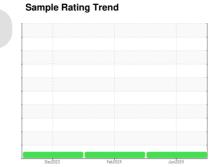


OIL ANALYSIS REPORT









Machine Id 135M Component **Diesel Engine**

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

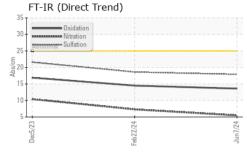
Fluid Condition

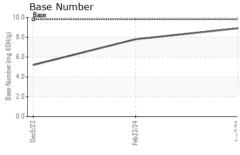
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

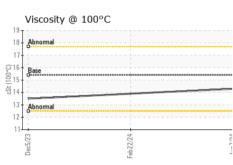
Client Info CFL0114384 CFL0110118 CFL011014 CFL01014 C	N SHP 15W4U (-	GAL)	De	c2023	Feb2024 Jun20	24	
Client Info	SAMPLE INFOF	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 18332 17746 Oil Age hrs Client Info 0 18332 0 Oil Age hrs Client Info Not Changd Not Changd Not Changd Normal Sample Status Image Image Normal Neg 1	Sample Number		Client Info		GFL0114384	GFL0110118	GFL0101433
Dil Age	Sample Date		Client Info		07 Jun 2024	22 Feb 2024	05 Dec 2023
Contained Client Info Not Changd Normal Normal	Machine Age	hrs	Client Info		0	18332	17746
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 water Wc Method >0.2 NEG NEG	Oil Age	hrs	Client Info		0	18332	0
CONTAMINATION	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Water	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG ACT NEG NEG NEG ACT ACT NEG NEG	CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 4 7 17 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>120	4	7	17
Silver	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	<1	<1	2
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Deead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper	Aluminum	ppm	ASTM D5185m	>20	4	2	5
Tin	_ead	ppm	ASTM D5185m	>40	0	<1	<1
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history3 Boron ppm ASTM D5185m 0 4 2 3 Barium ppm ASTM D5185m 0 0 34 <1 Wolybdenum ppm ASTM D5185m 0 56 57 61 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 924 873 859 Calcium ppm ASTM D5185m 1070 1050 993 1020 Phosphorus ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	1	1	7
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history3 Boron ppm ASTM D5185m 0 4 2 3 Barium ppm ASTM D5185m 0 0 34 <1	Γin	ppm	ASTM D5185m	>15	<1	<1	1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron ppm ASTM D5185m 0 0 0 34 34 34 34 34	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 57 61 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 924 873 859 Calcium ppm ASTM D5185m 1070 1050 993 1020 Phosphorus ppm ASTM D5185m 1150 1092 977 916 Zinc ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m >20 3 2 2 Potassium ppm ASTM D5185m >20 3 2 2 Soot % *ASTM D7844 >4 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td></td> <td>2</td> <td>3</td>	Boron	ppm	ASTM D5185m	0		2	3
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 924 873 859 Calcium ppm ASTM D5185m 1070 1050 993 1020 Phosphorus ppm ASTM D5185m 1150 1092 977 916 Zinc ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m 2 4 70 2 Potassium ppm ASTM D5185m 20 3 2 2 Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7845	Barium	ppm	ASTM D5185m	0	0	34	<1
Magnesium ppm ASTM D5185m 1010 924 873 859 Calcium ppm ASTM D5185m 1070 1050 993 1020 Phosphorus ppm ASTM D5185m 1150 1092 977 916 Zinc ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m >20 3 2 2 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/.1mm *ASTM D74	Molybdenum	ppm	ASTM D5185m	60	56	57	61
Calcium ppm ASTM D5185m 1070 1050 993 1020 Phosphorus ppm ASTM D5185m 1150 1092 977 916 Zinc ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history Solicon ppm ASTM D5185m >25 4 4 24 Solicon ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1092 977 916 Zinc ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method li	Magnesium	ppm	ASTM D5185m	1010	924	873	859
Zinc ppm ASTM D5185m 1270 1250 1192 1164 Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Calcium	ppm	ASTM D5185m	1070	1050	993	1020
Sulfur ppm ASTM D5185m 2060 3630 3316 2704 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Phosphorus	ppm	ASTM D5185m	1150	1092	977	916
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Zinc	ppm	ASTM D5185m	1270	1250	1192	1164
Silicon ppm ASTM D5185m >25 4 4 24 Sodium ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Sulfur	ppm	ASTM D5185m	2060	3630	3316	2704
Sodium ppm ASTM D5185m 2 4 70 Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 2 2 INFRA-RED method limit/base current history1 history Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9		ppm	ASTM D5185m	>25	4	4	24
INFRA-RED		ppm	ASTM D5185m		2		70
Soot % % *ASTM D7844 >4 0.2 0.3 0.7 Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Potassium	ppm	ASTM D5185m	>20	3	2	2
Nitration Abs/cm *ASTM D7624 >20 5.5 7.3 10.4 Sulfation Abs/.1mm *ASTM D7615 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 18.6 21.6 FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Soot %	%	*ASTM D7844	>4	0.2	0.3	0.7
FLUID DEGRADATION method limit/base current history1 history Oxidation Abs/.1mm *ASTM D7414 >25 13.6 14.5 16.9	Nitration	Abs/cm	*ASTM D7624	>20	5.5	7.3	10.4
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	18.6	21.6
	FLUID DEGRA	NOITAG	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.9 7.8 5.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	14.5	16.9
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.9	7.8	5.2

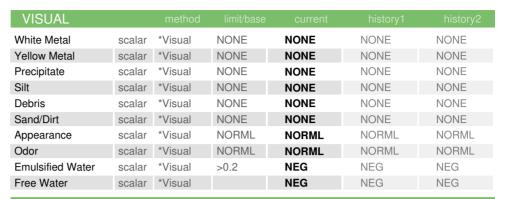


OIL ANALYSIS REPORT



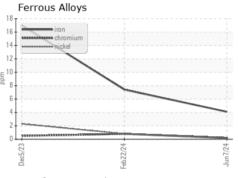


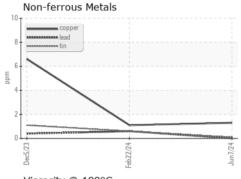


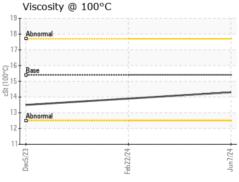


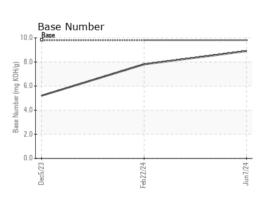
FLUID PROPI	ERHES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	13.9	13.5

GRAPHS













Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0114384 Lab Number : 06212811 Unique Number : 11085675

Received : 17 Jun 2024 **Tested** : 19 Jun 2024 Diagnosed

: 19 Jun 2024 - Wes Davis

GFL Environmental - 468 - Dearborn

3051 Schaefer Rd Dearborn, MI US 48126 Contact:

Test Package : FLEET Certificate 12367 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)

Report Id: GFL468 [WUSCAR] 06212811 (Generated: 06/21/2024 22:10:56) Rev: 1

Submitted By: seel also GFL468 - Laura Wilson

T:

F: