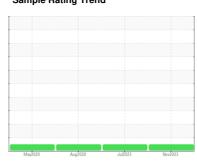


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **387398** 

Component **Diesel Engine** 

PETRO CANADA DURON SHP 10W30 (--- GAL)

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

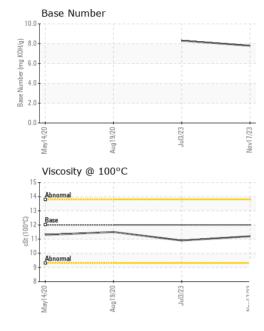
### **Fluid Condition**

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	GAL)		May202	0 Aug2020	Jul2023 No	v2023	
Sample Date	SAMPLE INFORT	MATION	method	limit/base	current	history1	history2
Machine Age  mls  Client Info  140706  130947  82543    Oil Age  mls  Client Info  0  11580  12938    Oil Changed  Client Info  Changed  Changed  Changed  Changed    Sample Status  NoRMAL  NORMAL  NORMAL  NORMAL  NORMAL    CONTAMINATION  method  limit/base  current  history1  history2    Fuel  WC Method  >5  <1.0  <1.0  <1.0  <1.0    Water  WC Method  >0.2  NEG  NEG  NEG  NEG    Glycol  WC Method  >0.2  NEG  NEG  NEG  NEG    WEAR METALS  method  limit/base  current  history1  history1  history2    Iron  ppm  ASTM D5185m  >10  29  36  26    Chromium  ppm  ASTM D5185m  >20  <1  <1  <1  <1  <1  <1  <1  <1  <1	Sample Number		Client Info		PCA0099009	PCA0098970	PCA0023629
Oil Age  mls  Client Info  0  11580  12938    Oil Changed  Client Info  Changed  Change	Sample Date		Client Info		17 Nov 2023	03 Jul 2023	19 Aug 2020
Oil Changed Sample Status  Client Info  Changed NORMAL  NORMAL <th< th=""><td>Machine Age</td><td>mls</td><td>Client Info</td><td></td><th>140706</th><td>130947</td><td>82543</td></th<>	Machine Age	mls	Client Info		140706	130947	82543
NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history2   history3   history3   history3   history3   history3   history4   history4   history4   history5   neg	Oil Age	mls	Client Info		0	11580	12938
CONTAMINATION  method  limit/base  current  history1  history2    Fuel  WC Method  >5  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  <1.0  NEG  NEG </th <td>Oil Changed</td> <td></td> <td>Client Info</td> <td></td> <th>Changed</th> <td>Changed</td> <td>Changed</td>	Oil Changed		Client Info		Changed	Changed	Changed
Fuel  WC Method  >5  <1.0	Sample Status				NORMAL	NORMAL	NORMAL
Water  WC Method  >0.2  NEG  NEG  NEG  NEG    Glycol  WC Method  NEG  NEG  NEG  NEG    WEAR METALS    Iron  ppm  ASTM D5185m  >10  1<	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol   WC Method   Imit/base   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  >100  29  36  26    Chromium  ppm  ASTM D5185m  >20  <1  <1  <1    Nickel  ppm  ASTM D5185m  >4  0  <1  0    Titanium  ppm  ASTM D5185m  >4  0  <1  <1    Silver  ppm  ASTM D5185m  >3  <1  <1  <1  <1    Aluminum  ppm  ASTM D5185m  >20  5  3  8     Lead  ppm  ASTM D5185m  >40  5  3  2     Copper  ppm  ASTM D5185m  >30  3  24  2     Tin  ppm  ASTM D5185m  >15  2  1  1     Vanadium  ppm  ASTM D5185m  <15  2  1  1     Cadmium	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium  ppm  ASTM D5185m  >20  <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel  ppm  ASTM D5185m  >4  0  <1	Iron	ppm	ASTM D5185m	>100	29	36	26
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver  ppm  ASTM D5185m  >3  <1	Nickel	ppm	ASTM D5185m	>4	0	<1	0
Aluminum  ppm  ASTM D5185m  >20  5  3  8    Lead  ppm  ASTM D5185m  >40  5  3  2    Copper  ppm  ASTM D5185m  >330  3  24  2    Tin  ppm  ASTM D5185m  >15  2  1  1    Antimony  ppm  ASTM D5185m    0    Vanadium  ppm  ASTM D5185m  <1  0  0    Cadmium  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  5  6  7    Barium  ppm  ASTM D5185m  0  0  0  <1  1  1  1  1  1  1  1  1  1  1  1  1  1 <td>Titanium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>&lt;1</th> <td>&lt;1</td> <td>5</td>	Titanium	ppm	ASTM D5185m		<1	<1	5
Lead  ppm  ASTM D5185m  >40  5  3  2    Copper  ppm  ASTM D5185m  >330  3  24  2    Tin  ppm  ASTM D5185m  >15  2  1  1    Antimony  ppm  ASTM D5185m    0    Vanadium  ppm  ASTM D5185m   0  0    Cadmium  ppm  ASTM D5185m  <-1	Silver	ppm	ASTM D5185m	>3	<1	<1	<1
Copper  ppm  ASTM D5185m  >330  3  24  2    Tin  ppm  ASTM D5185m  >15  2  1  1    Antimony  ppm  ASTM D5185m    0    Vanadium  ppm  ASTM D5185m  <1  0  0    Cadmium  ppm  ASTM D5185m  <1  0  0    Cadmium  ppm  ASTM D5185m  2  5  6  7    Boron  ppm  ASTM D5185m  0  0  0  <1  history1    Boron  ppm  ASTM D5185m  0  0  0  <1  Mistory1    Boron  ppm  ASTM D5185m  0  0  0  <1  <1  1    Molybdenum  ppm  ASTM D5185m  0  0  0  <1  <1  1    Magnesium  ppm  ASTM D5185m  950  774  857  968    Calcium  ppm  ASTM D5185m <td>Aluminum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;20</td> <th>5</th> <td>3</td> <td>8</td>	Aluminum	ppm	ASTM D5185m	>20	5	3	8
Tin  ppm  ASTM D5185m  >15  2  1  1    Antimony  ppm  ASTM D5185m    0    Vanadium  ppm  ASTM D5185m    0    Cadmium  ppm  ASTM D5185m  <1	Lead	ppm	ASTM D5185m	>40	5	3	2
Antimony  ppm  ASTM D5185m   0    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  5  6  7    Barium  ppm  ASTM D5185m  0  0  0  <1    Molybdenum  ppm  ASTM D5185m  0  53  70  64    Manganese  ppm  ASTM D5185m  0  1  <1  1    Magnesium  ppm  ASTM D5185m  950  774  857  968    Calcium  ppm  ASTM D5185m  1050  1177  1219  1179    Phosphorus  ppm  ASTM D5185m  995  960  976  1075    Zinc  ppm  ASTM D5185m  2600  3238  2923  3005 <t< th=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;330</td><th>3</th><td>24</td><td>2</td></t<>	Copper	ppm	ASTM D5185m	>330	3	24	2
Vanadium  ppm  ASTM D5185m  <1	Tin	ppm	ASTM D5185m	>15	2	1	1
Cadmium  ppm  ASTM D5185m  <1	Antimony	ppm	ASTM D5185m				0
ADDITIVES  method  limit/base  current  history1  history2    Boron  ppm  ASTM D5185m  2  5  6  7    Barium  ppm  ASTM D5185m  0  0  0  <1    Molybdenum  ppm  ASTM D5185m  50  53  70  64    Manganese  ppm  ASTM D5185m  0  1  <1  1    Magnesium  ppm  ASTM D5185m  950  774  857  968    Calcium  ppm  ASTM D5185m  1050  1177  1219  1179    Phosphorus  ppm  ASTM D5185m  995  960  976  1075    Zinc  ppm  ASTM D5185m  2600  3238  2923  3005    CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  >20	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron  ppm  ASTM D5185m  2  5  6  7    Barium  ppm  ASTM D5185m  0  0  0  <1	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium  ppm  ASTM D5185m  0  0  0  <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum  ppm  ASTM D5185m  50  53  70  64    Manganese  ppm  ASTM D5185m  0  1  <1	Boron	ppm	ASTM D5185m	2	5	6	7
Manganese  ppm  ASTM D5185m  0  1  <1	Barium	ppm	ASTM D5185m	0	0	0	<1
Magnesium  ppm  ASTM D5185m  950  774  857  968    Calcium  ppm  ASTM D5185m  1050  1177  1219  1179    Phosphorus  ppm  ASTM D5185m  995  960  976  1075    Zinc  ppm  ASTM D5185m  1180  1081  1189  1295    Sulfur  ppm  ASTM D5185m  2600  3238  2923  3005    CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Molybdenum	ppm	ASTM D5185m	50	53	70	64
Calcium  ppm  ASTM D5185m  1050  1177  1219  1179    Phosphorus  ppm  ASTM D5185m  995  960  976  1075    Zinc  ppm  ASTM D5185m  1180  1081  1189  1295    Sulfur  ppm  ASTM D5185m  2600  3238  2923  3005    CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Manganese	ppm	ASTM D5185m	0	1	<1	1
Phosphorus  ppm  ASTM D5185m  995  960  976  1075    Zinc  ppm  ASTM D5185m  1180  1081  1189  1295    Sulfur  ppm  ASTM D5185m  2600  3238  2923  3005    CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Magnesium	ppm	ASTM D5185m	950	774	857	968
Zinc  ppm  ASTM D5185m  1180  1081  1189  1295    Sulfur  ppm  ASTM D5185m  2600  3238  2923  3005    CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Calcium	ppm	ASTM D5185m	1050	1177	1219	1179
Sulfur  ppm  ASTM D5185m  2600  3238  2923  3005    CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Phosphorus	ppm	ASTM D5185m	995	960	976	1075
CONTAMINANTS  method  limit/base  current  history1  history2    Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Zinc	ppm	ASTM D5185m	1180	1081	1189	1295
Silicon  ppm  ASTM D5185m  >25  3  3  4    Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Sulfur	ppm	ASTM D5185m	2600	3238	2923	3005
Sodium  ppm  ASTM D5185m  8  0  6    Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium  ppm  ASTM D5185m  >20  6  6  16    INFRA-RED  method  limit/base  current  history1  history2	Silicon	ppm	ASTM D5185m	>25	3	3	4
INFRA-RED method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		8	0	6
	Potassium	ppm	ASTM D5185m	>20	6	6	16
Soot 9/ 9/ *ASTM D79/4 > 2 <b>1</b> 1 1	INFRA-RED		method	limit/base	current	history1	history2
300t /6 /6 /6 /6 /6 /6 /6 /6 /6 /6 /6 /6 /6	Soot %	%	*ASTM D7844	>3	1	1.1	1
<b>Nitration</b> Abs/cm *ASTM D7624 >20 <b>12.0</b> 11.7 11.4	Nitration	Abs/cm	*ASTM D7624	>20	12.0	11.7	11.4
Sulfation  Abs/.1mm  *ASTM D7415  >30  21.1  21.4  20.8	Sulfation	Abs/.1mm	*ASTM D7415	>30	21.1	21.4	20.8
FLUID DEGRADATION method limit/base current history1 history2	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Oxidation Abs/.1mm *ASTM D7414 >25 <b>19.6</b> 18.5 17.7	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.6	18.5	17.7
Base Number (BN)  mg KOH/g  ASTM D2896  7.8  8.3	Base Number (BN)	mg KOH/g	ASTM D2896		7.8	8.3	



# **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
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.2	10.9	11.5
GRAPHS						
Iron (ppm)				Lead (ppm)		

Iron (ppm)			Lead (p	pm)		
Severe			Severe			
			00			
Abnormal			Abnormal			
			20			
	Jul3/23 +-	1/23	02/4	02/50	Jul3/23	
May 14/20	Slin	Nov17/23	May14/20	Aug19/20	Sin S	
Aluminum (ppm)			Chromi	um (ppm)		
Severe			Severe		-	
			20 Abnormal			
Abnormal			1			
			10			
May14/20 -	Jul3/23 -	Nov17/23 -	May14/20	Aug19/20	Jul3/23 -	
	7	Nov			-	
Copper (ppm)			Silicon (	ppm)		
Abironnal			60			
			E 40			
			Abnormal 20			
			0			
May14/20 Aug19/20	Jul3/23 -	Nov17/23	May14/20	Aug19/20	Jul3/23 ·	
≝		ž	≊ Base Ni			
V150051C) @ 100 C			10.0			
Abnormal			8.0			
Base			8.00 - 0.			
Abnormal			2.0			
May14/20 +	<u>.</u>		0.0	Aug19/20	<u></u>	
May14/20 Aug19/20	Jul3/23 ·	Nov17/23	May14/20	9/2	Jul3/23 ·	





Laboratory Sample No.

Lab Number : 06118084

Unique Number: 10926917 Test Package: MOB 1 (Additional Tests: TBN)

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0099009 Received

**Tested** Diagnosed

: 14 Mar 2024 : 15 Mar 2024

: 15 Mar 2024 - Wes Davis

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)

**MILLER TRUCK LEASING #112** 

1504 MAINLINE DR CINNAMINSON, NJ US 08077

Contact: MIKE BOYER

mboyer@millertransgroup.com T: (856)662-4264 F: (856)663-4898

Contact/Location: MIKE BOYER - MILPEN