

# **OIL ANALYSIS REPORT**

## Sample Rating Trend





Machine Id
DT818
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 10W30 (36 QTS)

# DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

## Contamination

There is no indication of any contamination in the

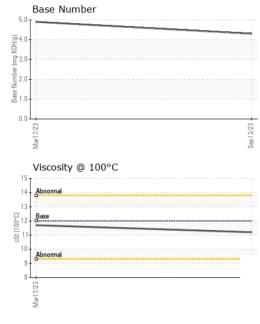
## **Fluid Condition**

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

Sample Date   Client Info   13 Sep 2023   17 Mar 2023	N 3HP 10W30 (3	0 Q13)		Mar2023	Sep 2023		
Sample Date   Client Info   13 Sep 2023   17 Mar 2023	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age         mls         Client Info         51659         26287            Oil Age         mls         Client Info         25372         26287            Oil Changed         Client Info         Changed         Changed            Sample Status         NORMAL         NORMAL            CONTAMINATION         method         Imitibase         current         history1         history2           Fuel         WC Method         NEG         NEG            WEAR METALS         method         imitibase         current         history1         history2           Iron         ppm         ASTM D5185m         >120         31         45            Nickel         ppm         ASTM D5185m         >20         2         2            Nickel         ppm         ASTM D5185m         >20         2         2            Aluminum         ppm         ASTM D5185m         >2         0         <1	Sample Number		Client Info		PCA0103242	PCA0091249	
Machine Age         mls         Client Info         51659         26287            Oil Age         mls         Client Info         25372         26287            Oil Changed         Client Info         Changed         Changed            Sample Status         NORMAL         NORMAL            CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         NEG         NEG             Glycol         WC Method         NEG         NEG         NEG            WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         31         45            Nickel         ppm         ASTM D5185m         >20         2         2            Nickel         ppm         ASTM D5185m         >2         0         <1	•		Client Info		13 Sep 2023	17 Mar 2023	
Oil Age         mls         Client Info         25372         26287	•	mls			-		
Contained   Client Info   Changed   NORMAL   N			Client Info				
NORMAL   NORMAL   NORMAL   CONTAMINATION   method   limit/base   current   history1   history2   history2	-						
Fuel	Sample Status				_		
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         31         45            Chromium         ppm         ASTM D5185m         >20         2         2            Nickel         ppm         ASTM D5185m         >20         2         9            Titanium         ppm         ASTM D5185m         >2         0         <1	Fuel		WC Method	>3.0	<1.0	<1.0	
Iron	Glycol		WC Method		NEG	NEG	
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	31	45	
Nickel	Chromium	ppm	ASTM D5185m	>20	2	2	
Titanium							
Silver							
Aluminum							
Lead							
Copper         ppm         ASTM D5185m         >330         38         45            Tin         ppm         ASTM D5185m         >15         2         4            Vanadium         ppm         ASTM D5185m         0         <1					-		
Tin							
Vanadium         ppm         ASTM D5185m         0         <1            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         1         13            Barium         ppm         ASTM D5185m         0         0         0            Molybdenum         ppm         ASTM D5185m         50         66         63            Manganese         ppm         ASTM D5185m         950         841         456            Magnesium         ppm         ASTM D5185m         950         841         456            Calcium         ppm         ASTM D5185m         995         917         973            Zinc         ppm         ASTM D5185m         995         917         973            Zinc         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1							
Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         2         1         13            Barium         ppm         ASTM D5185m         0         0         0            Molybdenum         ppm         ASTM D5185m         50         66         63            Manganese         ppm         ASTM D5185m         0         <1				>10			
ADDITIVES							
Boron		ррпп					
Barium         ppm         ASTM D5185m         0         0         0            Molybdenum         ppm         ASTM D5185m         50         66         63            Manganese         ppm         ASTM D5185m         0         <1	ADDITIVES		method		current		history2
Molybdenum         ppm         ASTM D5185m         50         66         63            Manganese         ppm         ASTM D5185m         0         <1	Boron	ppm		2			
Manganese         ppm         ASTM D5185m         0         <1         2            Magnesium         ppm         ASTM D5185m         950         841         456            Calcium         ppm         ASTM D5185m         1050         1270         1743            Phosphorus         ppm         ASTM D5185m         995         917         973            Zinc         ppm         ASTM D5185m         1180         1268         1266            Sulfur         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         >20         23         37            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844		ppm	ASTM D5185m	0	0	0	
Magnesium         ppm         ASTM D5185m         950         841         456            Calcium         ppm         ASTM D5185m         1050         1270         1743            Phosphorus         ppm         ASTM D5185m         995         917         973            Zinc         ppm         ASTM D5185m         1180         1268         1266            Sulfur         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30 <td>Molybdenum</td> <td>ppm</td> <td>ASTM D5185m</td> <td>50</td> <td>66</td> <td>63</td> <td></td>	Molybdenum	ppm	ASTM D5185m	50	66	63	
Calcium         ppm         ASTM D5185m         1050         1270         1743            Phosphorus         ppm         ASTM D5185m         995         917         973            Zinc         ppm         ASTM D5185m         1180         1268         1266            Sulfur         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         >20         23         37            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/.1mm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7	Manganese	ppm	ASTM D5185m	0	<1	2	
Phosphorus         ppm         ASTM D5185m         995         917         973            Zinc         ppm         ASTM D5185m         1180         1268         1266            Sulfur         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         <	Magnesium	ppm	ASTM D5185m	950	841	456	
Zinc         ppm         ASTM D5185m         1180         1268         1266            Sulfur         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414	Calcium	ppm	ASTM D5185m	1050	1270	1743	
Sulfur         ppm         ASTM D5185m         2600         2883         2815            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	Phosphorus	ppm	ASTM D5185m	995	917	973	
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	Zinc	ppm	ASTM D5185m	1180	1268	1266	
Silicon         ppm         ASTM D5185m         >25         9         12            Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	Sulfur	ppm	ASTM D5185m	2600	2883	2815	
Sodium         ppm         ASTM D5185m         5         4            Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         23         37            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	Silicon	ppm	ASTM D5185m	>25	9	12	
INFRA-RED	Sodium	ppm	ASTM D5185m		5	4	
Soot %         %         *ASTM D7844 >4         0.7         0.6            Nitration         Abs/cm         *ASTM D7624 >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415 >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         18.3         20.3	Potassium	ppm	ASTM D5185m	>20	23	37	
Nitration         Abs/cm         *ASTM D7624         >20         10.1         10.8            Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	INFRA-RED		method	limit/base	current	history1	history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         22.7         24.5            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         18.3         20.3	Soot %	%	*ASTM D7844	>4	0.7	0.6	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.3 20.3	Nitration	Abs/cm	*ASTM D7624	>20	10.1	10.8	
Oxidation Abs/.1mm *ASTM D7414 >25 <b>18.3</b> 20.3	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.7	24.5	
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	20.3	



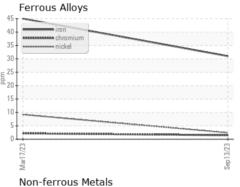
## **OIL ANALYSIS REPORT**

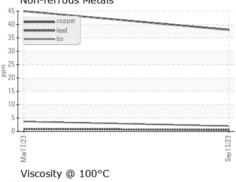


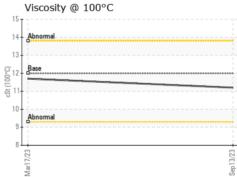
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance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

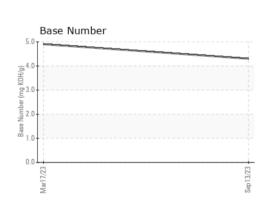
FLUID PROP	ERIIES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	12.00	11.2	11.7	

## **GRAPHS**













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10656339 Test Package : FLEET

: PCA0103242 : 05955126

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

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

: 19 Sep 2023 : 20 Sep 2023 Diagnostician : Wes Davis

NW WHITE & CO - ANDERSON DIVISION

2605 RIVER RD PIEDMONT, SC US 29673 Contact: James Threatt

jthreatt@nwwhite.com T: (864)918-4646

\* - 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)

Report Id: NWWPIE [WUSCAR] 05955126 (Generated: 09/20/2023 18:01:04) Rev: 1

Submitted By: Under NWWDUN - James Threatt