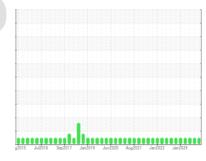


OIL ANALYSIS REPORT

Area (**P587730**) 2573

Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 GAL)



Sample Rating Trend



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

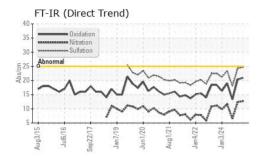
Fluid Condition

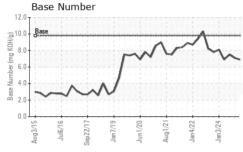
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

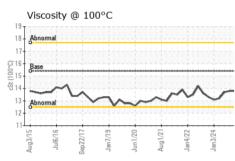
Sample Number Client Info GFL01109578 GFL0110365 GFL0110375 Sample Date Client Info 23 May 2024 16 May 2024 15 Feb 2024 16 May 2024 2862 2862 2000 0 C I. 0 Contains 16 May 2024 1	SAMDI E INEODM	ΛΤΙΩΝ	method	limit/base	O Front	history 1	hiotonyo
Sample Date		AHUN		IIIIII/Dase		•	history2
Machine Age							
Oil Age hrs Client Info 23452 23000 0 Oil Changed Client Info Changed N/A Not Changed Sample Status NORMAL 1.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 <td></td> <td></td> <td></td> <td></td> <th>-</th> <td>,</td> <td></td>					-	,	
Contained Client Info Changed N/A Nor Changed NORMAL							
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2		nrs					· ·
Fuel	-		Client Info				_
Fuel	<u> </u>				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method Imitibase Current history1 history2 WEAR METALS method limitibase current history1 history2 Iron ppm ASTM D5185m >165 22 23 4 Chromium ppm ASTM D5185m >5 1 1 <1 Nickel ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >20 3 3 1 Lead ppm ASTM D5185m >20 3 3 1 Lead ppm ASTM D5185m >90 <1 <1 <1 <1 Copper ppm ASTM D5185m 5 <1 <1 <1 <1 Vanadium ppm ASTM D5185m 0	CONTAMINATIO	NC	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >5 1 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>165	22	23	4
Titanium	Chromium	ppm	ASTM D5185m	>5	1	1	<1
Titanium	Nickel	ppm	ASTM D5185m	>4	0	0	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	0	0	<1
Lead	Silver	ppm	ASTM D5185m	>2	0	0	<1
Copper ppm ASTM D5185m >90 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Aluminum	ppm	ASTM D5185m	>20	3	3	1
Tin	Lead	ppm	ASTM D5185m	>150	4	5	<1
Tin	Copper	ppm	ASTM D5185m	>90	<1	<1	<1
Vanadium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 15 9 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 68 72 60 Manganese ppm ASTM D5185m 0 <1			ASTM D5185m	>5	<1	<1	<1
Cadmium ppm ASTM D5185m 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 15 9 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1			ASTM D5185m		0	0	<1
Boron ppm ASTM D5185m 0 7 15 9			ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 68 72 60 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 68 72 60 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 962 975 890 Calcium ppm ASTM D5185m 1070 1123 1128 1062 Phosphorus ppm ASTM D5185m 1150 1110 1134 988 Zinc ppm ASTM D5185m 1270 1282 1288 1147 Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current	Boron	ppm	ASTM D5185m	0	7	15	9
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 962 975 890 Calcium ppm ASTM D5185m 1070 1123 1128 1062 Phosphorus ppm ASTM D5185m 1150 1110 1134 988 Zinc ppm ASTM D5185m 1270 1282 1288 1147 Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *AST	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 962 975 890 Calcium ppm ASTM D5185m 1070 1123 1128 1062 Phosphorus ppm ASTM D5185m 1150 1110 1134 988 Zinc ppm ASTM D5185m 1270 1282 1288 1147 Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	60	68	72	60
Calcium ppm ASTM D5185m 1070 1123 1128 1062 Phosphorus ppm ASTM D5185m 1150 1110 1134 988 Zinc ppm ASTM D5185m 1270 1282 1288 1147 Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m >35 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1110 1134 988 Zinc ppm ASTM D5185m 1270 1282 1288 1147 Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m >35 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION <	Magnesium	ppm	ASTM D5185m	1010	962	975	890
Zinc ppm ASTM D5185m 1270 1282 1288 1147 Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *	Calcium	ppm	ASTM D5185m	1070	1123	1128	1062
Sulfur ppm ASTM D5185m 2060 3443 3519 3682 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Phosphorus	ppm	ASTM D5185m	1150	1110	1134	988
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Zinc	ppm	ASTM D5185m	1270	1282	1288	1147
Silicon ppm ASTM D5185m >35 6 7 4 Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Sulfur	ppm	ASTM D5185m	2060	3443	3519	3682
Sodium ppm ASTM D5185m 16 16 0 Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 15 14 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Silicon	ppm	ASTM D5185m	>35	6	7	4
INFRA-RED	Sodium	ppm	ASTM D5185m		16	16	0
Soot % % *ASTM D7844 > 7.5 1.5 1.4 0.2 Nitration Abs/cm *ASTM D7624 > 20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 > 30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 > 25 20.9 20.4 13.3	Potassium	ppm	ASTM D5185m	>20	15	14	4
Nitration Abs/cm *ASTM D7624 >20 12.7 12.4 6.5 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Soot %	%	*ASTM D7844	>7.5	1.5	1.4	0.2
Sulfation Abs/.1mm *ASTM D7415 >30 24.7 24.3 18.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Nitration	Abs/cm	*ASTM D7624	>20	12.7	12.4	6.5
Oxidation Abs/.1mm *ASTM D7414 >25 20.9 20.4 13.3	Sulfation	Abs/.1mm	*ASTM D7415	>30		24.3	18.0
	FLUID DEGRAD	NOITA	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.9	20.4	13.3
			ASTM D2896	9.8	6.9	7.1	7.5



OIL ANALYSIS REPORT



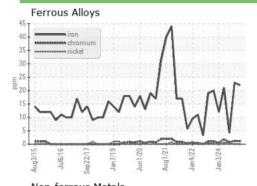


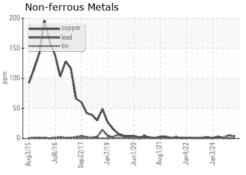


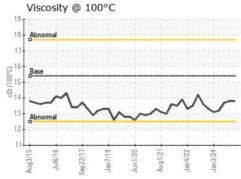
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

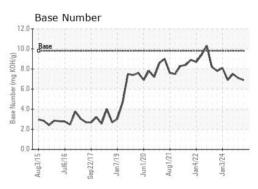
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.7

GRAPHS













Certificate 12367

Laboratory Sample No.

: GFL0109578 Lab Number : 06191647 Unique Number : 11048399

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 24 May 2024

Tested : 29 May 2024 Diagnosed : 29 May 2024 - Wes Davis

GFL Environmental - 031 - Greenville/Spartanburg

1635 Antioch Church Rd Piedmont, SC US 29673

Contact: TECHNICIAN ACCOUNT catherine.anastasio@wearcheck.com

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)

T:

F: