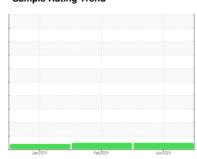


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
517005
Component
Diesel Engine

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

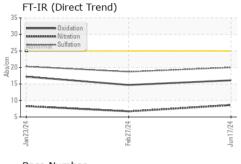
Fluid Condition

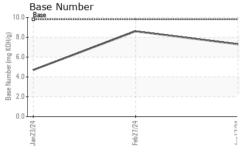
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

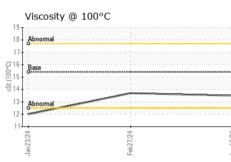
SAMPLE INFORMATION method limit/base current history1 history2	JAL)		Jan	n2024	Feb2024 Jun20	024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0116181	GFL0092550	GFL0100396
Machine Age hrs Client Info 596 246 571 Oil Age hrs Client Info 596 246 571 Oil Changed Client Info Changed Changed Changed Changed Changed Changed ATTENTION Contained Status Image: Client Info Image: Changed NCR NCR ATTENTION CONTAMINATION Image: Client Info Image: Changed NCR NCR NEG NEG<			Client Info		17 Jun 2024	27 Feb 2024	23 Jan 2024
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed ATTENTION CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5.5 <1.0 <1.0 0.2 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 18 13 38 Chromium ppm ASTM D5185m >5 2 <1 0 0 Chromium ppm ASTM D5185m >5 2 <1 0 0 Chromium ppm ASTM D5185m >3 <1 0 0 Silver ppm ASTM D5185m >30 2 0 0 Capper ppm ASTM D5185m >5 <1 <td< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>10616</th><th>10020</th><th>9774</th></td<>	Machine Age	hrs	Client Info		10616	10020	9774
CONTAMINATION	Oil Age	hrs	Client Info		596	246	571
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 0.2 Water WC Method NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 18 13 38 Chromium ppm ASTM D5185m >5 2 <1 2 Nickel ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >2 <1 0 <1 Silver ppm ASTM D5185m >3 <1 0 <1 Silver ppm ASTM D5185m >30 2 0 0 Copper ppm ASTM D5185m >150 3 2 6 Tin ppm AST	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	ATTENTION
Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 18 13 38 Chromium ppm ASTM D5185m >5 2 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 18 13 38 Chromium ppm ASTM D5185m >5 2 <1 2 Nickel ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >30 2 0 0 Aluminum ppm ASTM D5185m >30 2 0 0 Lead ppm ASTM D5185m >30 2 0 0 Copper ppm ASTM D5185m >150 3 2 6 Tin ppm ASTM D5185m >5 <1 0 <1 Cadmium ppm ASTM D5185m <1 0 <1 <t< td=""><td>Fuel</td><td></td><td>WC Method</td><td>>5</td><th><1.0</th><td><1.0</td><td>0.2</td></t<>	Fuel		WC Method	>5	<1.0	<1.0	0.2
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 2 <1 2 Nickel ppm ASTM D5185m >2 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	18	13	38
Titanium ppm ASTM D5185m <1 0 <1 Silver ppm ASTM D5185m >3 <1 0 0 Aluminum ppm ASTM D5185m >30 8 7 20 Lead ppm ASTM D5185m >30 2 0 0 Copper ppm ASTM D5185m >150 3 2 6 Tin ppm ASTM D5185m >5 <1 0 <1 Vanadium ppm ASTM D5185m <1 0 <1 0 Cadmium ppm ASTM D5185m <1 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 <1 <t< td=""><td>Chromium</td><td>ppm</td><td>ASTM D5185m</td><td>>5</td><th>2</th><td><1</td><td>2</td></t<>	Chromium	ppm	ASTM D5185m	>5	2	<1	2
Silver	Nickel	ppm	ASTM D5185m	>2	<1	0	0
Altuminum ppm ASTM D5185m >30 8 7 20 Lead ppm ASTM D5185m >30 2 0 0 Copper ppm ASTM D5185m >150 3 2 6 Tin ppm ASTM D5185m >5 <1	Titanium	ppm	ASTM D5185m		<1	0	<1
Lead ppm ASTM D5185m >30 2 0 0 Copper ppm ASTM D5185m >150 3 2 6 Tin ppm ASTM D5185m >5 <1 0 <1 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 <0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 41 <1 <1 Magnesium ppm ASTM D5185m 0 <1 <1 <1 <1 Calcium ppm ASTM D5185m 1070 1319 1339 1720	Silver	ppm	ASTM D5185m	>3	<1	0	0
Copper ppm ASTM D5185m >150 3 2 6 Tin ppm ASTM D5185m >5 <1	Aluminum	ppm	ASTM D5185m	>30	8	7	20
Tin ppm ASTM D5185m >5 <1 0 <1 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 41 <1	Lead	ppm			2	0	0
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 63 58 59 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1013 1015 416 Calcium ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>150	3	2	6
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 58 59 Manganese ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>5	<1	0	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 58 59 Manganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		<1	0	<1
Boron ppm ASTM D5185m 0 7 8 36 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 58 59 Manganese ppm ASTM D5185m 60 63 58 59 Manganese ppm ASTM D5185m 1010 1013 1015 416 Calcium ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D518	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 63 58 59 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 63 58 59 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1013 1015 416 Calcium ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1150 1110 1175 952 Zinc ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % "ASTM D76	Boron	ppm	ASTM D5185m	0			
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 1013 1015 416 Calcium ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1150 1110 1175 952 Zinc ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 4 3 4 Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624<	Barium	ppm			-		
Magnesium ppm ASTM D5185m 1010 1013 1015 416 Calcium ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1150 1110 1175 952 Zinc ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/.1mm *ASTM		ppm					
Calcium ppm ASTM D5185m 1070 1319 1339 1720 Phosphorus ppm ASTM D5185m 1150 1110 1175 952 Zinc ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 15 8 31 Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION m	-	ppm	ASTM D5185m				
Phosphorus ppm ASTM D5185m 1150 1110 1175 952 Zinc ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/.mm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation A	_	ppm					
Zinc ppm ASTM D5185m 1270 1416 1380 1226 Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 15 8 31 Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/.mm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm<		ppm					
Sulfur ppm ASTM D5185m 2060 3694 3563 3030 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m >20 15 8 31 Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m <1							
Silicon ppm ASTM D5185m >20 4 3 4 Sodium ppm ASTM D5185m <1 1 2 Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2			ASTM D5185m	2060	3694	3563	3030
Sodium ppm ASTM D5185m <1 1 2 Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2		ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 15 8 31 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2				>20			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2		ppm			<1		
Soot % % *ASTM D7844 >3 0.6 0.3 0.5 Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2	Potassium	ppm	ASTM D5185m	>20	15	8	31
Nitration Abs/cm *ASTM D7624 >20 8.6 6.7 8.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.0 18.7 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2	Soot %	%	*ASTM D7844	>3	0.6		0.5
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2	Nitration	Abs/cm	*ASTM D7624	>20	8.6	6.7	8.3
Oxidation Abs/.1mm *ASTM D7414 >25 16.1 14.7 17.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	18.7	20.3
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.3 8.6 4.7	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.1	14.7	17.2
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.3	8.6	4.7



OIL ANALYSIS REPORT



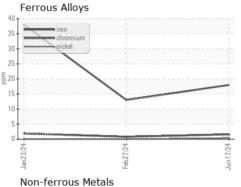




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

13.5

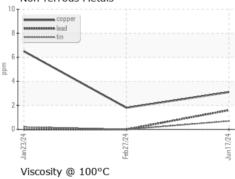
Visc @	100°C
GRA	PHS

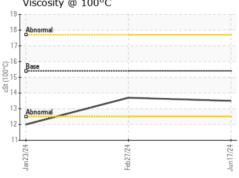


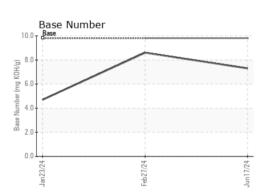
FLUID PROPERTIES method

cSt

ASTM D445 15.4







13.7

12.0





Certificate 12367

Sample No.

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0116181 Lab Number : 06219030 Unique Number : 11097227

Received : 24 Jun 2024 **Tested**

: 25 Jun 2024 Diagnosed : 25 Jun 2024 - Wes Davis

GFL Environmental - 935 - Omro HC 250 Alder Avenue Omro, WI US 54963

Contact: Tim Kieffer tim.kieffer@gflenv.com T: (608)219-0288

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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