

## **OIL ANALYSIS REPORT**

Sample Rating Trend



4692M Component Diesel Engine Fluid

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

SAMPLE INFORMATION method

### DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

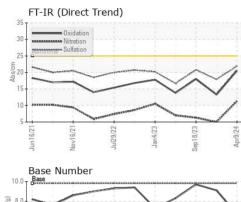
#### Fluid Condition

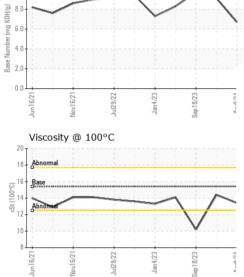
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

				current	nistory i	
Sample Number		Client Info		GFL0116886	GFL0107706	GFL0091467
Sample Date		Client Info		09 Apr 2024	05 Feb 2024	18 Sep 2023
Machine Age	hrs	Client Info		12824	11995	11748
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	ATTENTION
		ine ette e et			Internet	la i ata muQ
CONTAMINAT		method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	0.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	21	8	23
Chromium	ppm	ASTM D5185m	>5	<1	<1	2
Nickel	ppm		>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	3	<1	1
Lead	ppm	ASTM D5185m	>30	<1	<1	0
Copper	ppm	ASTM D5185m	>150	<1	<1	3
Tin	ppm		>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
	1-1-			-		
ADDITIVES		method			historv1	history2
ADDITIVES	nnm		limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	6	2	48
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	6 0	2 0	48 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 0 61	2 0 66	48 0 32
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 0 61 <1	2 0 66 <1	48 0 32 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 61 <1 946	2 0 66 <1 1049	48 0 32 <1 427
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 0 61 <1 946 1101	2 0 66 <1 1049 1131	48 0 32 <1 427 1589
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	6 0 61 <1 946 1101 1022	2 0 66 <1 1049 1131 1059	48 0 32 <1 427 1589 848
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	6 0 61 <1 946 1101 1022 1253	2 0 66 <1 1049 1131 1059 1342	48 0 32 <1 427 1589 848 1041
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	6 0 61 <1 946 1101 1022 1253 3330	2 0 66 <1 1049 1131 1059 1342 3236	48 0 32 <1 427 1589 848 1041 3334
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	6 0 61 <1 946 1101 1022 1253 3330 current	2 0 66 <1 1049 1131 1059 1342 3236 history1	48 0 32 <1 427 1589 848 1041 3334 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 0 1010 1070 1150 1270 2060	6 0 61 <1 946 1101 1022 1253 3330 current 4	2 0 66 <1 1049 1131 1059 1342 3236 history1 5	48 0 32 <1 427 1589 848 1041 3334 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 kimit/base >20	6 0 61 <1 946 1101 1022 1253 3330 current 4 8	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12	48 0 32 <1 427 1589 848 1041 3334 history2 9 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >20	6 0 61 <1 946 1101 1022 1253 3330 current 4	2 0 66 <1 1049 1131 1059 1342 3236 history1 5	48 0 32 <1 427 1589 848 1041 3334 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 kimit/base >20	6 0 61 <1 946 1101 1022 1253 3330 current 4 8	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12	48 0 32 <1 427 1589 848 1041 3334 history2 9 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b> >20	6 0 61 <1 946 1101 1022 1253 3330 current 4 8 16	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12 1 1 1 history1 0.1	48 0 32 <1 427 1589 848 1041 3334 history2 9 9 9 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 220 220	6 0 61 <1 946 1101 1022 1253 3330 current 4 8 16 current	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12 1 1 history1	48 0 32 <1 427 1589 848 1041 3334 <b>history2</b> 9 9 9 6 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >20 20 20	6 0 61 <1 946 1101 1022 1253 3330 current 4 8 16 16 current 0.6	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12 1 1 1 history1 0.1	48 0 32 <1 427 1589 848 1041 3334 history2 9 9 9 6 6 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	6 0 61 <1 946 1101 1022 1253 3330 current 4 8 16 current 0.6 11.3	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12 1 1 history1 0.1 5.0	48 0 32 <1 427 1589 848 1041 3334 history2 9 9 9 9 6 <i>history2</i> 0.1 6.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >20 <b>imit/base</b> >3 >20 >3	6 0 61 <1 946 1101 1022 1253 3330 current 4 8 16 current 0.6 11.3 21.9 current	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12 1 5 12 1 1 0.1 5.0 17.9 history1	48 0 32 <1 427 1589 848 1041 3334 history2 9 9 9 6 history2 0.1 6.3 20.8 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	6 0 61 <1 946 1101 1022 1253 3330 current 4 8 16 current 0.6 11.3 21.9	2 0 66 <1 1049 1131 1059 1342 3236 history1 5 12 1 1 <u>history1</u> 0.1 5.0 17.9	48 0 32 <1 427 1589 848 1041 3334 <b>history2</b> 9 9 9 9 6 <b>history2</b> 0.1 6.3 20.8

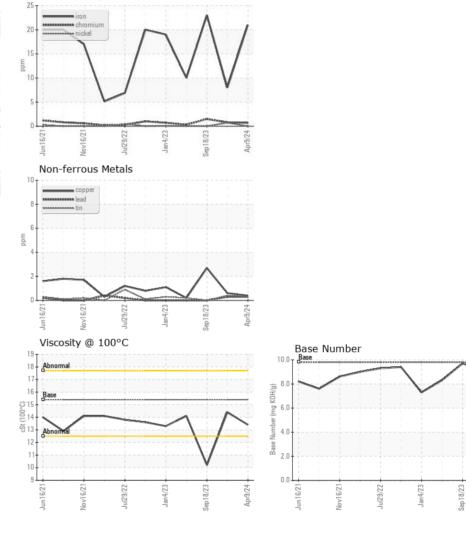


## **OIL ANALYSIS REPORT**





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	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	14.4	0.2
GRAPHS						
Ferrous Alloys						



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 465 - Pontiac Sample No. : GFL0116886 Received : 16 Apr 2024 888 Baldwin Lab Number : 06150976 Tested : 17 Apr 2024 Pontiac, MI US 48340 Unique Number : 10981054 Diagnosed : 17 Apr 2024 - Wes Davis Test Package : FLEET Contact: Ricky Matthews Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. rickymathews@gflenv.com T: (586)825-9514 \* - 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) F:

Apr9/24