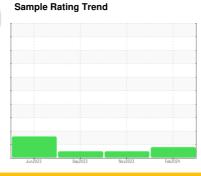


OIL ANALYSIS REPORT

Area **FLEET** VOLVO 2126963 (S/N 4V4NC9EH1NN603196)

Diesel Engine

PETRO CANADA DURON SHP 10W30 (42 QTS)





DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

Valve wear is indicated.

Contamination

There is no indication of any contamination in the

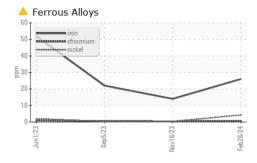
Fluid Condition

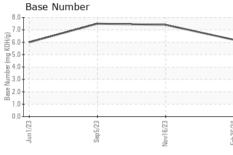
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

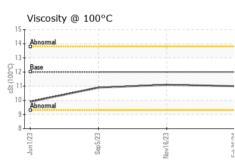
Client Info	(C13)		Jun202	Jun ² 023 Sep ² 023 Nov ² 023 Feb ² 024				
Client Info	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2	
Machine Age mls Client Info 37611 68021 47778	Sample Number		Client Info		PCA0118724	PCA0108210	PCA0102838	
Oil Age mls Client Info 39833 20243 22409 Oil Changed Sample Status Client Info Changed ABNORMAL Not Changed Changed Not Changed Not Changed North Changed N	Sample Date		Client Info		26 Feb 2024	16 Nov 2023	05 Sep 2023	
Client Info	•	mls	Client Info		87611	68021		
CONTAMINATION method limit/base current history1 history2	Oil Age	mls	Client Info		39833	20243	22409	
CONTAMINATION method minit/base current history1 history2	Oil Changed		Client Info		Changed	Not Changd	Changed	
Water	-				_	NORMAL	NORMAL	
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 26 14 22 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2	
Calycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 fron ppm ASTM D5185m >100 26 14 22 Chromium ppm ASTM D5185m >20 <1	Fuel		WC Method	>6.0	<1.0	<1.0	<1.0	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 26 14 22 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG	
Post	Glycol		WC Method		NEG	NEG	NEG	
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2	
ASTM D5185m Part	ron	ppm	ASTM D5185m	>100	26	14	22	
Description	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1	
Silver	Nickel	ppm	ASTM D5185m	>2	<u>4</u>	<1	<1	
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0	
December December	Silver	ppm	ASTM D5185m	>2	0	<1	1	
Copper	Aluminum	ppm	ASTM D5185m	>25	5	4	10	
Properties	_ead	ppm	ASTM D5185m	>40	2	<1	0	
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 0 7 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 50 62 61 62 Manganese ppm ASTM D5185m 50 62 61 62 Manganesium ppm ASTM D5185m 950 1035 930 973 Calcium ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history	Copper	ppm	ASTM D5185m	>330	75	118	355	
ADDITIVES	Γin	ppm	ASTM D5185m	>15	<1	1	2	
ADDITIVES	/anadium	ppm	ASTM D5185m		0	0	0	
Soron ppm ASTM D5185m 2 0 0 0 0 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 50 62 61 62 Manganese ppm ASTM D5185m 0 <1 <1 2 Magnesium ppm ASTM D5185m 950 1035 930 973 Calcium ppm ASTM D5185m 1050 1135 1071 1119 Phosphorus ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 1180 1314 1210 1217 Sulfur ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m 22 0 4 Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base <t< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td>2</td><td>0</td><td>0</td><td>7</td></t<>	Boron	ppm	ASTM D5185m	2	0	0	7	
Manganese ppm ASTM D5185m 0 <1 <1 2 Magnesium ppm ASTM D5185m 950 1035 930 973 Calcium ppm ASTM D5185m 1050 1135 1071 1119 Phosphorus ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *AST	Barium	ppm	ASTM D5185m	0	0	0	0	
Magnesium ppm ASTM D5185m 950 1035 930 973 Calcium ppm ASTM D5185m 1050 1135 1071 1119 Phosphorus ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 1180 1314 1210 1217 Sulfur ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m 20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/.1mm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7	Molybdenum	ppm	ASTM D5185m	50	62	61	62	
Calcium ppm ASTM D5185m 1050 1135 1071 1119 Phosphorus ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 1180 1314 1210 1217 Sulfur ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method </td <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td><1</td> <td><1</td> <td>2</td>	Manganese	ppm	ASTM D5185m	0	<1	<1	2	
Phosphorus ppm ASTM D5185m 995 951 949 971 Zinc ppm ASTM D5185m 1180 1314 1210 1217 Sulfur ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m 2 0 4 Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>950</td> <td>1035</td> <td>930</td> <td>973</td>	Magnesium	ppm	ASTM D5185m	950	1035	930	973	
Zinc ppm ASTM D5185m 1180 1314 1210 1217 Sulfur ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Gilicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m 2 0 4 Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Goot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Calcium	ppm	ASTM D5185m	1050	1135	1071	1119	
Sulfur ppm ASTM D5185m 2600 2670 3108 3154 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m 2 0 4 Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	Phosphorus	ppm	ASTM D5185m	995	951	949	971	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 7 11 Sodium ppm ASTM D5185m 2 0 4 Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	Zinc	ppm	ASTM D5185m	1180	1314	1210	1217	
Silicon ppm ASTM D5185m >25 6 7 11	Sulfur	ppm	ASTM D5185m	2600	2670	3108	3154	
Sodium ppm ASTM D5185m 2 0 4 Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 12 13 27 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	Silicon	ppm	ASTM D5185m	>25	6	7	11	
INFRA-RED	Sodium	ppm	ASTM D5185m		2	0	4	
Soot % % *ASTM D7844 >3 0.6 0.4 0.4 Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	Potassium	ppm	ASTM D5185m	>20	12	13	27	
Nitration Abs/cm *ASTM D7624 >20 9.6 7.9 9.0 Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	INFRA-RED		method	limit/base	current	history1	history2	
Sulfation Abs/.1mm *ASTM D7415 >30 21.0 19.9 20.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	Soot %	%	*ASTM D7844	>3	0.6	0.4	0.4	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.2 15.1 16.2	Vitration	Abs/cm	*ASTM D7624	>20	9.6	7.9	9.0	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.0	19.9	20.6	
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2	
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	15.1	16.2	
	Base Number (BN)	mg KOH/g	ASTM D2896		6.2	7.4	7.5	

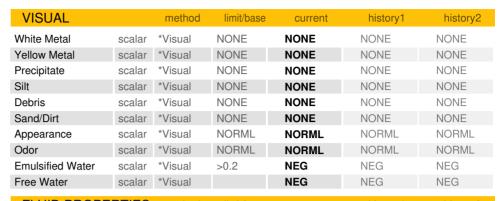


OIL ANALYSIS REPORT



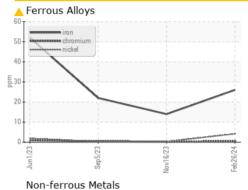


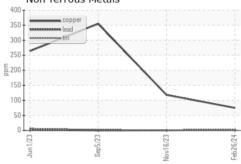


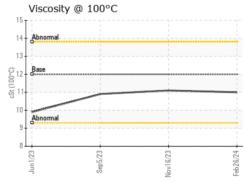


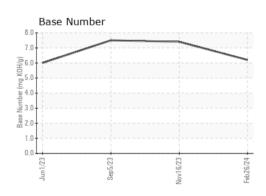
FLUID FROF	LHILS	method	IIIIII/Dase	Current	HISTOLAL	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	12.00	11.0	11.1	10.9

GRAPHS













Certificate L2367

Laboratory Sample No.

: PCA0118724 Lab Number : 06107034 Unique Number: 10910531 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 04 Mar 2024 **Tested** : 04 Mar 2024

: 06 Mar 2024 - Jonathan Hester Diagnosed

PERDUE FARMS - ACCOMAC 22520 LANKFORD HWY

ACCOMAC, VA US 23301

Contact: PEGGY KIMES peggy.kimes@perdue.com

T: (757)787-5304

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)

F: (757)787-5208