

OIL ANALYSIS REPORT

FLEET Machine Id VOLVO 2126963 (S/N 4V4NC9EH1NN603196) Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (42 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

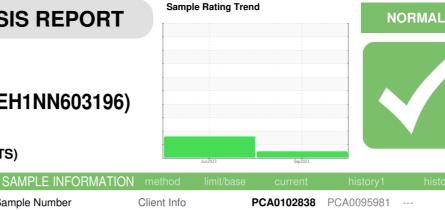
Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

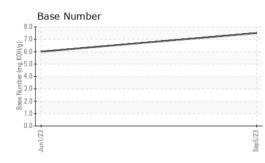
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



Sample Number		Client Info		PCA0102838	PCA0095981	
Sample Date		Client Info		05 Sep 2023	01 Jun 2023	
Machine Age	mls	Client Info		47778	25369	
Oil Age	mls	Client Info		22409	25369	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	ABNORMAL	
			1			
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	22	52	
Chromium	ppm	ASTM D5185m	>20	<1	1	
Nickel	ppm	ASTM D5185m	>2	<1	2	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>2	1	<1	
Aluminum	ppm	ASTM D5185m	>25	10	28	
Lead	ppm	ASTM D5185m	>40	0	2	
Copper	ppm	ASTM D5185m	>330	355	264	
Tin	ppm	ASTM D5185m	>15	2	6	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	7	167	
Barium	ppm	ASTM D5185m	0	0	0	
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 62	0 102	
				-		
Molybdenum	ppm	ASTM D5185m	50	62	102	
Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	50 0	62 2	102 6	
Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950	62 2 973	102 6 726	
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950 1050	62 2 973 1119	102 6 726 1436	
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950 1050 995	62 2 973 1119 971	102 6 726 1436 713	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180	62 2 973 1119 971 1217 3154	102 6 726 1436 713 885	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600	62 2 973 1119 971 1217 3154	102 6 726 1436 713 885 2809	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600 Limit/base	62 2 973 1119 971 1217 3154 current	102 6 726 1436 713 885 2809 history1	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 0 950 1050 995 1180 2600 limit/base >25	62 2 973 1119 971 1217 3154 current 11	102 6 726 1436 713 885 2809 history1 ▲ 44	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 0 950 1050 995 1180 2600 limit/base >25	62 2 973 1119 971 1217 3154 current 11 4 27	102 6 726 1436 713 885 2809 history1 ▲ 44 5	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600 limit/base >25 >20	62 2 973 1119 971 1217 3154 current 11 4 27	102 6 726 1436 713 885 2809 history1 ▲ 44 5 76	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600 imit/base >25 >20	62 2 973 1119 971 1217 3154 current 11 4 27 current	102 6 726 1436 713 885 2809 history1 ▲ 44 5 76 history1	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	62 2 973 1119 971 1217 3154 <u>current</u> 11 4 27 <u>current</u> 0.4	102 6 726 1436 713 885 2809 history1 ▲ 44 5 76 history1 0.4	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	62 2 973 1119 971 1217 3154 <u>current</u> 11 4 27 <u>current</u> 0.4 9.0 20.6	102 6 726 1436 713 885 2809 history1 ▲ 44 5 76 history1 0.4 10.7	 history2 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 >30	62 2 973 1119 971 1217 3154 <u>current</u> 11 4 27 <u>current</u> 0.4 9.0 20.6	102 6 726 1436 713 885 2809 history1 ▲ 44 5 76 history1 0.4 10.7 24.3	 history2 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415	50 0 950 1050 995 1180 2600 imit/base >25 20 20 imit/base >3 >20 30	62 2 973 1119 971 1217 3154 <u>current</u> 11 4 27 <u>current</u> 0.4 9.0 20.6 <u>current</u>	102 6 726 1436 713 885 2809 history1 ▲ 44 5 76 history1 0.4 10.7 24.3 history1	 history2 history2 history2 history2



OIL ANALYSIS REPORT







Non-ferrous Metals	VISUAL		method	limit/base	current	history1	history2
Precipitate scalar *Visual NONE NONE NONE Sitt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NORML NORML NORML NORML Appearance scalar *Visual NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual GRAPHS GRAPHS	White Metal	scalar	*Visual	NONE	NONE	NONE	
Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual 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 Free Water scalar *Visual NORML NEG Free Water scalar *Visual NORML NEG NEG Fluid PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual >0.2 NEG NEG FulliD PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys	Precipitate	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirit scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual NORML NORML NORML Free Water scalar *Visual >0.2 NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys Non-ferrous Metals	Silt	scalar	*Visual	NONE	NONE	NONE	
Appearance scalar *Visual NORML NORML NORML Odor scalar Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG Free Water scalar *Visual NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys	Debris	scalar	*Visual	NONE	NONE	NONE	
Odor scalar *Visual NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG Free Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG Free Water scalar *Visual NEG NEG Ferrous Alloys	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Emulsified Water scalar *Visual >0.2 NEG NEG Free Water scalar *Visual NEG NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys 0 0 0 0 0 0 0 0 0 0 0 0 0	Appearance	scalar	*Visual	NORML	NORML		
Free Water scalar *Visual NEG FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys On-ferrous Metals On-ferrous Metals	Odor	scalar	*Visual	NORML	NORML	NORML	
FLUID PROPERTIES method limit/base current history1 history2 Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Visc @ 100°C cSt ASTM D445 12.00 10.9 9.9 GRAPHS Ferrous Alloys	Free Water	scalar	*Visual		NEG	NEG	
GRAPHS Ferrous Alloys	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Ferrous Alloys	Visc @ 100°C	cSt	ASTM D445	12.00	10.9	9.9	
Non-ferrous Metals	GRAPHS						
Non-ferrous Metals							
Non-ferrous Metals	iron						
Non-ferrous Metals							
Non-ferrous Metals	40-						
Non-ferrous Metals	30 -						
Non-ferrous Metals							
Non-ferrous Metals							
Non-ferrous Metals	10						
Non-ferrous Metals	0 - 1			2			
Non-ferrous Metals	7 un 1/2			Sep 5/2			
intermediation intermediation intermediation intermediation intermediation intermediation intermediation intermediation intermediation intermediation		S					
00	00 copper 1						
	50 - neeseeseese lead						
io - io - io -							
10 - 10 -	50						
io -	00+						
	50 -						
	0						
Jun 1/23 Sep5,73	un 1/21			Sep 5/23			
Viscosity @ 100°C				63			
A Base Numper	¹⁵ T			80			
	14 - Abnormal						

(B/HOX Bw) J

u 4.0 Jangung 3.0

ase 2.0

Sep5/23.

: 12 Sep 2023

: 14 Sep 2023

1.0·

Jun1/23



 Unique Number
 : 10644781
 Diagnostician
 : Wes Davis

 Certificate 12367
 Test Package
 : FLET

 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)

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

Received

Diagnosed

ppm

13

10

Jun1/23

Laboratory

Sample No.

Lab Number

Abnormal

: PCA0102838

: 05948822

cSt (100°C)

PERDUE FARMS - ACCOMAC

22520 LANKFORD HWY

Contact: PEGGY KIMES

peggy.kimes@perdue.com

ACCOMAC, VA

US 23301

ep5/23