

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (9 GAL)

SAMPLE INFORMATION method

ov2020 Mar2021 Dec2021 Apr2022 Jul2022 Nov2022 Mar2023

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

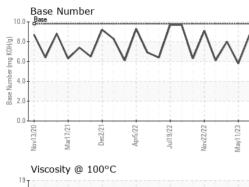
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

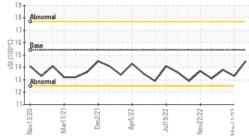
Sample Number		Client Info		PCA0102973	PCA0098088	PCA0090421
Sample Date		Client Info		10 Aug 2023	11 May 2023	10 Mar 2023
Machine Age	hrs	Client Info		29699	29037	28734
Oil Age	hrs	Client Info		662	303	300
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	4	11	5
Chromium	ppm	ASTM D5185m	>20	<1	1	0
Nickel	ppm	ASTM D5185m	>5	4	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	14	11
Lead	ppm	ASTM D5185m	>40	0	3	<1
Copper	ppm	ASTM D5185m	>330	2	1	<1
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	1	5	8
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	66	53	55
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	1060	928	996
Calcium	ppm	ASTM D5185m	1070	1179	1151	1201
Phosphorus	ppm	ASTM D5185m	1150	1126	957	1077
Zinc	ppm	ASTM D5185m	1270	1334	1255	1379
Sulfur	ppm	ASTM D5185m	2060	3926	3571	3865
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	3	4	3
Sodium	ppm	ASTM D5185m		7	8	5
Potassium	ppm	ASTM D5185m	>20	4	4	3
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	0.2	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	5.8	9.3	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.0	20.3	18.2
FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	16.6	14.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.7	5.8	8.0



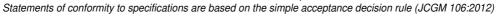
OIL ANALYSIS REPORT

VISUAL





\mathcal{N}	$\Lambda $							
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	$\vee \wedge /$	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
22	/22	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Apr5/22 Jul19/22	Nov22/22 May11/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	~ 2	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
					>0.2		NEG	
		Free Water	scalar	*Visual		NEG		NEG
		FLUID PROPE			limit/base		history1	history2
		Visc @ 100°C	cSt	ASTM D445	15.4	14.5	13.3	13.8
\sim	$\sim\sim$	GRAPHS						
		Ferrous Alloys						
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Apr5/22 Jul19/22	Nov22/22 M=.11/22	14+ sessesses nickel	$\Lambda \Lambda$					
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				Juli 9/22 -	May11/23	Dage Number		
		Mod 2000 1000 1000 1000 1000 1000 1000 100		Juli 9/22 -		Base Number		
		Widd d d d d d d d d d d d d d d d d d d		Juli 9/22				
		Viscosity @ 100°		Juli 9/22	10		$\gamma \Lambda T$	$\lambda \Lambda \Lambda$
		Wiscosity @ 100%		Juli 9/22	10		\mathcal{M}	W
		Wiscosity @ 100%		Juli 19/22 Novi22/22	10	Base	\mathcal{M}	W
		Viscosity @ 100°		Juit 1922 Novi22/22	10		\mathcal{M}	W
		Viscosity @ 100°		Novi22/22	10 (b) HOX Bul) Jacquing ase		M	W
		Viscosity @ 100°		Val19/22	10 (b) HOX Bul) Jacquing ase		W	W
		Viscosity @ 100°	с ~~	~~~~	(B/HO) Bull Jage Winnper g		\mathcal{M}	W
		Viscosity @ 100°	с ~~	~~~~	10 (b)(hoy 6w) Jaquing see 2 0		\mathcal{M}	222
		Viscosity @ 100%	с ~~	Jul1922 Jul1922 Mov22122 Mov22122	(B/HO) Bull Jage Winnper g		Apr5/22 Apr5/22	Nov2222 May 11/23
		Viscosity @ 100°	C April22	Jul 19/22	10 8 (b) HOX (b) HOX (b) HOX (b) HOX (b) HOX (b) HOX (b) HOX (c) HOX	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Api5/22 Jul19/22	
4	Laboratory	Viscosity @ 100° booma booma booma booma booma booma booma booma czczod czcz	C	ZZ6JIIn son Ave., Ca	10 10 10 10 10 10 10 10 10 10	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	April 222 BETHEL HEIGI	HTS (NWA AF
	Sample No.	Viscosity @ 100° booma booma booma booma contraction booma contraction booma contraction contractio	C ZZggddy 501 Madii Received	czicijin son Ave., Ca d : 05 s	10 10 10 10 10 10 10 10 10 10	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	BETHEL HEIG	HTS (NWA AF 348 HWY 264
	Sample No. Lab Number	Viscosity @ 100% Uiscosity @	C Total Madie Received Diagnos		10 10 10 10 10 10 10 10 10 10	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	BETHEL HEIG	HTS (NWA AF 348 HWY 264 _ HEIGHTS, A
	Sample No. Lab Number Unique Number	Viscosity @ 100% Viscosity @ 100% Viscosity @ 100% CZUJEW Viscosity @ 100% CZUJEW Viscosity @ 100% CZUJEW Viscosity @ 100% CZUJEW CZUJEW Viscosity @ 100% CZUJEW	C ZZggddy 501 Madii Received		10 10 10 10 10 10 10 10 10 10	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		HTS (NWA AF 348 HWY 264 - HEIGHTS, A US 7276
rtificate L2367	Sample No. Lab Number Unique Number Test Package	Viscosity @ 100% Viscosity @ 100% Viscosity @ 100% CZUJEW Viscosity @ 100% CZUJEW Viscosity @ 100% CZUJEW Viscosity @ 100% CZUJEW CZUJEW Viscosity @ 100% CZUJEW	C Total Madia Received Diagnos Diagnost	son Ave., Ca d : 05 s ed : 05 s tician : We	ry, NC 2751 Sep 2023 s Davis	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22594 BETHEL HEIGI BETHEL HEIGI EBETHEL Contact: RC	HTS (NWA A I 348 HWY 264 _ HEIGHTS, A



Submitted By: ALSO ORIVANAR ORIHAR ORITOP - JAMIE HAYWORTH