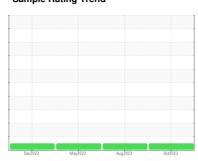


OIL ANALYSIS REPORT

Sample Rating Trend







8598 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- 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

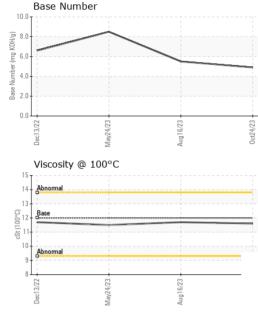
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info PCA0088637 PCA0088515 PCA008850 Sample Date Client Info 24 Oct 2023 16 Aug 2023 24 May 2023 24	AL)		Dec202	2 May2023	Aug2023 Oi	12023	
Sample Date Client Info 24 Oct 2023 16 Aug 2023 24 May 2025 Machine Age mls Client Info 170219 48114 82321	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age mis Client Info 170219 48114 82321	Sample Number		Client Info		PCA0088637	PCA0088515	PCA0088501
Oil Age mls Client Info 170219 48114 0 Oil Changed Changed </td <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <td>24 Oct 2023</td> <td>16 Aug 2023</td> <td>24 May 2023</td>	Sample Date		Client Info		24 Oct 2023	16 Aug 2023	24 May 2023
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed NORMAL NORMAL<	Machine Age	mls	Client Info		170219	48114	82321
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 history2	Oil Age	mls	Client Info		170219	48114	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
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 34 30 14 Chromium ppm ASTM D5185m >20 2 1 <1	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 34 30 14 Chromium ppm ASTM D5185m >20 2 1 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 2 1 <1 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 13 12 7 Lead ppm ASTM D5185m >20 13 12 7 Lead ppm ASTM D5185m >40 0 3 0 Copper ppm ASTM D5185m >40 0 3 0 Copper ppm ASTM D5185m >15 0 0 0 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 METALS	6	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	34	30	14
Titanium	Chromium	ppm	ASTM D5185m	>20	2	1	<1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum ppm ASTM D5185m >20 13 12 7 Lead ppm ASTM D5185m >40 0 3 0 Copper ppm ASTM D5185m >330 4 6 7 Tin ppm ASTM D5185m >15 0 0 0 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 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 1 <1	Titanium	ppm	ASTM D5185m		0	0	0
Lead	Silver	ppm	ASTM D5185m	>3			
Copper ppm ASTM D5185m >330 4 6 7 Tin ppm ASTM D5185m >15 0 0 0 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 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 <1	Aluminum	ppm	ASTM D5185m	>20	13	12	7
Tin	Lead	ppm	ASTM D5185m	>40			
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 2 0 3 5 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 950 1345 1038 1023 Calcium ppm ASTM D5185m 950 1345 1038 1023 Zinc ppm ASTM D5185m 995 1302 1024 1060 Zinc ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history	Copper	ppm	ASTM D5185m	>330	4	6	7
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 0 3 5 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 83 64 62 Manganese ppm ASTM D5185m 0 0 <1		ppm		>15			
ADDITIVES	Vanadium	ppm	ASTM D5185m				
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 83 64 62 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 83 64 62 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 950 1345 1038 1023 Calcium ppm ASTM D5185m 1050 1419 1149 1109 Phosphorus ppm ASTM D5185m 995 1302 1024 1060 Zinc ppm ASTM D5185m 995 1302 1024 1060 Zinc ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % *6 **ASTM D7844 <t< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td>2</td><td>0</td><td>3</td><td>5</td></t<>	Boron	ppm	ASTM D5185m	2	0	3	5
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 950 1345 1038 1023 Calcium ppm ASTM D5185m 1050 1419 1149 1109 Phosphorus ppm ASTM D5185m 995 1302 1024 1060 Zinc ppm ASTM D5185m 1180 1673 1329 1276 Sulfur ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 950 1345 1038 1023 Calcium ppm ASTM D5185m 1050 1419 1149 1109 Phosphorus ppm ASTM D5185m 1995 1302 1024 1060 Zinc ppm ASTM D5185m 1180 1673 1329 1276 Sulfur ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION *ASTM D7414	Molybdenum	ppm			83	64	62
Calcium ppm ASTM D5185m 1050 1419 1149 1109 Phosphorus ppm ASTM D5185m 995 1302 1024 1060 Zinc ppm ASTM D5185m 1180 1673 1329 1276 Sulfur ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm "ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION "ASTM D7414 >25 <td>•</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td>0</td> <td><1</td> <td><1</td>	•	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 995 1302 1024 1060 Zinc ppm ASTM D5185m 1180 1673 1329 1276 Sulfur ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m >25 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Magnesium	ppm	ASTM D5185m	950	1345	1038	1023
Zinc ppm ASTM D5185m 1180 1673 1329 1276 Sulfur ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM	Calcium	ppm	ASTM D5185m	1050	-	1149	1109
Sulfur ppm ASTM D5185m 2600 4031 3115 3590 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Phosphorus	ppm	ASTM D5185m		1302	1024	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Zinc	ppm	ASTM D5185m	1180	1673	1329	1276
Silicon ppm ASTM D5185m >25 11 9 8 Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5			ASTM D5185m	2600	4031	3115	3590
Sodium ppm ASTM D5185m 3 4 2 Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	CONTAMINAN	ΓS		limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 15 19 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Silicon	ppm	ASTM D5185m	>25	11	9	8
INFRA-RED	Sodium	ppm	ASTM D5185m		3	4	2
Soot % % *ASTM D7844 >3 1.8 1 0.4 Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Potassium	ppm	ASTM D5185m	>20	15	19	2
Nitration Abs/cm *ASTM D7624 >20 13.9 10.1 8.4 Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 31.1 23.8 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Soot %	%	*ASTM D7844	>3	1.8	1	0.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Nitration	Abs/cm	*ASTM D7624	>20	13.9	10.1	8.4
Oxidation Abs/.1mm *ASTM D7414 >25 27.5 21.7 18.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	31.1	23.8	20.9
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 4.9 5.5 8.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	27.5	21.7	18.5
	Base Number (BN)	mg KOH/g	ASTM D2896		4.9	5.5	8.5

Contact/Location: FRANK DIETZ - MIDFAR



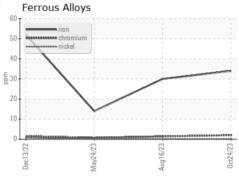
OIL ANALYSIS REPORT

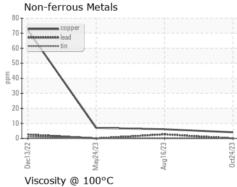


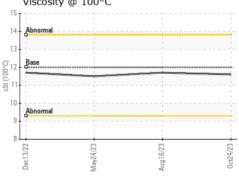
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

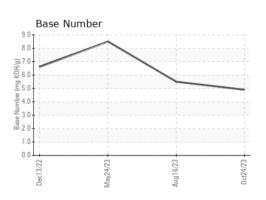
FLUID PROPI	ERIIES	method			riistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	12.00	11.6	11.7	11.5

GRAPHS













Laboratory Sample No. Lab Number Unique Number : 10822235 Test Package : FLEET

: PCA0088637 : 06056286

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 10 Jan 2024 : 11 Jan 2024 Diagnosed

Diagnostician : Jonathan Hester

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)

MIDWEST MOTOR EXPRESS

2169 MUSTANG DR MOUNDS VIEW, MN US 55112

Contact: FRANK DIETZ

frank.dietz@mmeinc.com T: (763)225-6382

F: x:

Report Id: MIDFAR [WUSCAR] 06056286 (Generated: 01/11/2024 09:52:09) Rev: 1

Contact/Location: FRANK DIETZ - MIDFAR