

PROBLEM SUMMARY

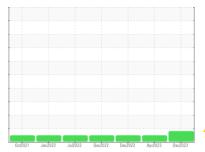
Sample Rating Trend





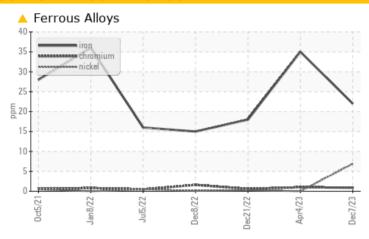
Machine Id **829M** Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (--- GAL)





COMPONENT CONDITION SUMMARY



RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS							
Sample Status				ABNORMAL	NORMAL	NORMAL	
Nickel	ppm	ASTM D5185m	>2	<u>^</u> 7	0	<1	

Customer Id: GFL415 Sample No.: GFL0105653 Lab Number: 06030294 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:

Don Baldridge +1 don.b505@comcast.net

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

04 Apr 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



21 Dec 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



08 Dec 2022 Diag: Wes Davis

NORMAL



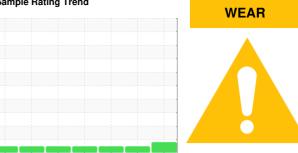
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 829M Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Valve wear is indicated. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

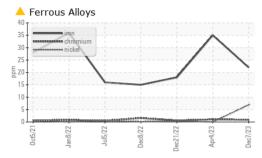
Fluid Condition

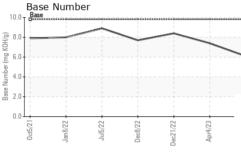
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

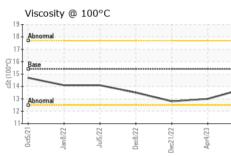
Sample Date	N SHP 15W4U (- GAL)	Oct2021	Jan2022 Jul2022	Dec2022 Dec2022 Apr2023	Dec2023	
Sample Date Client Info 07 Dec 2023 04 Apr 2023 21 Dec 2022 Machine Age hrs Client Info 8924 8042 6879 Oil Age hrs Client Info 8042 8042 0 Oil Changed Client Info Not Changed Changed Changed Changed NORMAL Sample Status Image: Changed ABNORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 8924 8042 6879 Oil Age hrs Client Info 8042 8042 0 Oil Changed Client Info Not Changed	Sample Number		Client Info		GFL0105653	GFL0073909	GFL0064009
Dil Age	Sample Date		Client Info		07 Dec 2023	04 Apr 2023	21 Dec 2022
Contamped Client Info	Machine Age	hrs	Client Info		8924	8042	6879
CONTAMINATION method minit/base current history1 history2	Oil Age	hrs	Client Info		8042	8042	0
CONTAMINATION	Oil Changed		Client Info		Not Changd	Changed	Changed
Fuel	Sample Status				ABNORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 22 35 18 Chromium ppm ASTM D5185m >5 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Blycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >80 22 35 18 Chromium ppm ASTM D5185m >5 <1 1 <1 Nickel ppm ASTM D5185m >2 7 0 <1 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 1 4 2 Lead ppm ASTM D5185m >30 2 0 <1 Lead ppm ASTM D5185m >30 2 0 <1 Lead ppm ASTM D5185m >30 0 0 <1 Capper ppm ASTM D5185m >5 0 0 <1 Capper ppm ASTM D5185m 0 0 0 <1 Za	-uel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >80 22 35 18 Chromium ppm ASTM D5185m >5 <1	Nater		WC Method	>0.2	NEG	NEG	NEG
Pron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Strickel	ron	ppm	ASTM D5185m	>80	22	35	18
Description	Chromium	ppm	ASTM D5185m	>5	<1	1	<1
Salver	Nickel	ppm	ASTM D5185m	>2	<u> </u>	0	<1
Aluminum	Γitanium	ppm	ASTM D5185m		0	0	0
December December	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper	Aluminum	ppm	ASTM D5185m	>30	1	4	2
Tin	_ead	ppm	ASTM D5185m	>30	2	0	<1
Anadium 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 0 2 3 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 946 908 876 Calcium ppm ASTM D5185m 1070 1063 1009 1012 Phosphorus ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 <th< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>>150</td><th>4</th><td><1</td><td>2</td></th<>	Copper	ppm	ASTM D5185m	>150	4	<1	2
ADDITIVES	Γin	ppm	ASTM D5185m	>5	0	0	<1
ADDITIVES	/anadium	ppm	ASTM D5185m		0	0	0
Soron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0	0	0
Description	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 57 56 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 946 908 876 Calcium ppm ASTM D5185m 1070 1063 1009 1012 Phosphorus ppm ASTM D5185m 1150 814 970 922 Zinc ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 0 4 <1 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	0	0	2	3
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 946 908 876 Calcium ppm ASTM D5185m 1070 1063 1009 1012 Phosphorus ppm ASTM D5185m 1150 814 970 922 Zinc ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 0 4 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 946 908 876 Calcium ppm ASTM D5185m 1070 1063 1009 1012 Phosphorus ppm ASTM D5185m 1150 814 970 922 Zinc ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 0 4 <1	Molybdenum	ppm	ASTM D5185m	60	58	57	56
Calcium ppm ASTM D5185m 1070 1063 1009 1012 Phosphorus ppm ASTM D5185m 1150 814 970 922 Zinc ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 0 4 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 814 970 922 Zinc ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 0 4 <1	Magnesium	ppm	ASTM D5185m	1010	946	908	876
Zinc ppm ASTM D5185m 1270 1223 1186 1155 Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m >20 0 4 <1	Calcium	ppm	ASTM D5185m	1070	1063	1009	1012
Sulfur ppm ASTM D5185m 2060 2639 3455 3159 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m 4 3 3 Potassium ppm ASTM D5185m >20 0 4 <1	Phosphorus	ppm	ASTM D5185m	1150	814	970	922
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 4 2 Sodium ppm ASTM D5185m 4 3 3 Potassium ppm ASTM D5185m >20 0 4 <1	Zinc	ppm	ASTM D5185m	1270	1223	1186	1155
Solition ppm ASTM D5185m >20 4 4 2	Sulfur	ppm	ASTM D5185m	2060	2639	3455	3159
Sodium ppm ASTM D5185m 4 3 3 Potassium ppm ASTM D5185m >20 0 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 1.8 1.2 Nitration Abs/cm *ASTM D7624 >20 9.4 12.1 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 4 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 1.8 1.2 Nitration Abs/cm *ASTM D7624 >20 9.4 12.1 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	Silicon	ppm	ASTM D5185m	>20	4	4	2
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 1.8 1.2 Nitration Abs/cm *ASTM D7624 >20 9.4 12.1 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	Sodium	ppm	ASTM D5185m		4	3	3
Soot % % *ASTM D7844 >3 1.2 1.8 1.2 Nitration Abs/cm *ASTM D7624 >20 9.4 12.1 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	Potassium	ppm	ASTM D5185m	>20	0	4	<1
Nitration Abs/cm *ASTM D7624 >20 9.4 12.1 10.9 Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	Soot %	%	*ASTM D7844	>3	1.2	1.8	1.2
Sulfation Abs/.1mm *ASTM D7415 >30 21.9 22.6 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2	Vitration	Abs/cm	*ASTM D7624	>20	9.4	12.1	10.9
Oxidation Abs/.1mm *ASTM D7414 >25 18.2 18.8 17.2							
	FLUID DEGRAI	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.2	18.8	17.2
	Base Number (BN)	mg KOH/g			6.1	7.4	8.4



OIL ANALYSIS REPORT



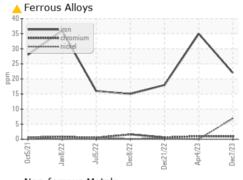


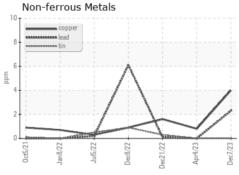


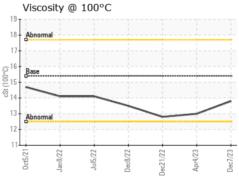
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

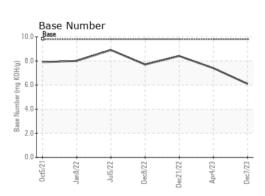
FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.0	12.8

GRAPHS













Certificate L2367

Laboratory

Sample No. Lab Number **Unique Number** Test Package : FLEET

: GFL0105653 : 06030294

: 10780085

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 11 Dec 2023 Diagnosed : 13 Dec 2023

Diagnostician : Don Baldridge

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)

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Submitted By: Frank Wolak