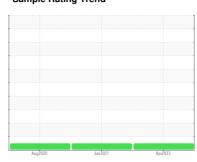


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 91029 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (10 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

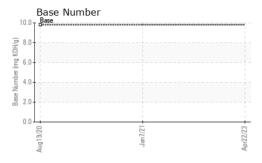
Fluid Condition

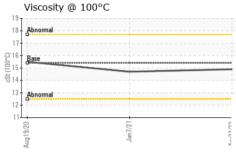
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION	GAL)		Au	g2020	Jan2021 Apr20	23	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age mls Client Info 652023 546736 531253 Oil Age mis Client Info 18445 15100 15953 Oil Changed Client Info Changed Changed Changed Changed Sample Status Client Info Changed NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		SBP0004304	SBP12226001	SBP46177042
Oil Age mls Client Info 18445 15100 15953 Oil Changed Sample Status Client Info Changed Changed Changed Changed Changed Changed Changed NORMAL NOR	Sample Date		Client Info		22 Apr 2023	07 Jan 2021	19 Aug 2020
Oil Changed Sample Status Client Info MoRMAL Changed NORMAL NORMAL Changed NEG Change NEG Ch	Machine Age	mls	Client Info		652023	546736	531253
Sample Status	Oil Age	mls	Client Info		18445	15100	15953
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imilibase current history1 history2 WEAR METALS method limilibase current history1 history2 Iron ppm ASTM D5185m >80 14 20 25 Chromium ppm ASTM D5185m >55 2 2 2 Nickel ppm ASTM D5185m >2 <1	CONTAMINATIO	N	method	limit/base	current	history1	history2
Silycol WC Method Imit/Dase Current Inistory Inistory	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 14 20 25 Chromium ppm ASTM D5185m >5 2 2 2 Nickel ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 6 7 20 Lead ppm ASTM D5185m >30 0 0 1 Copper ppm ASTM D5185m >30 0 0 1 Copper ppm ASTM D5185m >5 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	0.0	0.0
Chromium ppm ASTM D5185m >5 2 2 2 2 Nickel ppm ASTM D5185m >2 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	14	20	25
Titanium	Chromium	ppm	ASTM D5185m	>5	2	2	2
Silver	Nickel	ppm	ASTM D5185m	>2	<1	1	1
Aluminum ppm ASTM D5185m >30 6 7 20 Lead ppm ASTM D5185m >30 0 0 1 Copper ppm ASTM D5185m >150 2 4 7 Tin ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 4 22 18 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 -1 0 0 Magnesium ppm ASTM D5185m 0 -1 0 0 Magnesium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1070 1065 1110	Titanium	ppm	ASTM D5185m		0	0	0
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >150 2 4 7 Tin ppm ASTM D5185m >5 <1	Aluminum	ppm	ASTM D5185m	>30	6	7	20
Tin ppm ASTM D5185m >5 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 22 18 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 </td <td>Lead</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>30</td> <td>0</td> <td>0</td> <td>1</td>	Lead	ppm	ASTM D5185m	>30	0	0	1
Tin ppm ASTM D5185m >5 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 22 18 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 <	Copper	ppm	ASTM D5185m	>150	2	4	7
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 22 18 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 59 2 5 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1120 1306 683 807 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current h	Tin	ppm	ASTM D5185m	>5	<1	0	0
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 22 18 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 2 5 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1120 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0	Cadmium	ppm			0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 2 5 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 20 4 4 5 Sodium ppm ASTM D5185m 20 3 12 37 Chlorine ppm ASTM D5185m <	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 2 5 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td>4</td> <td>22</td> <td>18</td>	Boron	ppm	ASTM D5185m	0	4	22	18
Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3	Barium	ppm	ASTM D5185m	0	0	0	0
Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.7	Molybdenum	ppm	ASTM D5185m	60	59	2	5
Magnesium ppm ASTM D5185m 1010 1005 592 728 Calcium ppm ASTM D5185m 1070 1065 1110 1321 Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m >20 3 12 37 Potassium ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20	-	- ' '	ASTM D5185m	0	<1	0	0
Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 20 3 12 37 Chlorine ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current <td>Magnesium</td> <td></td> <td>ASTM D5185m</td> <td>1010</td> <td>1005</td> <td>592</td> <td>728</td>	Magnesium		ASTM D5185m	1010	1005	592	728
Phosphorus ppm ASTM D5185m 1150 1047 653 718 Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 20 3 12 37 Chlorine ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>1070</td> <td>1065</td> <td>1110</td> <td>1321</td>	Calcium	ppm	ASTM D5185m	1070	1065	1110	1321
Zinc ppm ASTM D5185m 1270 1306 683 807 Sulfur ppm ASTM D5185m 2060 3773 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13	Phosphorus		ASTM D5185m	1150	1047	653	718
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/.1mm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7		ppm	ASTM D5185m	1270	1306	683	807
Silicon ppm ASTM D5185m >20 4 4 5 Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Sulfur	ppm	ASTM D5185m	2060	3773		
Sodium ppm ASTM D5185m 1 6 13 Potassium ppm ASTM D5185m >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	CONTAMINANT	S	method	limit/base	current	history1	history2
Potassium Chlorine ppm ppm ASTM D5185m ppm >20 3 12 37 Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Silicon	ppm	ASTM D5185m	>20	4	4	5
Chlorine ppm ASTM D5185m 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Sodium	ppm	ASTM D5185m		1	6	13
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Potassium	ppm	ASTM D5185m	>20	3	12	37
Soot % % *ASTM D7844 >3 0.7 1.66 2.06 Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Chlorine	ppm	ASTM D5185m			0	0
Nitration Abs/cm *ASTM D7624 >20 6.7 Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Soot %	%	*ASTM D7844	>3	0.7	1.66	2.06
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7	Nitration	Abs/cm	*ASTM D7624	>20	6.7		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	17.7		
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOHig ASTM D2896 9.8 8.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7		
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.1		



OIL ANALYSIS REPORT

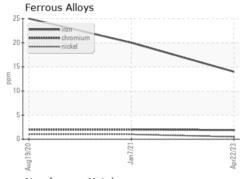


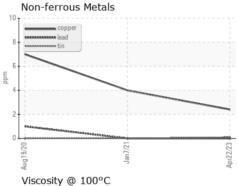


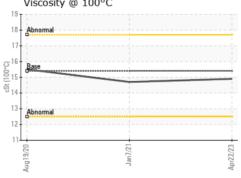
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.2	NEG		
Free Water	scalar	*Visual		NEG		

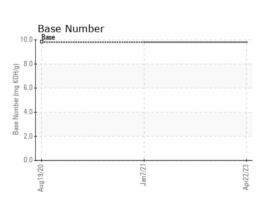
FLUID PROPER	HES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.9	14.7	15.5

GRAPHS











Certificate L2367

Laboratory Sample No.

: SBP0004304 Lab Number : 05841322 Unique Number : 10460125 Test Package : FLEET

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 08 May 2023 **Tested**

: 09 May 2023 Diagnosed : 09 May 2023 - Wes Davis

Sapp Bros. Fleet - West Point Location

660 S Main St. West Point, NE US 68788

Contact: DOUG EDWARDS

dedwards@sappbros.net T: (402)342-5485

* - 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)