

OIL ANALYSIS REPORT

Sample Rating Trend



Area Charlestown 601

Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- 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.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0122831	PCA0066771	PCA0059474
Sample Date		Client Info		17 May 2024	27 Jul 2022	21 Apr 2022
Machine Age	mls	Client Info		548714	400553	379795
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>200	21	13	17
Chromium	ppm	ASTM D5185m	>20	2	1	2
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	10	6	8
Lead	ppm	ASTM D5185m	>30	<1	0	<1
Copper	ppm	ASTM D5185m	>30	9	3	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	4	5	6
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	50	65	66	68
Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Magnesium	ppm	ASTM D5185m	950	1010	970	953
Calcium	ppm	ASTM D5185m	1050	1170	1156	1157
Phosphorus	ppm	ASTM D5185m	995	972	1023	1084
Zinc	ppm	ASTM D5185m	1180	1240	1284	1316
Sulfur	ppm	ASTM D5185m	2600	2796	3273	3037
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	5	5	3
Sodium	ppm	ASTM D5185m		3	1	0
Potassium	ppm	ASTM D5185m	>20	3	0	2
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.6	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	9.5	10.6	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.9	23.1	20.9
FLUID DEGRAD	DATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	19.9	18.0
Base Number (BN)	mg KOH/g	ASTM D2896		8.89	7.54	8.67
6:39:44) Rev: 1					Submitted By: B	RYAN WINTER



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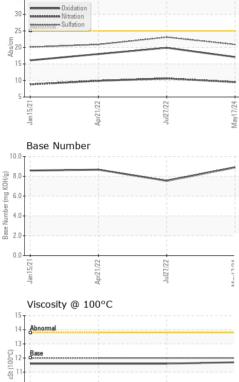
10 Abnorma

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Jan 15/21

vpr21/22





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	LIGHT	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
17/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
May	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		ter scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PR	OPERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.7	11.6	11.6
	Iron (ppm)				Lead (ppm)		
Y C	Saura				Severe		
	500				T		
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	100-			20			
	0	2	2	0		5	1
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	F.0.	opm)		50	Chromium (p	pm)	
	Gevere				Severe		
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	15/21	(21/22	127/22	17/24	15/21	(21/22 (21/22	
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	Copper (ppn ⁶⁰ T Severe	n)		50	,		
	50			40			
	40 Abnormal			E 30	Abnormal	-	
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	10			10			
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	14 Abnormal			5.8 No.	•		
	00012 Base			<u></u> E 6.0 평			
				4.0 N	•		
	Abnormal		1	2.0 82 82 82 82 82 82 82 82 82 82 82 82 82			
	2/21	1/22 +	7/22		5/21	1/22 -	4
	Jan 1	Apr2	Jul2	May17/24	Jan 15/2	Apr21/22	
	Martined Action	Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Wa Free Water FLUID PR Visc @ 100°C GRAPHS Iron (ppm) 00 00 00 00 00 00 00 00 00 00 00 00 00	Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Free Water scalar Free Water scalar Free Water scalar Muninum (ppm) Aluminum (ppm) Copper (ppm) Severe Abnormal Base Abnormal Abnormal Base Abnormal Abnormal Base Abnormal Abnorm	Yellow Metal scalar *Visual Precipitate scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Odor scalar *Visual Odor scalar *Visual Free Water scalar *Visual Astronometical *Visual Astronometical *Visual Copper (ppm) Copper (ppm) Copper (ppm) Copper (ppm) Viscosity @ 100°C Viscosity @ 100°C	Yellow Metal scalar Visual NONE Precipitate scalar Visual NONE Sitt scalar Visual NONE Sand/Dirt scalar Visual NONE Appearance scalar Visual NORML Debris scalar Visual NORML Appearance scalar Visual NORML Emulsified Water scalar Visual NORML Emulsified Water scalar Visual NORML Emulsified Water scalar Visual NORML Emulsified Water scalar Visual NORML Multiple Scalar Visual NORML Emulsified Water scalar Visual NORML Multiple Scalar Visual NORML Emulsified Water scalar Visual Scalar Visual NORML Emulsified Water scalar Visual Scalar Visual NORML Emulsified Water scalar Visual Visual Scalar Visual Scalar Visual Scalar Visual Scalar Visual	Yellow Metal scalar Visual NONE NONE Precipitate scalar Visual NONE NONE Siti scalar Visual NONE NONE Sand/Dit scalar Visual NONE NONE Sand/Dit scalar Visual NONE NONE Appearance scalar Visual NORML NORML Odor scalar Visual NORML NORML Odor Scalar Visual NORML NORML NORML NORML Odor Scalar Visual NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML NORML	Yellow Metal scalar 'Visual NONE NONE NONE NONE Precipitate scalar 'Visual NONE NONE NONE NONE Silt scalar 'Visual NONE NONE NONE NONE Sand/Dirt scalar 'Visual NONE NONE NONE NONE Sand/Dirt scalar 'Visual NONE NONE NONE Appearance scalar 'Visual NORML NORML NORML NORML Odor scalar 'Visual NORML NORML NORML NORML Silt 'Scalar 'Visual NORML NORML NORML NORML Normal NORML NORML NORML Sand/Dirt scalar 'Visual NORML NORML NORML Normal NORML NORML Scalar 'Visual NORML NORML NORML Normal NORML NORML Scalar 'Visual NORML NORML NORML Normal Normal Nor

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

Submitted By: BRYAN WINTER

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