

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend

### NORMAL





Sample Number   Client Info   PCA0118439   PCA0087239   PCA007442     monitor.   Sample Date   Client Info   31 Jan 2024   10 Feb 2023   16 Jul 2022     Machine Age   mils   Client Info   20000   737908   698576     Ioi Age   mils   Client Info   20000   40386   40000     Oil Changed   Client Info   20000   40386   40000     Sample Status   method   innibbase   current   history1   history2     fuel   WC Method   >0.2   NEG   NEG   NEG   NEG     able   On of the   Glycol   WC Method   >0.0   40   34   29     for   ppm   ASTM05185m   >20   <1   <1   <1     Nickel   ppm   ASTM05185m   >20   <1   <1   <1     for   ppm   ASTM05185m   >20   <1   <1   <1   <1     Norkel   ppm   ASTM05185m   >20   <1								
Sample Date   Client Info   31 Jan 2024   10 Feb 2023   16 Jul 2022     Machine Age   mis   Client Info   73908   698576     Oil Age   mis   Client Info   270000   737908   698576     Oil Changed   Client Info   Changed		SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age   mis   Client Info   79000   737908   698576     Oil Age   mis   Client Info   20000   40386   40000     Oil Changed   Client Info   Changed Changed   Changed   Changed     Sample Status   NOTMAL   NORMAL   NORMAL   NORMAL   NORMAL     able   WC Method   >6.0   <1.0		Sample Number		Client Info		PCA0118439	PCA0087239	PCA0074423
Oil Age   mis   Client Info   20000   40386   40000     Oil Changed   Client Info   Changed   Ch	o monitor.	Sample Date		Client Info		31 Jan 2024	10 Feb 2023	16 Jul 2022
Oil Changed   Client Info   Changed   Changed   Changed   Changed   Changed   NORMAL   Normality   N		Machine Age	mls	Client Info		790000	737908	698576
Sample Status   NORMAL   NORMAL   NORMAL   NORMAL     able ion of the on of the on of the ion		Oil Age	mls	Client Info		20000	40386	40000
CONTAMINATION   method   limit/base   current   history1   history2     able ion of the   Fuel   WC Method   >6.0   <1.0		Oil Changed		Client Info		Changed	Changed	Changed
CONTAMINATION   method   limit/base   current   history1   history2     able ion of the   Fuel   WC Method   >6.0   <1.0	ion in the	Sample Status				NORMAL	NORMAL	NORMAL
Bable ion of the   Fuel   WC Method   >6.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0   <1.0		CONTAMINAT	ION	method	limit/base	current	history1	history2
Babe ion of the   Water   WC Method   >0.2   NEG   NEG   NEG   NEG     Glycol   WC Method   NEG   NEG   NEG   NEG     Water   ppm   ASTM 05185m   >100   40   34   29     Iron   ppm   ASTM 05185m   >20   <1						~1.0		
Glycol   WC Method   NEG   NEG   NEG     WEAR METALS   mothod   imit/base   current   history1   history2     Iron   ppm   ASTM 05185m<>100   40   34   29     Chromium   ppm   ASTM 05185m<>20   <1								
WEAR METALS   retroit   Initional   Initional   Initional   Initional     Iron   ppm   ASTM 05185m   >20   <1	ion of the				20.2			
Iron   ppm   ASTM D5185m   >100   40   34   29     Chromium   ppm   ASTM D5185m   >20   <1		-		WC WEITIOU		NEG	NEG	NEG
Chromium   ppm   ASTM D5185m   >20   <1   <1   <1     Nickel   ppm   ASTM D5185m   >2   2   2   1     Titanium   ppm   ASTM D5185m   >2   0   0   <1		WEAR METAL	S	method	limit/base	current	history1	history2
Nickel   ppm   ASTM D5185m   >2   2   2   <1     Titanium   ppm   ASTM D5185m   3   6   5     Silver   ppm   ASTM D5185m   >25   4   4   4     Lead   ppm   ASTM D5185m   >25   4   4   4     Lead   ppm   ASTM D5185m   >26   4   4   4     Lead   ppm   ASTM D5185m   >26   4   4   4     Lead   ppm   ASTM D5185m   >40   4   2   3     Copper   ppm   ASTM D5185m   >15   2   1   1   1     Vanadium   ppm   ASTM D5185m   >15   2   1   0   0     Cadmium   ppm   ASTM D5185m   5   6   0   5   7     Marganese   ppm   ASTM D5185m   5   6   5   7   7     Magnesium   ppm   ASTM D5185m   150		Iron	ppm	ASTM D5185m	>100	40	34	29
Titanium   ppm   ASTM D5185m   3   6   5     Silver   ppm   ASTM D5185m   >2   0   0   <1		Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver   ppm   ASTM D5185m   >2   0   0   <1     Aluminum   ppm   ASTM D5185m   >25   4   4   4     Lead   ppm   ASTM D5185m   >330   3   3   3     Copper   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   5   <1		Nickel	ppm	ASTM D5185m	>2	2	2	<1
Atuminum   ppm   ASTM D5185m   >225   4   4   4     Lead   ppm   ASTM D5185m   >40   4   2   3     Copper   ppm   ASTM D5185m   >330   3   3   3     Tin   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   15   2   1   1     Vanadium   ppm   ASTM D5185m   0   0   0   0     ADDITIVES   method   imit/base   current   history1   history2     Boron   ppm   ASTM D5185m   0   13   0   0     Molybdenum   ppm   ASTM D5185m   0   <1		Titanium	ppm	ASTM D5185m		3	6	5
Lead   ppm   ASTM D5185m   >40   4   2   3     Copper   ppm   ASTM D5185m   >330   3   3   3     Tin   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   >15   2   1   0   0     Cadmium   ppm   ASTM D5185m   0   0   13   0   0     Molybdenum   ppm   ASTM D5185m   50   60   54   57     Manganese   ppm   ASTM D5185m   50   60   544   57     Manganese   ppm   ASTM D5185m   0   <1		Silver	ppm	ASTM D5185m	>2	0	0	<1
Copper   ppm   ASTM D5185m   >330   3   3   3     Tin   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   0   0   0   0     Cadmium   ppm   ASTM D5185m   <<1		Aluminum	ppm	ASTM D5185m	>25	4	4	4
Tin   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   0   0   0   0     Cadmium   ppm   ASTM D5185m   <1		Lead	ppm	ASTM D5185m	>40	4	2	3
Tin   ppm   ASTM D5185m   >15   2   1   1     Vanadium   ppm   ASTM D5185m   0   0   0   0     Cadmium   ppm   ASTM D5185m    <1   0   0   0     ADDITIVES   method   imit/base   current   history1   history2     Boron   ppm   ASTM D5185m   2   5   <1   4     Barium   ppm   ASTM D5185m   0   13   0   0     Molybdenum   ppm   ASTM D5185m   0   <1   <1   <1     Magnesium   ppm   ASTM D5185m   0   <1   <1   <1   <1     Phosphorus   ppm   ASTM D5185m   1050   1121   11111   1188     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     Zinc   ppm   ASTM D5185m   265   6   7   7     Sodium   ppm   ASTM D5185m   2		Copper	ppm	ASTM D5185m	>330	3	3	3
Vanadium   ppm   ASTM D5185m   0   0   0     Cadmium   ppm   ASTM D5185m   <1				ASTM D5185m	>15	2	1	1
Cadmium   ppm   ASTM D5185m   <1   0   0     ADDITIVES   method   limit/base   current   history1   history2     Boron   ppm   ASTM D5185m   2   5   <1		Vanadium		ASTM D5185m		0	0	0
Boron   ppm   ASTM D5185m   2   5   <1   4     Barium   ppm   ASTM D5185m   0   13   0   0     Molybdenum   ppm   ASTM D5185m   50   60   54   57     Manganese   ppm   ASTM D5185m   0   <1		Cadmium		ASTM D5185m		<1	0	0
Barium   ppm   ASTM D5185m   0   13   0   0     Molybdenum   ppm   ASTM D5185m   50   60   54   57     Manganese   ppm   ASTM D5185m   0   <1   <1   <1     Magnesium   ppm   ASTM D5185m   950   869   818   894     Calcium   ppm   ASTM D5185m   1050   1121   1111   1188     Phosphorus   ppm   ASTM D5185m   995   1009   944   939     Zinc   ppm   ASTM D5185m   995   1009   944   3010     CONTAMINANTS   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >20   3   2   <1     INFRA-RED   method   limit/base   current   history1   history2     Soot %   %   *ASTM D7624		ADDITIVES		method	limit/base	current	history1	history2
Molybdenum   ppm   ASTM D5185m   50   60   54   57     Manganese   ppm   ASTM D5185m   0   <1		Boron	ppm	ASTM D5185m	2	5	<1	4
Maganesse   ppm   ASTM D5185m   0   <1   <1   <1     Magnesium   ppm   ASTM D5185m   950   869   818   894     Calcium   ppm   ASTM D5185m   1050   1121   1111   1188     Phosphorus   ppm   ASTM D5185m   995   1009   944   939     Zinc   ppm   ASTM D5185m   995   1009   944   939     Sulfur   ppm   ASTM D5185m   995   1009   944   939     Sulfur   ppm   ASTM D5185m   995   1009   944   939     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >20   3   2   <1		Barium	ppm	ASTM D5185m	0	13	0	0
Magnesium   ppm   ASTM D5185m   950   869   818   894     Calcium   ppm   ASTM D5185m   1050   1121   1111   1188     Phosphorus   ppm   ASTM D5185m   995   1009   944   939     Zinc   ppm   ASTM D5185m   995   1009   944   939     Sulfur   ppm   ASTM D5185m   1180   1177   1180   1234     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >20   3   2   <1		Molybdenum	ppm	ASTM D5185m	50	60	54	57
Calcium   ppm   ASTM D5185m   1050   1121   1111   1188     Phosphorus   ppm   ASTM D5185m   995   1009   944   939     Zinc   ppm   ASTM D5185m   995   1009   944   939     Zinc   ppm   ASTM D5185m   1180   1177   1180   1234     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >20   3   2   <1		Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus   ppm   ASTM D5185m   995   1009   944   939     Zinc   ppm   ASTM D5185m   1180   1177   1180   1234     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >20   3   2   <1     INFRA-RED   method   limit/base   current   history1   history2     Soot %   %   *ASTM D7844   >3   0.7   0.6   0.6     Nitration   Abs/cm   *ASTM D7624   >20   10.4   10.3   24.5     FLUID DEGRADATION   Method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414<		Magnesium	ppm	ASTM D5185m	950	869	818	894
Zinc   ppm   ASTM D5185m   1180   1177   1180   1234     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >20   3   2   <1		Calcium	ppm	ASTM D5185m	1050	1121	1111	1188
Zinc   ppm   ASTM D5185m   1180   1177   1180   1234     Sulfur   ppm   ASTM D5185m   2600   2960   2424   3010     CONTAMINANTS   method   limit/base   current   history1   history2     Silicon   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >25   6   7   7     Sodium   ppm   ASTM D5185m   >20   3   2   <1		Phosphorus				1009	944	939
SulfurppmASTM D5185m2600296024243010CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25677SodiumppmASTM D5185m>2032<1				ASTM D5185m	1180		1180	1234
Silicon ppm ASTM D5185m >25 6 7 7   Sodium ppm ASTM D5185m >20 15 18 20   Potassium ppm ASTM D5185m >20 3 2 <1   INFRA-RED method limit/base current history1 history2   Soot % % *ASTM D7844 >3 0.7 0.6 0.6   Nitration Abs/cm *ASTM D7624 >20 10.4 10.4 10.3   Sulfation Abs/.1mm *ASTM D7415 >30 23.4 24.1 24.5   FLUID DEGRADATION method limit/base current history1 history2   Oxidation Abs/.1mm *ASTM D7414 >25 20.4 20.8 21.1		Sulfur				2960	2424	3010
Sodium   ppm   ASTM D5185m   15   18   20     Potassium   ppm   ASTM D5185m   >20   3   2   <1		CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium   ppm   ASTM D5185m   >20   3   2   <1     INFRA-RED   method   limit/base   current   history1   history2     Soot %   %   *ASTM D7844   >3   0.7   0.6   0.6     Nitration   Abs/cm   *ASTM D7624   >20   10.4   10.4   10.3     Sulfation   Abs/.1mm   *ASTM D7415   >30   23.4   24.1   24.5     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   20.4   20.8   21.1		Silicon	ppm	ASTM D5185m	>25	6	7	7
Potassium   ppm   ASTM D5185m   >20   3   2   <1     INFRA-RED   method   limit/base   current   history1   history2     Soot %   %   *ASTM D7844   >3   0.7   0.6   0.6     Nitration   Abs/cm   *ASTM D7624   >20   10.4   10.4   10.3     Sulfation   Abs/.1mm   *ASTM D7415   >30   23.4   24.1   24.5     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   20.4   20.8   21.1		Sodium	ppm	ASTM D5185m		15	18	20
Soot %   %   *ASTM D7844   >3   0.7   0.6   0.6     Nitration   Abs/cm   *ASTM D7624   >20   10.4   10.4   10.3     Sulfation   Abs/.1mm   *ASTM D7415   >30   23.4   24.1   24.5     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   20.4   20.8   21.1		Potassium	ppm	ASTM D5185m	>20	3	2	<1
Nitration   Abs/cm   *ASTM D7624   >20   10.4   10.3     Sulfation   Abs/.1mm   *ASTM D7415   >30   23.4   24.1   24.5     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   20.4   20.8   21.1		INFRA-RED		method	limit/base	current	history1	history2
Nitration   Abs/cm   *ASTM D7624   >20   10.4   10.3     Sulfation   Abs/.1mm   *ASTM D7615   >30   23.4   24.1   24.5     FLUID DEGRADATION   method   limit/base   current   history1   history2     Oxidation   Abs/.1mm   *ASTM D7414   >25   20.4   20.8   21.1		Soot %	%	*ASTM D7844	>3	0.7	0.6	0.6
SulfationAbs/.1mm*ASTM D7415>3023.424.124.5FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2520.420.821.1								
Oxidation   Abs/.1mm   *ASTM D7414   >25   20.4   20.8   21.1								
		FLUID DEGRA	DATION	method	limit/base	current	history1	history2
		Oxidation	Abs/.1mm	*ASTM D7414	>25	20.4	20.8	21.1
		Base Number (BN)	mg KOH/g		-	5.2	4.3	5.5

## FLEET **VOLVO 26380** Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (36 QTS)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval t

#### Wear

All component wear rates are normal.

#### Contamination

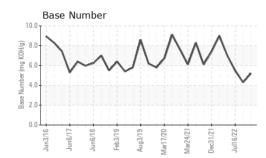
There is no indication of any contamination oil.

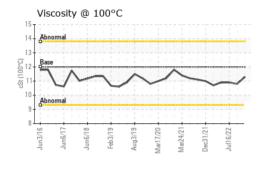
### Fluid Condition

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

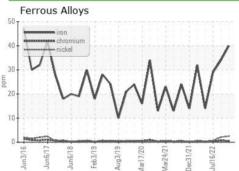


# **OIL ANALYSIS REPORT**

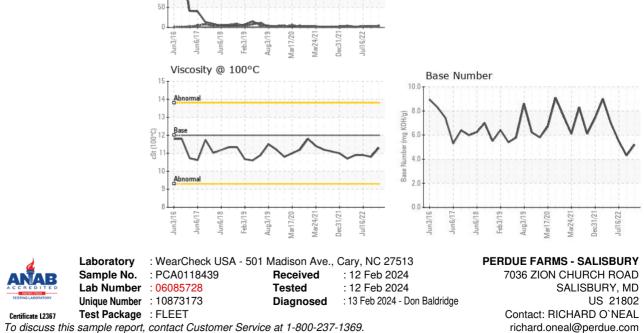




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	11.3	10.8	10.9
GRAPHS						



Non-ferrous Metals



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)

T: (410)543-3628

F: (410)341-2164