1 859 941 916 1180 2595 history2
Soot %         %         *ASTM D7844         >3         0         0.2         1           Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.1         14.2         25.0	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 1010 1070 1150 1270 2060	2 5 57 0 912 965 906 1159 2957 current 5	1 0 57 <1 969 961 1061 1248 3123 history1 4	2 0 52 <1 859 941 916 1180 2595 history2 7
Nitration         Abs/cm         *ASTM D7624         >20         4.5         5.8         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.1         14.2         25.0	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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b>	2 5 57 0 912 965 906 1159 2957 current 5 0	1 0 57 <1 969 961 1061 1248 3123 history1 4 3	2 0 52 <1 859 941 916 1180 2595 history2 7 34
Sulfation         Abs/.1mm         *ASTM D7415         >30         17.7         18.2         24.8           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         13.1         14.2         25.0	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>Jimit/base</b> >30	2 5 57 0 912 965 906 1159 2957 current 5 0 2	1 0 57 <1 969 961 1061 1248 3123 history1 4 3 2	2 0 52 <1 859 941 916 1180 2595 history2 7 34 3
FLUID DEGRADATION     method     limit/base     current     history1     history2       Oxidation     Abs/.1mm     *ASTM D7414     >25     13.1     14.2     25.0	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >30 >20	2 5 57 0 912 965 906 1159 2957 current 5 0 2	1 0 57 <1 969 961 1061 1248 3123 history1 4 3 2 history1	2 0 52 <1 859 941 916 1180 2595 history2 7 34 3 3 history2
Oxidation Abs/.1mm *ASTM D7414 >25 13.1 14.2 25.0	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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >30 limit/base >20	2 5 57 0 912 965 906 1159 2957 <i>current</i> 5 0 2 2 <i>current</i> 0	1 0 57 <1 969 961 1061 1248 3123 history1 4 3 2 history1 0.2	2 0 52 <1 859 941 916 1180 2595 history2 7 34 3 3 history2 1
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >3 20	2 5 57 0 912 965 906 1159 2957 <i>current</i> 5 0 2 2 <i>current</i> 0 4.5	1 0 57 <1 969 961 1061 1248 3123 history1 4 3 2 history1 0.2 5.8	2 0 52 <1 859 941 916 1180 2595 history2 7 34 3 3 history2 1 1 13.5
	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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >30 >20 <b>imit/base</b> >3 >20	2 5 57 0 912 965 906 1159 2957 <u>current</u> 5 0 2 2 <u>current</u> 0 4.5 17.7	1 0 57 <1 969 961 1061 1248 3123 history1 4 3 2 history1 0.2 5.8 18.2	2 0 52 <1 859 941 916 1180 2595 history2 7 34 3 3 <u>history2</u> 1 13.5 24.8
	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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >30 >20 <b>imit/base</b> >3 >20 >30	2 5 57 0 912 965 906 1159 2957 current 5 0 2 2 current 0 4.5 17.7 current	1 0 57 <1 969 961 1061 1248 3123 history1 4 3 2 history1 0.2 5.8 18.2 history1	2 0 52 <1 859 941 916 1180 2595 history2 7 34 3 3 history2 1 1 3.5 24.8 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
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	14.2	13.9	13.3
GRAPHS						



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 with ( //

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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