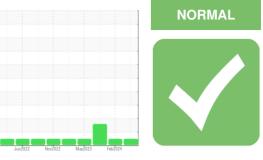


OIL ANALYSIS REPORT

Sample Rating Trend





945001-152555 Component Natural Gas Engine Fluid

Fluid PETRO CANADA DURON GEO LD 15W40 (8 GAL)

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.

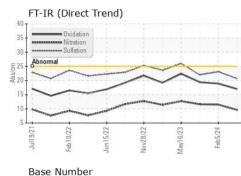
Fluid Condition

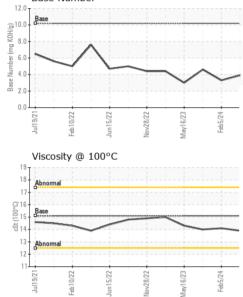
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info ZFL0110800 GFL0088459 GFL0073223 Sample Date Client Info 24 May 2024 05 Feb 2024 16 Nov 2023 Machine Age hrs Client Info 500 600 19391 Oil Age hrs Client Info 600 600 19391 Oil Age hrs Client Info 600 600 19391 Oil Age hrs Client Info 600 600 19391 Oil Age Current History1 History2 History1 History2 Water WC Method >0.1 NEG NCG NCG Normum ppm ASTM 05185m >5 2 3 2 Inon ppm ASTM 05185m >5 2 3 3 1 Silver ppm ASTM 05185m >5 2 3 3 1 Inn ppm ASTM 05185m >5 2 3 3 1 <	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 21537 20955 20389 Oil Age hrs Client Info 600 600 19391 Oil Changed Client Info Changed Changed Changed Changed Sample Status Imit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG Wetar WC Method >0.1 NEG NEG NEG Iron ppm ASTM D5185m >5 2 3 2 Nickel ppm ASTM D5185m >5 2 3 3 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >40 <1 8 7 Silver ppm ASTM D5185m >40 <1 2 4 Vanadium ppm ASTM D5185m >50 2 9 4 Tin ppm	Sample Number		Client Info		GFL0110800	GFL0088459	GFL0073226
Oil Age Irs Client Info 600 600 19391 Oil Changed Client Info Changed Changed Changed Sample Status Image NORMAL NORMAL ABNORMAL CONTAMINATION method Imit/base current History1 History2 Water WC Method >0.1 NEG NEG NEG Water WC Method >0.1 NEG NEG NEG Uron ppm ASTM D5185m >5 2 3 2 Iron ppm ASTM D5185m >5 <1 <1 <1 Itanium ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >4 <1 2 4 Copper ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 0 <1 <1 <1 <1 1 Asadium	Sample Date		Client Info		24 May 2024	05 Feb 2024	16 Nov 2023
Oil Changed Sample StatusClient InfoChanged NORMALChanged NORMALChanged ABNORMALCONTAMINATIONmethodlimit/basecurrenthistory1history2WaterWC Method>0.1NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>50232019ChromiumppmASTM D5185m>50232019ChromiumppmASTM D5185m>50213121NickelppmASTM D5185m>50213131ChangedppmASTM D5185m>50213131SilverppmASTM D5185m>30000AluminumppmASTM D5185m>40<1853CopperppmASTM D5185m>40<1817CadmiumppmASTM D5185m5016419BarumppmASTM D5185m50626060ManganeseppmASTM D5185m50626060ManganeseppmASTM D5185m50614119BarumppmASTM D5185m50626060ManganeseppmASTM D5185m50626060ManganeseppmASTM D5185m50515720CalciumppmASTM D5185m50 </th <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>21537</th> <th>20955</th> <th>20389</th>	Machine Age	hrs	Client Info		21537	20955	20389
Sample Status NORMAL NORMAL NORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG Wetar wC Method >0.1 NEG NEG NEG Wetar wC Method >50 23 20 19 Chromium ppm ASTM D5185m >50 23 20 19 Chromium ppm ASTM D5185m >50 21 3 2 Nickel ppm ASTM D5185m >50 0 0 0 Aluminum ppm ASTM D5185m >25 3 3 3 Lead ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >0 <1 2 4 Vanadium ppm ASTM D5185m 0 <1 1 <1 Nordepm ASTM	Oil Age	hrs	Client Info		600	600	19391
CONTAMINATION method limit/base current history1 history2 Water WC Method<>0.1 NEG NEG NEG Werker WC Method<>0.1 NEG NEG NEG Water WC Method<>0.1 NEG NEG NEG Werker ppm ASTM D5185m >50 23 20 19 Chromium ppm ASTM D5185m >50 23 20 19 Chromium ppm ASTM D5185m >4 <1 3 <1 Nickel ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 <1 8 7 Copper ppm ASTM D5185m >150 2 9 4 <1 Cadmium ppm ASTM D5185m >150 2 9 4 Cadmium ppm ASTM D5185m 0 <1 0 <1 Cadmium </th <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th>Changed</th>	Oil Changed		Client Info		Changed	Changed	Changed
Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 23 20 19 Ohromium ppm ASTM D5185m >5 2 3 2 Nickel ppm ASTM D5185m >4 <1 3 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 3 3 3 3 Lead ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >4 <1 2 4 Vanadium ppm ASTM D5185m 0 <1 0 <1 Cadmium ppm ASTM D5185m 50 16 4 19 Barium ppm ASTM D5185m 50 515 720	Sample Status				NORMAL	NORMAL	ABNORMAL
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 23 20 19 Chromium ppm ASTM D5185m >50 23 20 19 Chromium ppm ASTM D5185m >50 21 3 2 Nickel ppm ASTM D5185m >50 <1 <1 <1 Silver ppm ASTM D5185m >50 <1 <1 <1 <1 Silver ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >150 2 9 4 Tin ppm ASTM D5185m >4 <1 2 4 Vanadium ppm ASTM D5185m 0 <1 0 Copper ppm ASTM D5185m 50 16 4 19 Barium ppm ASTM D5185m 50 16 <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2
Iron ppm ASTM D5185m >50 23 20 19 Chromium ppm ASTM D5185m >5 2 3 2 Nickel ppm ASTM D5185m >4 <1 3 <1 Titanium ppm ASTM D5185m >5 <1 <1 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >40 <1 8 7 Cadmium ppm ASTM D5185m >40 <1 0 <1 Cadmium ppm ASTM D5185m 5 16 4 19 Barium ppm ASTM D5185m 5 5 5 720 Barium ppm ASTM D5185m 560 545 515	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 2 3 2 Nickel ppm ASTM D5185m >4 <1 3 <1 Titanium ppm ASTM D5185m >5 <1 <1 <1 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >25 3 3 3 Lead ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >40 <1 8 7 Cadmium ppm ASTM D5185m >4 <1 2 4 Vanadium ppm ASTM D5185m 50 16 4 19 Barium ppm ASTM D5185m 50 62	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >4 <1	Iron	ppm	ASTM D5185m	>50	23	20	19
Titanium ppm ASTM D5185m >5 <1	Chromium	ppm	ASTM D5185m	>5	2	3	2
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >25 3 3 3 Lead ppm ASTM D5185m >40 <1	Nickel	ppm	ASTM D5185m	>4	<1	3	<1
Aluminum ppm ASTM D5185m >25 3 3 3 Lead ppm ASTM D5185m >40 <1 8 7 Copper ppm ASTM D5185m >150 2 9 4 Tin ppm ASTM D5185m >4 <1 2 4 Vanadium ppm ASTM D5185m >4 <1 2 4 Cadmium ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 50 16 4 19 Boron ppm ASTM D5185m 50 62 60 60 Marganese ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 780 737	Titanium	ppm	ASTM D5185m	>5	<1	<1	<1
Lead ppm ASTM D5185m >40 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >150 2 9 4 Tin ppm ASTM D5185m >4 <1 2 4 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 16 4 19 Barium ppm ASTM D5185m 50 62 60 60 Manganese ppm ASTM D5185m 50 62 61 485 Vanadium ppm ASTM D5185m 50 515 720 Calcium ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 720 2494 2526 2439 CONTAMINANTS method limit/base current hi	Aluminum	ppm	ASTM D5185m	>25	3	3	3
Tin ppm ASTM D5185m >4 <1	Lead	ppm	ASTM D5185m	>40	<1	8	7
Vanadium ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>150	2	9	4
Cadmium ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>4	<1	2	4
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 16 4 19 Barium ppm ASTM D5185m 50 62 60 60 Molybdenum ppm ASTM D5185m 50 62 60 60 Magnesium ppm ASTM D5185m 50 62 61 61 Magnesium ppm ASTM D5185m 560 545 515 720 Calcium ppm ASTM D5185m 1510 1602 1455 1372 Phosphorus ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 2040 2494 2526 2439 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base <t< th=""><th>Vanadium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th><1</th><th><1</th></t<>	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron ppm ASTM D5185m 50 16 4 19 Barium ppm ASTM D5185m 5 <1 15 0 Molybdenum ppm ASTM D5185m 50 62 60 60 Magnese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 560 545 515 720 Calcium ppm ASTM D5185m 1510 1602 1455 1372 Phosphorus ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 870 968 882 959 Sulfur ppm ASTM D5185m 2040 2494 2526 2439 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 1 INFRA-RED method limit/base cu	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 5 <1	ADDITIVES		method	limit/base		historv1	historv2
Molybdenum ppm ASTM D5185m 50 62 60 60 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 560 545 515 720 Calcium ppm ASTM D5185m 1510 1602 1455 1372 Phosphorus ppm ASTM D5185m 780 737 6611 685 Zinc ppm ASTM D5185m 870 968 882 959 Sulfur ppm ASTM D5185m 2040 2494 2526 2439 CONTAMINANT method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 2 <1 INFRA-RED ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7624 <t< th=""><th>7188111720</th><th></th><th>mothod</th><th>in the baco</th><th>ounonit</th><th>motory</th><th></th></t<>	7188111720		mothod	in the baco	ounonit	motory	
Manganese ppm ASTM D5185m 0 <1		ppm					
Magnesium ppm ASTM D5185m 560 545 515 720 Calcium ppm ASTM D5185m 1510 1602 1455 1372 Phosphorus ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 870 968 882 959 Sulfur ppm ASTM D5185m 870 968 882 2439 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 8 25 Sodium ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/.mm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/.Imm *ASTM D7645 >30	Boron Barium		ASTM D5185m	50	16	4	19
Calcium ppm ASTM D5185m 1510 1602 1455 1372 Phosphorus ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 870 968 882 959 Sulfur ppm ASTM D5185m 2040 2494 2526 2439 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 8 ▲ 25 Sodium ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/.mm *ASTM D745 >30 20.7 </th <th>Boron Barium</th> <th>ppm</th> <th>ASTM D5185m ASTM D5185m ASTM D5185m</th> <th>50 5 50</th> <th>16 <1 62</th> <th>4 15</th> <th>19 0</th>	Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	16 <1 62	4 15	19 0
Phosphorus ppm ASTM D5185m 780 737 661 685 Zinc ppm ASTM D5185m 870 968 882 959 Sulfur ppm ASTM D5185m 2040 2494 2526 2439 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 8 ▲ 25 Sodium ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D5185m >20 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/imm *ASTM D7415 >30 20.7 <td< th=""><th>Boron Barium Molybdenum</th><th>ppm ppm</th><th>ASTM D5185m ASTM D5185m ASTM D5185m</th><th>50 5 50</th><th>16 <1 62</th><th>4 15 60</th><th>19 0 60</th></td<>	Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	16 <1 62	4 15 60	19 0 60
Zinc ppm ASTM D5185m 870 968 882 959 Sulfur ppm ASTM D5185m 2040 2494 2526 2439 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 8 ▲ 25 Sodium ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D784# 0.2 0 0 Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/rm *ASTM D7624 >20 9.6 11.5 12.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.0 18.9 19.4	Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	16 <1 62 <1	4 15 60 <1	19 0 60 <1 720
SulfurppmASTM D5185m2040249425262439CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2588▲25SodiumppmASTM D5185m>20963PotassiumppmASTM D5185m>2022<1INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D78440.200NitrationAbs/cm*ASTM D7624>209.611.511.6SulfationAbs/tm*ASTM D7415>3020.723.122.0FLUID DEGRADATION methodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2517.018.919.4	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	16 <1 62 <1 545	4 15 60 <1 515	19 0 60 <1 720
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>2588▲ 25SodiumppmASTM D5185m963PotassiumppmASTM D5185m>2022<1INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D78440.200NitrationAbs/cm*ASTM D7624>209.611.511.6SulfationAbs/tm*ASTM D7415>3020.723.122.0FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.tmm*ASTM D7414>2517.018.919.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	16 <1 62 <1 545 1602 737	4 15 60 <1 515 1455 661	19 0 60 <1 720 1372 685
Silicon ppm ASTM D5185m >25 8 8 ▲ 25 Sodium ppm ASTM D5185m 9 6 3 Potassium ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/.tmm *ASTM D7415 >30 20.7 23.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.tmm *ASTM D7414 >25 17.0 18.9 19.4	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	50 5 50 0 560 1510 780	16 <1 62 <1 545 1602 737	4 15 60 <1 515 1455 661	19 0 60 <1 720 1372 685
Sodium ppm ASTM D5185m 9 6 3 Potassium ppm ASTM D5185m >20 2 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.0 18.9 19.4	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	50 5 50 0 560 1510 780 870	16 <1 62 <1 545 1602 737 968	4 15 60 <1 515 1455 661 882	19 0 60 <1 720 1372 685 959
Potassium ppm ASTM D5185m >20 2 2 <1	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040	16 <1 62 <1 545 1602 737 968 2494	4 15 60 <1 515 1455 661 882 2526	19 0 60 <1 720 1372 685 959 2439
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/.imm *ASTM D7624 >20 9.6 11.5 12.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.imm *ASTM D7414 >25 17.0 18.9 19.4	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	50 5 50 0 560 1510 780 870 2040	16 <1 62 <1 545 1602 737 968 2494 current	4 15 60 <1 515 1455 661 882 2526 history1	19 0 60 <1 720 1372 685 959 2439 history2
Soot % % *ASTM D7844 0.2 0 0 Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.0 18.9 19.4	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 method	50 5 50 0 560 1510 780 870 2040	16 <1 62 <1 545 1602 737 968 2494 current 8	4 15 60 <1 515 1455 661 882 2526 history1 8	19 0 60 <1 720 1372 685 959 2439 history2 ▲ 25
Nitration Abs/cm *ASTM D7624 >20 9.6 11.5 11.6 Sulfation Abs/.tmm *ASTM D7415 >30 20.7 23.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.tmm *ASTM D7414 >25 17.0 18.9 19.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	50 50 50 560 1510 780 870 2040 limit/base >25	16 <1 62 <1 545 1602 737 968 2494 current 8 9	4 15 60 <1 515 1455 661 882 2526 history1 8 6	19 0 60 <1 720 1372 685 959 2439 2439 history2 25 3
Sulfation Abs/.1mm *ASTM D7415 >30 20.7 23.1 22.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.0 18.9 19.4	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	50 5 50 0 560 1510 780 870 2040 2040 limit/base >25	16 <1 62 <1 545 1602 737 968 2494 current 8 9 2	4 15 60 <1 515 1455 661 882 2526 history1 8 6 2	19 0 60 <1 720 1372 685 959 2439 history2 ▲ 25 3 <1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.0 18.9 19.4	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	50 5 50 0 560 1510 780 870 2040 2040 limit/base >25	16 <1 62 <1 545 1602 737 968 2494 current 8 9 2 2	4 15 60 <1 515 1455 661 882 2526 history1 8 6 2 2 history1	19 0 60 <1 720 1372 685 959 2439 2439 bistory2 25 3 <1 kistory2
Oxidation Abs/.1mm *ASTM D7414 >25 17.0 18.9 19.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 2040 225 >25 >20	16 <1 62 <1 545 1602 737 968 2494 current 8 9 2 2 current 0.2	4 15 60 <1 515 1455 661 882 2526 history1 8 6 2 history1 0	19 0 60 <1 720 1372 685 959 2439 history2 25 3 <1 25 3 <1 history2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >25 >20 limit/base	16 <1 62 <1 545 1602 737 968 2494 <i>current</i> 8 9 2 2 <i>current</i> 0.2 9.6	4 15 60 <1 515 1455 661 882 2526 history1 8 6 2 history1 0 11.5	19 0 60 <1 720 1372 685 959 2439 history2 ▲ 25 3 <1 × 1 history2 0 11.6
	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	50 50 50 150 780 870 2040 imit/base >25 imit/base >20	16 <1 62 <1 545 1602 737 968 2494 <u>current</u> 8 9 2 2 <u>current</u> 0.2 9.6 20.7	4 15 60 <1 515 1455 661 882 2526 history1 8 6 2 history1 0 11.5 23.1	19 0 60 <1 720 1372 685 959 2439 bistory2 25 3 <1 25 3 <1 history2 0 11.6 22.0
	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	ASTM D5185m ASTM D7844 *ASTM D7624	50 50 560 1510 780 870 2040 2040 225 225 220 220 imit/base 220 30 imit/base	16 <1 62 <1 545 1602 737 968 2494 <i>current</i> 8 9 2 2 <i>current</i> 0.2 9.6 20.7	4 15 60 <1 515 1455 661 882 2526 history1 8 6 2 history1 0 11.5 23.1 history1	19 0 60 <1 720 1372 685 959 2439 history2 ↓ 25 3 <1 ↓ history2 0 11.6 22.0 ↓



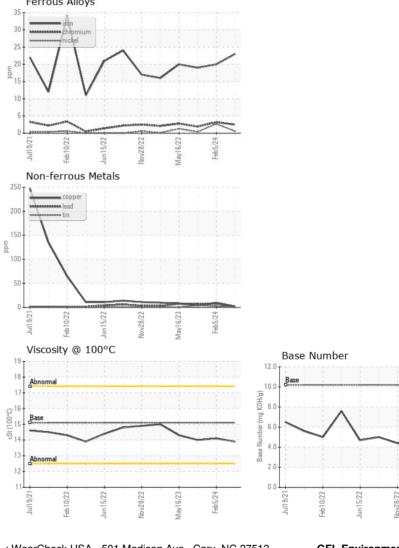
OIL ANALYSIS REPORT

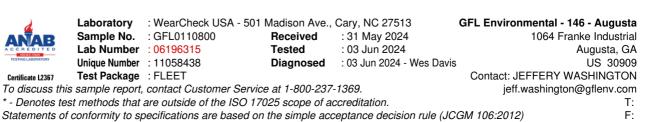




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	DTIES	method	limit/base	current	history1	history2
		methou	IIIIII/Dase	current	TIISTOLA	TIIStOLYZ
Visc @ 100°C	cSt	ASTM D445	15.1	13.9	14.1	14.0
GRAPHS						

Ferrous Alloys





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Certificate 12367

Submitted By: CHRISTOPHER FARRER

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