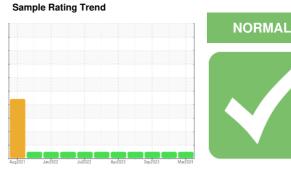


OIL ANALYSIS REPORT

SAMPLE INFORMATION method



Machine Id VOLVO VNR 2126904 (S/N 4V4WC9EH5MN600465)

Diesel Engine Fluid

PETRO CANADA DURON SHP 10W30 (--- QTS)

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.

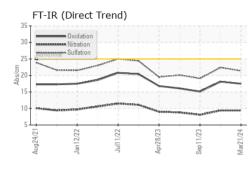
Fluid Condition

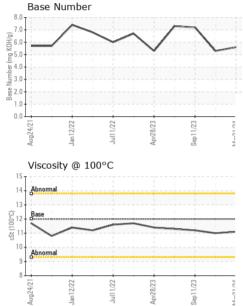
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

				DO 40004000	DC 4000 4507	DO 4000 4505
Sample Number		Client Info		PCA0094632	PCA0094597	PCA0094585
Sample Date	mele	Client Info		21 Mar 2024	22 Dec 2023 332180	11 Sep 2023
Machine Age	mls	Client Info		368142		292948 22600
Oil Age	mls	Client Info		36282	39232 Changed	
Oil Changed		Client Info		Changed NORMAL	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	27	26	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	1	2	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	1	<1	0
Lead	ppm	ASTM D5185m	>40	1	1	<1
Copper	ppm	ASTM D5185m	>330	5	5	3
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method			history1	history2
ADDITIVES Boron	ppm	Method ASTM D5185m	limit/base	current	history1 1	history2 3
	ppm ppm	ASTM D5185m				
Boron Barium	ppm	ASTM D5185m	2	<1	1	3
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	<1 0	1 0	3 <1
Boron Barium	ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50	<1 0 59	1 0 66	3 <1 69
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	<1 0 59 <1	1 0 66 <1	3 <1 69 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	<1 0 59 <1 970	1 0 66 <1 1009	3 <1 69 <1 989
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	<1 0 59 <1 970 1161	1 0 66 <1 1009 1201 1013	3 <1 69 <1 989 1163
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	<1 0 59 <1 970 1161 861	1 0 66 <1 1009 1201	3 <1 69 <1 989 1163 1043
Boron Barium 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 ASTM D5185m	2 0 50 0 950 1050 995 1180	<1 0 59 <1 970 1161 861 1275	1 0 66 <1 1009 1201 1013 1313	3 <1 69 <1 989 1163 1043 1269
Boron Barium 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 ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	<1 0 59 <1 970 1161 861 1275 3090	1 0 66 <1 1009 1201 1013 1313 2752	3 <1 69 <1 989 1163 1043 1269 3427
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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	2 0 50 950 1050 995 1180 2600	<1 0 59 <1 970 1161 861 1275 3090 current	1 0 66 <1 1009 1201 1013 1313 2752 history1	3 <1 69 <1 989 1163 1043 1269 3427 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 59 <1 970 1161 861 1275 3090 current 4	1 0 66 <1 1009 1201 1013 1313 2752 history1 4	3 <1 69 <1 989 1163 1043 1269 3427 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 59 <1 970 1161 861 1275 3090 current 4 <	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 <	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	<1 0 59 <1 970 1161 861 1275 3090 current 4 <1 2	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 <1 1	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 3 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	<1 0 59 <1 970 1161 861 1275 3090 current 4 <1 2 current	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 <1 1 history1 0.6	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 1 history2 0.4
Boron Barium 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	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	<1 0 59 <1 970 1161 861 1275 3090 current 4 <1 2 current 0.6	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 <1 1 history1	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	<1 0 59 <1 970 1161 861 1275 3090 current 4 <1 2 current 0.6 9.4	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 <1 1 1 history1 0.6 9.4	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 3 1 history2 0.4 8.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 >20 >30 >30 imit/base	<1 0 59 <1 970 1161 861 1275 3090 current 4 <1 2 current 0.6 9.4 21.4 current	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 < <1 1 1 history1 0.6 9.4 22.4 history1	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 3 1 history2 0.4 8.1 19.1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	<1 0 59 <1 970 1161 861 1275 3090 current 4 <1 2 current 0.6 9.4 21.4	1 0 66 <1 1009 1201 1013 1313 2752 history1 4 <1 1 1 history1 0.6 9.4 22.4	3 <1 69 <1 989 1163 1043 1269 3427 history2 3 3 3 1 history2 0.4 8.1 19.1



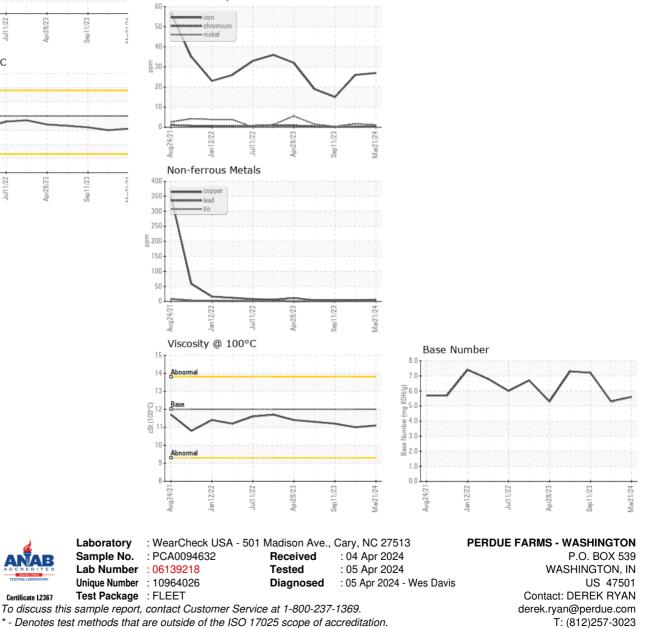
OIL ANALYSIS REPORT





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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.1	11.0	11.2
CDADUS						

GRAPHS Ferrous Alloys



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate 12367

Contact/Location: DEREK RYAN - PERWAS

F: