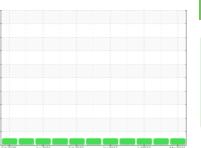


OIL ANALYSIS REPORT

Sample Rating Trend







Area OffMachine E59 Compone Diesel Fluid PETRO

Off-Road
Machine Id
E590
Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

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

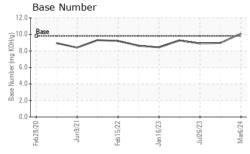
Fluid Condition

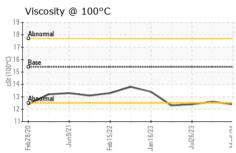
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

	J.:,	Feb 2020	Jun2021 Feb2022	Jan2023 Jul2023	Mar2024	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0109547	PCA0078193	PCA0090492
Sample Date		Client Info		06 Mar 2024	15 Nov 2023	26 Jul 2023
Machine Age	hrs	Client Info		11788	11377	10706
Oil Age	hrs	Client Info		8624	8545	8213
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	10	13	21
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	1	<1
Lead	ppm	ASTM D5185m	>40	0	1	2
Copper	ppm	ASTM D5185m	>330	2	<1	<1
Tin	ppm		>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	13	12	12
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m	60	58	65	67
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	1010	848	940	1009
Calcium	ppm	ASTM D5185m	1070	1065	1125	1240
Phosphorus	ppm	ASTM D5185m	1150	949	1044	1037
Zinc	ppm	ASTM D5185m	1270	1067	1248	1305
Sulfur	ppm	ASTM D5185m	2060	3128	3144	3533
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	4	6	7
Sodium	ppm	ASTM D5185m		2	0	2
Potassium	ppm	ASTM D5185m	>20	0	2	<1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.2	0.3	0.6
Nitration	Abs/cm	*ASTM D7624	>20	7.8	8.4	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	21.3	22.5
FLUID <u>DEGRAI</u>	NOITAC	method			history1	history2
FLUID DEGRAD					history1	•
Oxidation Base Number (BN)	Abs/.1mm mg KOH/g	method *ASTM D7414 ASTM D2896	limit/base >25 9.8	16.2 10.09	history1 17.7 8.97	history2 19.7 8.90



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	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.4	12.6	12.4

Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Severe 40 Sillicon (ppm) Severe 40 Severe 40 Severe 40 Severe 40 Sillicon (ppm) Severe 40 Se	V130 @	100 0	C) L	טדדט ווווכ	10.4	12.7		12.0		12.7	
250	GRA	APHS										
200	Iron	(ppm)					Lead (ppm)				
Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Severe 40 40 40 40 40 40 40 40 40 4	Savara		<u> </u>				Savara				-	
Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Severe 40 40 40 40 40 40 40 40 40 4	150											
Copper (ppm) Copper (ppm) Copper (ppm) Viscosity @ 100°C Base (MH)M bhoomal	100 - Abnorm	iai				-	407					
Aluminum (ppm) Chromium (ppm) Copper (ppm) Copper (ppm) Severe Silicon (ppm) Copper (ppm) Sovere Copper (ppm) Sovere Silicon (ppm) Sovere Sovere Silicon (ppm) Sovere Sovere Sovere Silicon (ppm) Sovere So	0						0	_		\Rightarrow		
Aluminum (ppm) Chromium (ppm) Copper (ppm) Copper (ppm) Severe Silicon (ppm) Copper (ppm) Sovere Copper (ppm) Sovere Silicon (ppm) Sovere Sovere Silicon (ppm) Sovere Sovere Sovere Silicon (ppm) Sovere So	sb28/20	Jun9/21	sb15/22	an 16/23	ul26/23	/lar6/24	sb28/20	Jun9/21	sb15/22	m16/23	ul26/23	Mar6/24
Service Serv				- N	7	_				5	7	_
Abnormal Copper (ppm) Copper (ppm) Viscosity @ 100°C Base Abnormal	50 Severe						50					
Copper (ppm) Copper (ppm) Silicon (ppm) Solution (ppm) Viscosity @ 100°C Base Number Abnormal	40 + 0						40 T Q					
Copper (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Solution (ppm) Silicon (ppm) Solution (ppm) Solut	E Abnorm	ial .					20 - Abnormal					
Copper (ppm) Silicon												
Copper (ppm) Silicon (ppm) Solicon		19/21	5/22	6/23	6/23	6/24		19/21	5/22 -	6/23 -	6/23	Mar6/24
Severe S				Jan	Juľ	Ma				Jan1	Juľ	Ma
100	400		1)					(ppm)				
Viscosity @ 100°C Abnormal Viscosity @ 100°C Base Number Abnormal (b) 100 b 885e (b) 400 b 885e (c) 400 b 885e (d) 400 b 885e (d) 400 b 885e		al					60 -					
Viscosity @ 100°C Base Number Abnormal	200						E 40					
Viscosity @ 100°C Base Number Abnormal Base	100-						20 - Abnormal					
Viscosity @ 100°C Base Number 18	0 0	21		23	53			21	72	- 53	53	74
20 18 Abnormal 12.0 Base 12.0 Ba	Feb28/2	Jung/	Feb 15/2	Jan 16/	Jul26/7	Mar6/	Feb28//	/gunf	Feb 15/2	Jan 16/7	Jul26/7	Mar6/24 -
18		sity @ 1	.00°C					lumbe	r			
101		al					Base Base					
101							0.8 K					
101		al		_			4.0					
Jun8/21 Jun8/21 Jun8/21 Jun8/21 Jun8/21 Jun8/21	124						% 2.0					
Fet L Jan Fet L July 1	28/20	un9/21-	15/22	16/23	126/23	ar6/24 .		un9/21-	15/22	16/23	126/23	Mar6/24 -
	골	ゔ	量	Jan	n n	Σ	Feb	Ť	골	Jan	η	Š



Certificate L2367

Laboratory Sample No.

Lab Number : 06115454 Unique Number : 10924287

: PCA0109547 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 11 Mar 2024 Tested

: 13 Mar 2024 Diagnosed : 13 Mar 2024 - Wes Davis

WIN Waste Innovations - Shop # - Taunton 565 WINTHROP ST

TAUNTON, MA US 02780

Contact: Dave Wilson dwilson@win-waste.com

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)

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