

OIL ANALYSIS REPORT

Sample Rating Trend





Component 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

Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition

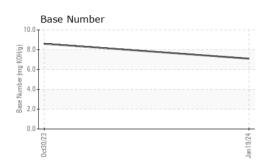
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

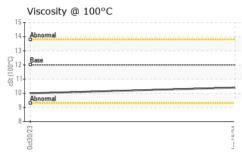
SAMPLE INFORMATION method linit/base current history1 history2 Sample Number Client Info 19 Jan 2024 30 Oct 2023 Machine Age mis Client Info 40521 25696 Oil Age mis Client Info 0 0 Oil Age mis Client Info N/A N/A Sample Status method Imit/base current history1 history2 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG NEG Wetar WC Method >0.2 NEG Wetar WC Method >0 -10 Vetar ppm ASTM 05185n >100 177 132 Korkel ppm ASTM 05185n >20 6 5 Nickel ppm ASTM 05185n	GAL)			0ct2023	Jan2024		
Sample Date Client Info 19 Jan 2024 30 Oct 2023 Machine Age mis Client Info 40521 25696 Oil Age mis Client Info 0 0 Sample Status Client Info N/A N/A CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 Water WC Method >0.2 NEG NEG WEAR METALS method imit/base current history1 history2 fron ppm ASTM 05185m >100 177 132 Sliver ppm ASTM 05185m >20 6 5 Aluminum ppm ASTM 05185m >30 0 <1 Aluminum ppm ASTM 05185m >30 43 38 Copper ppm <td< th=""><th>SAMPLE INFOR</th><th>MATION</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></td<>	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 19 Jan 2024 30 Oct 2023 Machine Age mis Client Info 40521 25696 Oil Age mis Client Info 0 0 Sample Status Client Info N/A N/A CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		PCA0117047	PCA0110463	
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Oil Changed Client Info N/A N/A N/A Sample Status Imit/base current NoRMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >5.5 <1.0	•	mls			0		
Sample Status NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 Fuel WC Method >5 <1.0	-						
Fuel WC Method >5 <1.0 <1.0 Water WC Method >0.2 NEG NEG Glycol WC Method NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 177 132 Chromium ppm ASTM D5185m >20 6 5 Nickel ppm ASTM D5185m >20 75 58 Silver ppm ASTM D5185m >20 75 58 Lead ppm ASTM D5185m >40 -1 Copper ppm ASTM D5185m >15 4 3 Cadmium ppm ASTM D5185m 2 21 29 ADDITIVES method imit/base current history1 Manganese	-						
Water WC Method >0.2 NEG NEG Glycol WC Method Imil/base current history1 history2 Iron ppm ASTM D5185m >100 177 132 Chromium ppm ASTM D5185m >20 6 5 Nickel ppm ASTM D5185m >4 2 2 Aluminum ppm ASTM D5185m >3 0 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
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WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 177 132 Chromium ppm ASTM D5185m >20 6 5 Nickel ppm ASTM D5185m <1	Water		WC Method	>0.2	NEG	NEG	
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Nickel ppm ASTM D5185m >4 2 2 Titanium ppm ASTM D5185m <	Chromium		ASTM D5185m	>20	6	5	
Titanium ppm ASTM D5185m <1 <1 <1 Silver ppm ASTM D5185m >3 0 <1							
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Lead ppm ASTM D5185m >40 <1 <1 <1 Copper ppm ASTM D5185m >330 43 38 Tin ppm ASTM D5185m >15 4 3 Vanadium ppm ASTM D5185m 0 <1	Aluminum		ASTM D5185m	>20	75	58	
Copper ppm ASTM D5185m >330 43 38 Tin ppm ASTM D5185m >15 4 3 Vanadium ppm ASTM D5185m 0 <1	Lead			>40	<1	<1	
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Barium ppm ASTM D5185m 0 3 <1 Molybdenum ppm ASTM D5185m 50 52 49 Manganese ppm ASTM D5185m 0 16 14 Magnesium ppm ASTM D5185m 950 601 567 Calcium ppm ASTM D5185m 1050 1782 1756 Calcium ppm ASTM D5185m 1050 1782 1756 Phosphorus ppm ASTM D5185m 1050 1782 1756 Sulfur ppm ASTM D5185m 995 813 812 Sulfur ppm ASTM D5185m 2600 2459 2450 Solicon ppm ASTM D5185m >25 22 17 Solicon ppm ASTM D5185m >20 126 103 INFRA-RED method <t< td=""><td>ADDITIVES</td><td></td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></t<>	ADDITIVES		method	limit/base	current	history1	history2
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Manganese ppm ASTM D5185m 0 16 14 Magnesium ppm ASTM D5185m 950 601 567 Calcium ppm ASTM D5185m 1050 1782 1756 Phosphorus ppm ASTM D5185m 995 813 812 Zinc ppm ASTM D5185m 995 813 812 Sulfur ppm ASTM D5185m 995 813 812 Sulfur ppm ASTM D5185m 995 813 812 Sulfur ppm ASTM D5185m 2600 2459 2450 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >20 126 103 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 </td <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>50</td> <th>52</th> <td>49</td> <td></td>	Molybdenum	ppm	ASTM D5185m	50	52	49	
Magnesium ppm ASTM D5185m 950 601 567 Calcium ppm ASTM D5185m 1050 1782 1756 Phosphorus ppm ASTM D5185m 995 813 812 Zinc ppm ASTM D5185m 1180 1020 980 Sulfur ppm ASTM D5185m 2600 2459 2450 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 22 17 Sodium ppm ASTM D5185m >20 126 103 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.6 Nitration Abs/mm *ASTM D7624 >20 13.0 10.3 Sulfation Abs/.1mm <t< td=""><td>-</td><td></td><td>ASTM D5185m</td><td>0</td><th>16</th><td>14</td><td></td></t<>	-		ASTM D5185m	0	16	14	
Calcium ppm ASTM D5185m 1050 1782 1756 Phosphorus ppm ASTM D5185m 995 813 812 Zinc ppm ASTM D5185m 1180 1020 980 Sulfur ppm ASTM D5185m 2600 2459 2450 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 22 17 Sodium ppm ASTM D5185m >20 126 103 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.6 Nitration Abs/cm *ASTM D7624 >20 13.0 10.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 23.8 FLUID DEGRADATION method	Magnesium		ASTM D5185m	950	601	567	
Phosphorus ppm ASTM D5185m 995 813 812 Zinc ppm ASTM D5185m 1180 1020 980 Sulfur ppm ASTM D5185m 2600 2459 2450 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 22 17 Sodium ppm ASTM D5185m >25 22 1 Sodium ppm ASTM D5185m >20 126 103 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.6 Nitration Abs/cm *ASTM D7624 >20 13.0 10.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 23.8 FLUID DEGRADATION method <thi< td=""><td>-</td><td></td><td>ASTM D5185m</td><td>1050</td><th>1782</th><td>1756</td><td></td></thi<>	-		ASTM D5185m	1050	1782	1756	
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SulfurppmASTM D5185m260024592450CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>252217SodiumppmASTM D5185m>20126103PotassiumppmASTM D5185m>20126103INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.90.6NitrationAbs/cm*ASTM D7624>2013.010.3SulfationAbs/lim*ASTM D7615>3024.723.8FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/lim*ASTM D7414>2525.421.9	Zinc		ASTM D5185m	1180	1020	980	
Silicon ppm ASTM D5185m >25 22 17 Sodium ppm ASTM D5185m >20 2 1 Potassium ppm ASTM D5185m >20 126 103 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.6 Nitration Abs/cm *ASTM D7624 >20 13.0 10.3 Sulfation Abs/.1mm *ASTM D7624 >30 24.7 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 25.4 21.9	Sulfur		ASTM D5185m	2600	2459	2450	
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INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>30.90.6NitrationAbs/cm*ASTM D7624>2013.010.3SulfationAbs/.1mm*ASTM D7415>3024.723.8FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2525.421.9	Sodium	ppm	ASTM D5185m		2	1	
Soot % % *ASTM D7844 >3 0.9 0.6 Nitration Abs/cm *ASTM D7624 >20 13.0 10.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.7 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 25.4 21.9	Potassium	ppm	ASTM D5185m	>20	126	103	
Nitration Abs/cm *ASTM D7624 >20 13.0 10.3 Sulfation Abs/.1mm *ASTM D7615 >30 24.7 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 25.4 21.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 24.7 23.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 25.4 21.9	Soot %	%	*ASTM D7844	>3	0.9	0.6	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 25.4 21.9	Nitration	Abs/cm	*ASTM D7624	>20	13.0	10.3	
Oxidation Abs/.1mm *ASTM D7414 >25 25.4 21.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	24.7	23.8	
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 7.1 8.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	25.4	21.9	
	Base Number (BN)	mg KOH/g	ASTM D2896		7.1	8.6	



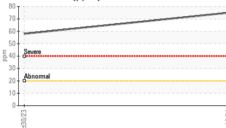
OIL ANALYSIS REPORT

VICLIAI

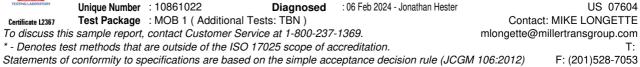








VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
ellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Ddor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
ree Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
/isc @ 100°C	cSt	ASTM D445	12.00	10.4	10.0	
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
Severe			80	Severe		
			60			
Abnormal			40	Abnormal		
			20			
L <u>.</u>						
0ct30/23			Jan 19/24	0ct30/23		
			Jar			
Aluminum (ppm)			50	Chromium (p	pm)	
			40	Severe		
2 million			20			
Severe			20	Abnormal		
Abnormal			10	-		
0ct30/23			Jan 19/24	0ct30/23		
			Jai	് Silicon (ppm)		
Copper (ppm)			80	Silicon (ppm)		
Abnoimal			60			
			튭.40	Abnormal		
			20			
53			0			
0ct30/23			Jan 19/24	0ct30/23		
Viscosity @ 100%	С			Base Number		
Abnormal			<u>م</u> الم			
Base			는 6.0 고 문 4.0			
Abnormal			(1) HOX KOH Base Winnber 4.0 2.0			
P			0.0			
0ct30/23			Jan 19/24	0ct30/23		
Octi			Jan1	Octi		
earCheck USA - 50 CA0117047 0 <mark>78931</mark> 861022	Recei Teste	ived : 02 ed : 06 nosed : 06	r, NC 27513 2 Feb 2024 3 Feb 2024 Feb 2024 - Jonati		ILLER TRUCK I 39 INC HASBROUCK Contact: MII	USTRIAL AN HEIGHTS, I US 076



Laboratory

Sample No. Lab Number

F: (201)528-7053

T: