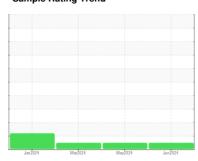


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 13404 Component Diesel Engine

PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

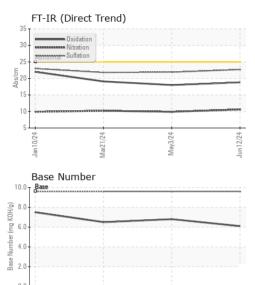
Fluid Condition

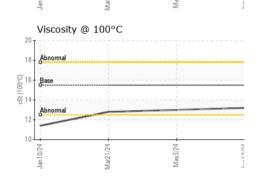
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2	15W40 (GAL)		Jan 202	4 Mar2024	May2024 J	un2024	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 2495 1832 1250 Oil Age hrs Client Info 663 582 680 Oil Changed Client Info Changed Changed Changed Changed Sample Status Donath NoRMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Water WC Method NEG NEG NEG NEG NEG WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM D5185m >100 57 42 33 Chromium ppm ASTM D5185m >20 1 2 1 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >20 1 <1	Sample Number		Client Info		WC0899203	WC0913143	WC0888146
Oil Age hrs Client Info 663 582 680 Oil Changed Client Info Changed Changed Changed Changed Changed Changed Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Euel WC Method >5 <1.0	Sample Date		Client Info		12 Jun 2024	03 May 2024	21 Mar 2024
Changed Sample Status	Machine Age	hrs	Client Info		2495	1832	1250
NORMAL NORMAL NORMAL	Oil Age	hrs	Client Info		663	582	680
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imit Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 57 42 33 Ohromium ppm ASTM D5185m >4 0 0 0 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >40 4 1 3 Copper ppm ASTM D5185m >330 12 36 103 Tin ppm ASTM D5185m 0 0 0 <1 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th>Changed</th>	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imiti/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 57 42 33 Chromium ppm ASTM D5185m >20 1 2 1 Nickel ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >40 4 1 3 0 Copper ppm ASTM D5185m >15 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0	CONTAMINATION	J	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history2 Iron ppm ASTM D5185m >100 57 42 33 Chromium ppm ASTM D5185m >20 1 2 1 Nickel ppm ASTM D5185m >20 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >330 12 36 103 Tin ppm ASTM D5185m >15 0 0 <1 Cadmium ppm ASTM D5185m 1 0 0 4 <tr< th=""><th>Water</th><th></th><th>WC Method</th><th>>0.2</th><th>NEG</th><th>NEG</th><th>NEG</th></tr<>	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 1 2 1 Nickel ppm ASTM D5185m >4 0 0 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 0 0 0 Aluminum ppm ASTM D5185m >40 4 1 3 Copper ppm ASTM D5185m >40 4 1 3 Copper ppm ASTM D5185m >15 0 0 0 Tin ppm ASTM D5185m 0 0 0 -1 Cadmium ppm ASTM D5185m 0 0 0 -1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 0 0 -1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	57	42	33
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >40 4 1 3 Copper ppm ASTM D5185m >330 12 36 103 Tin ppm ASTM D5185m >15 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 0 0 4 Barium ppm ASTM D5185m 1 0 0 4 Barium ppm ASTM D5185m 100 0 58 Manga	Chromium	ppm	ASTM D5185m	>20	1	2	1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >40 4 1 3 Copper ppm ASTM D5185m >330 12 36 103 Tin ppm ASTM D5185m >15 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 12 36 103 Tin ppm ASTM D5185m >15 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 0 0 4 Barium ppm ASTM D5185m 1 0 0 <1 Molybdenum ppm ASTM D5185m 1 0 0 <1 Manganese ppm ASTM D5185m 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Tin	Lead	ppm	ASTM D5185m	>40	4	1	3
Vanadium ppm ASTM D5185m 0 0 <1	Copper	ppm	ASTM D5185m	>330	12	36	103
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 1 0 0 4 Barium ppm ASTM D5185m 1 0 0 <1 Molybdenum ppm ASTM D5185m 1 <1 <1 <1 <1 Manganese ppm ASTM D5185m 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Tin	ppm	ASTM D5185m	>15	0	0	0
ADDITIVES	Vanadium	ppm	ASTM D5185m			0	<1
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 1 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 60 58 Manganese ppm ASTM D5185m 1 <1	Boron	ppm					4
Manganese ppm ASTM D5185m 1 <1	Barium	ppm	ASTM D5185m	1	0	0	<1
Magnesium ppm ASTM D5185m 1010 1046 933 916 Calcium ppm ASTM D5185m 1070 1253 1219 1210 Phosphorus ppm ASTM D5185m 1150 1071 978 833 Zinc ppm ASTM D5185m 1270 1332 1128 1276 Sulfur ppm ASTM D5185m 2060 3395 2788 2923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/cm *ASTM D7415	Molybdenum	ppm	ASTM D5185m				58
Calcium ppm ASTM D5185m 1070 1253 1219 1210 Phosphorus ppm ASTM D5185m 1150 1071 978 833 Zinc ppm ASTM D5185m 1270 1332 1128 1276 Sulfur ppm ASTM D5185m 2060 3395 2788 2923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/:nm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1m	Manganese	ppm	ASTM D5185m	1	<1		
Phosphorus ppm ASTM D5185m 1150 1071 978 833 Zinc ppm ASTM D5185m 1270 1332 1128 1276 Sulfur ppm ASTM D5185m 2060 3395 2788 2923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs	Magnesium	ppm					
Zinc ppm ASTM D5185m 1270 1332 1128 1276 Sulfur ppm ASTM D5185m 2060 3395 2788 2923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % "ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm "ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm "ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm "ASTM D7414 >25 18.8 18.0 19.1		ppm	ASTM D5185m			1219	
Sulfur ppm ASTM D5185m 2060 3395 2788 2923 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m >20 0 0 1 Potassium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1		ppm					
Silicon ppm ASTM D5185m >25 4 4 5 Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1			ASTM D5185m	2060	3395	2788	2923
Sodium ppm ASTM D5185m 1 3 3 Potassium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	CONTAMINANTS		method	limit/base	current	history1	·
Potassium ppm ASTM D5185m >20 0 0 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	Silicon	ppm		>25	4		
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	Sodium	ppm	ASTM D5185m		1	3	3
Soot % % *ASTM D7844 >3 0.7 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	Potassium	ppm	ASTM D5185m	>20	0	0	1
Nitration Abs/cm *ASTM D7624 >20 10.6 9.9 10.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.7 21.9 21.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	Soot %	%		>3	0.7		
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	Nitration	Abs/cm	*ASTM D7624	>20	10.6	9.9	10.2
Oxidation Abs/.1mm *ASTM D7414 >25 18.8 18.0 19.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.7	21.9	21.8
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.6 6.1 6.8 6.5	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.8	18.0	19.1
	Base Number (BN)	mg KOH/g	ASTM D2896	9.6	6.1	6.8	6.5



OIL ANALYSIS REPORT

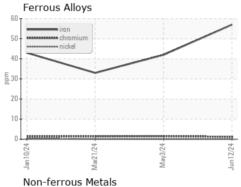


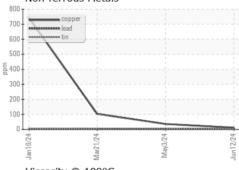


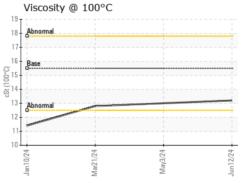
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

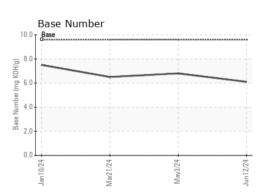
FLUID PHOPENTIES		memod			riistory i	riistoryz
Visc @ 100°C	cSt	ASTM D445	15.5	13.2	13.0	12.8

GRAPHS













Certificate 12367

Laboratory Sample No.

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

: WC0899203 Lab Number : 06213189 Unique Number : 11086053

Received **Tested**

Diagnosed

: 18 Jun 2024 : 19 Jun 2024

: 19 Jun 2024 - Wes Davis

Test Package : CONST (Additional Tests: TBN)

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)

TRADER CONSTRUCTION CO.

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