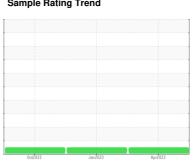


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



PETERBILT 821047

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

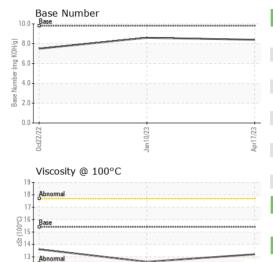
Fluid Condition

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

SAMPLE INFORMATION method limit/bass current history1 history2	GAL)		Oct	2022	Jan2023 Apr202	3	
Sample Date Client Info	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4393 4393 3941 Oil Age hrs Client Info 500 4393 650 Oil Changed Client Info Changed Changed N/A Sample Status Image: Control of Changed NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 34 34 81 Chromium ppm ASTM D5185m >21 0 1 0 Nickel ppm ASTM D5185m >22 0 0 <1 1 Silver ppm ASTM D5185m >22 0 0 <1 <1 1 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>							
Client Info Changed NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		-	4393	3941
Sample Status	Oil Age	hrs	Client Info		500	4393	650
Fuel	Oil Changed		Client Info		Changed	Changed	N/A
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >1110 34 34 81 Chromium ppm ASTM D5185m >4 2 2 4 Nickel ppm ASTM D5185m >2 0 1 0 Titanium ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >25 19 25 50 Lead ppm ASTM D5185m >45 0 <1 <1 <1 Copper ppm ASTM D5185m >4 0 <1 1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 2 2 4 Nickel ppm ASTM D5185m >2 0 1 0 Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >45 0 <1 <1 Lead ppm ASTM D5185m >45 0 <1 <1 Copper ppm ASTM D5185m >4 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	34	34	81
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >2 0 0 <1	Chromium	ppm	ASTM D5185m	>4	2	2	4
Stilver	Nickel	ppm	ASTM D5185m	>2	0	1	0
Aluminum	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >45 0 <1	Silver	ppm	ASTM D5185m	>2	0	0	<1
Copper ppm ASTM D5185m >85 0 1 3 Tin ppm ASTM D5185m >4 0 <1 1 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 -1 1 Magnesium ppm ASTM D5185m 0 0 -1 1 Magnesium ppm ASTM D5185m 1010 952 966 994 Calcium ppm ASTM D5185m 1070 1127 1264 1219 Phosphorus ppm ASTM D5185m 1270 1283 1278 1276 <	Aluminum	ppm	ASTM D5185m	>25	19	25	50
Tin ppm ASTM D5185m >4 0 <1	Lead	ppm	ASTM D5185m	>45	0	<1	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 20 9 7 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 66 65 70 Manganese ppm ASTM D5185m 1010 952 966 994 Calcium ppm ASTM D5185m 1070 1127 1264 1219 Phosphorus ppm ASTM D5185m 1070 1127 1264 1219 Sulfur ppm ASTM D5185m 1270 1283 1278 1276 Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>85	0	1	3
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 20 9 7 Barium ppm ASTM D5185m 0	Tin	ppm	ASTM D5185m	>4	0	<1	1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 66 65 70 Manganese ppm ASTM D5185m 0 0 <1 1 Magnesium ppm ASTM D5185m 1010 952 966 994 Calcium ppm ASTM D5185m 1070 1127 1264 1219 Phosphorus ppm ASTM D5185m 1150 1044 1029 1046 Zinc ppm ASTM D5185m 1270 1283 1278 1276 Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/bas	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 66 65 70 Manganese ppm ASTM D5185m 0 0 <1	Boron	ppm	ASTM D5185m	0	20	9	7
Manganese ppm ASTM D5185m 0 0 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 952 966 994 Calcium ppm ASTM D5185m 1070 1127 1264 1219 Phosphorus ppm ASTM D5185m 1150 1044 1029 1046 Zinc ppm ASTM D5185m 1270 1283 1278 1276 Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/:nm "ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method	Molybdenum	ppm	ASTM D5185m	60	66	65	70
Calcium ppm ASTM D5185m 1070 1127 1264 1219 Phosphorus ppm ASTM D5185m 1150 1044 1029 1046 Zinc ppm ASTM D5185m 1270 1283 1278 1276 Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Manganese	ppm	ASTM D5185m	0	0	<1	1
Phosphorus ppm ASTM D5185m 1150 1044 1029 1046 Zinc ppm ASTM D5185m 1270 1283 1278 1276 Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <t< th=""><th>Magnesium</th><th>ppm</th><th>ASTM D5185m</th><th>1010</th><th>952</th><th>966</th><th>994</th></t<>	Magnesium	ppm	ASTM D5185m	1010	952	966	994
Zinc ppm ASTM D5185m 1270 1283 1278 1276 Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m >4 4 10 Potassium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>1070</th> <th>1127</th> <th>1264</th> <th>1219</th>	Calcium	ppm	ASTM D5185m	1070	1127	1264	1219
Sulfur ppm ASTM D5185m 2060 3662 3558 3459 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m 4 4 10 Potassium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Phosphorus	ppm	ASTM D5185m	1150	1044	1029	1046
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m 4 4 10 Potassium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Zinc	ppm	ASTM D5185m	1270	1283	1278	1276
Silicon ppm ASTM D5185m >30 3 6 8 Sodium ppm ASTM D5185m 4 4 10 Potassium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Sulfur	ppm	ASTM D5185m	2060	3662	3558	3459
Sodium ppm ASTM D5185m 4 4 10 Potassium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 27 31 78 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Silicon	ppm	ASTM D5185m	>30	3	6	8
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Sodium	ppm	ASTM D5185m		4	4	10
Soot % % *ASTM D7844 >3 0.7 0.8 2.2 Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Potassium	ppm	ASTM D5185m	>20	27	31	78
Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 8.2 9.2 14.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Soot %	%	*ASTM D7844	>3	0.7	0.8	2.2
Sulfation Abs/.1mm *ASTM D7415 >30 20.4 20.3 27.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9	Nitration	Abs/cm	*ASTM D7624	>20			14.6
Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.9 21.9							
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	15.9	21.9



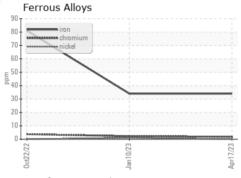
OIL ANALYSIS REPORT

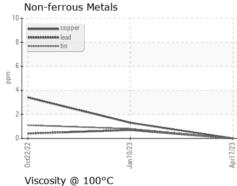


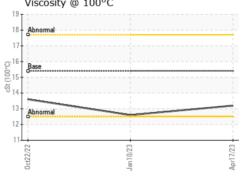
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

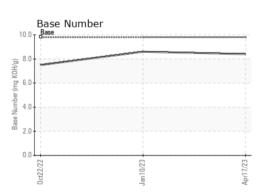
L LOID PROPI	ERITES	memoa			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	12.6	13.6

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10551835

: GFL0066205 : 05896025

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 12 Jul 2023 Diagnosed : 13 Jul 2023

Diagnostician : Sean Felton

GFL Environmental - 904B - Menomonie

1706 MIDWAY RD MENOMONIE, WI US 54751

T: (715)202-3420

Contact: ANDY KANE

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)