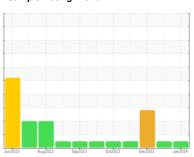


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **413051**

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

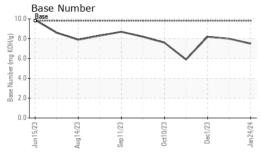
Fluid Condition

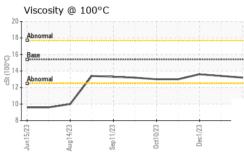
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method Imitibase current history1 history2	GAL)		Jun2023	Aug2023 Sep2023	Oct2023 Dec2023	Jan 2024	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 1630 1475 0 Oil Age hrs Client Info 1182 1475 0 Oil Chaged Client Info Changed N/A N/A Sample Status NCRMAL NCRMAL ABNORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method NEG NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history2 Iron ppm ASTM D5185m >100 11 9 59 Chromium ppm ASTM D5185m >20 <1 <1 4 Nickel ppm ASTM D5185m >3 <1 0 <1 <1 Silver ppm ASTM D5185m >3 <1 0 <1 <1 <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>GFL0104846</th> <th>GFL0104934</th> <th>GFL0088146</th>	Sample Number		Client Info		GFL0104846	GFL0104934	GFL0088146
Oil Age hrs Client Info 1182 1475 0 Oil Changed Sample Status Client Info Changed N/A N/A N/A CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 9 59 Chromium ppm ASTM D5185m >100 11 9 59 Chromium ppm ASTM D5185m >20 <1 <1 4 Nickel ppm ASTM D5185m >3 <1 0 <1 <1 Lead ppm ASTM D5185m >30 3 2 1114 <1 <1 <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>24 Jan 2024</th> <th>21 Dec 2023</th> <th>01 Dec 2023</th>	Sample Date		Client Info		24 Jan 2024	21 Dec 2023	01 Dec 2023
Oil Changed Sample Status Client Info Changed NORMAL NORMAL N/A N/A ABNORMAL ABNORMAL CONTAMINATION method limit/base current history1 bistory2 Fuel WC Method >5 <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 >100 11 9 59 Chromium ppm ASTM D5185m >20 <1 <1 4 Nickel ppm ASTM D5185m >20 <1 <1 4 Silver ppm ASTM D5185m >20 3 2 114 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >303 3 3 463	Machine Age	hrs	Client Info		1630	1475	0
Sample Status MORMAL NORMAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Age	hrs	Client Info		1182	1475	0
Fuel	Oil Changed		Client Info		Changed	N/A	N/A
Fuel WC Method >5 <1.0	Sample Status				NORMAL	NORMAL	ABNORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 11 9 59 Chromium ppm ASTM D5185m >20 <1 <1 4 Nickel ppm ASTM D5185m >4 5 3 2 Silver ppm ASTM D5185m >4 0 <1 <1 Aluminum ppm ASTM D5185m >20 3 2 114 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >15 <1 1 11 Vanadium ppm ASTM D5185m >10 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Vanad	CONTAMINA	ΓΙΟΝ	method	limit/base	current	history1	history2
Silycol	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 4 Nickel ppm ASTM D5185m >4 5 3 2 Titanium ppm ASTM D5185m >3 <1	WEAR METAI	_S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >4 5 3 2 Titanium ppm ASTM D5185m 0 <1	Iron	ppm	ASTM D5185m	>100	11	9	59
Titanium ppm ASTM D5185m 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	4
Silver ppm ASTM D5185m >3 <1	Nickel	ppm	ASTM D5185m	>4	5	3	2
Aluminum ppm ASTM D5185m >20 3 2 ▲ 114 Lead ppm ASTM D5185m >40 0 0 <1	Titanium	ppm	ASTM D5185m		0	<1	<1
Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 3 ▲ 463 Tin ppm ASTM D5185m >15 <1 1 11 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 54 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 21 <1 5 Magnesium ppm ASTM D5185m 0 <1 <1 5 Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072	Silver	ppm	ASTM D5185m	>3		0	<1
Copper ppm ASTM D5185m >330 3 ▲ 463 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	3	2	<u> </u>
Tin ppm ASTM D5185m >15 <1 1 11 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 54 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 54 58 71 Manganese ppm ASTM D5185m 0 <1	Lead	ppm	ASTM D5185m	>40		0	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 54 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 54 58 71 Manganese ppm ASTM D5185m 0 <1 <1 5 Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	3	3	<u>▲</u> 463
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 54 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 -1 -1 5 Manganese ppm ASTM D5185m 0 -1 -1 5 Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1100 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current	Tin	ppm	ASTM D5185m	>15		1	
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 1 54 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 54 58 71 Manganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		0	0	
Boron ppm ASTM D5185m 0 2 1 54 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 54 58 71 Manganese ppm ASTM D5185m 60 54 58 71 Manganese ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1270 1202 1263 1171 Zinc ppm ASTM D5185m 220 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m >20 3 1 277 INFRA-RED method limit/base cu	Cadmium	ppm	ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 54 58 71 Manganese ppm ASTM D5185m 0 <1 <1 5 Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1150 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m >20 3 1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 54 58 71 Manganese ppm ASTM D5185m 0 <1 <1 5 Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1150 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m >20 3 1 277 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844	Boron	ppm	ASTM D5185m	0			54
Manganese ppm ASTM D5185m 0 <1 <1 5 Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1150 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m >20 3 1 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cmm *AST	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 886 1017 717 Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1150 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m 20 3 1 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7414 >3 0.3 0.2 0.1 Nitration Abs/:nm *ASTM D7415 <t< th=""><th></th><th>ppm</th><th></th><th></th><th></th><th></th><th></th></t<>		ppm					
Calcium ppm ASTM D5185m 1070 950 1072 2150 Phosphorus ppm ASTM D5185m 1150 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/:nm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base<	Manganese	ppm	ASTM D5185m	0	<1		5
Phosphorus ppm ASTM D5185m 1150 954 1110 1011 Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/ba	-	ppm			886		
Zinc ppm ASTM D5185m 1270 1202 1263 1171 Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 <th></th> <th>ppm</th> <th>ASTM D5185m</th> <th>1070</th> <th></th> <th></th> <th>2150</th>		ppm	ASTM D5185m	1070			2150
Sulfur ppm ASTM D5185m 2060 2819 3288 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5	-	ppm			-		
Silicon ppm ASTM D5185m >25 4 5 11 Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 △ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5			ASTM D5185m	2060	2819	3288	3154
Sodium ppm ASTM D5185m 2 1 6 Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 1 ▲ 277 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5		ppm	ASTM D5185m				
Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5	Potassium	ppm	ASTM D5185m	>20	3	1	<u> </u>
Nitration Abs/cm *ASTM D7624 >20 7.1 6.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.6 18.1 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5							
FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2514.614.213.5		Abs/cm		>20			
Oxidation Abs/.1mm *ASTM D7414 >25 14.6 14.2 13.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	18.1	17.7
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.5 8.0 8.2	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	14.2	13.5
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.5	8.0	8.2



OIL ANALYSIS REPORT

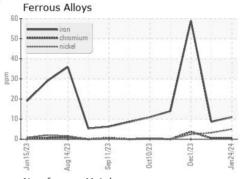


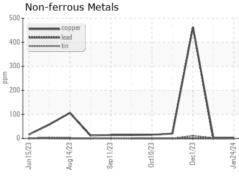


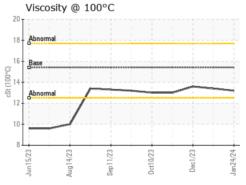
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

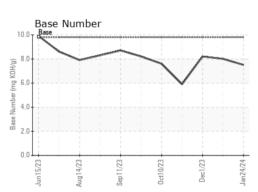
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.4	13.6	

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0104846 : 06074405

: 10856496

Recieved : 30 Jan 2024 Diagnosed : 31 Jan 2024

Diagnostician : Wes Davis

GFL Environmental - 820 - Joplin Hauling

3700 West 7th Street Joplin, MO US 64801

Contact: James Jarrett jjarrett@gflenv.com

T: (417)310-2802

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)