

OIL ANALYSIS REPORT

Sample Rating Trend







429030-402476

Component **Diesel Engine**

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

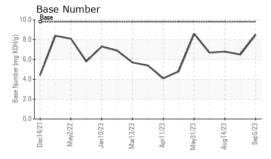
Fluid Condition

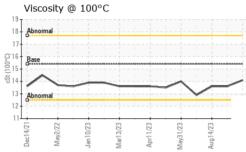
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0091004	GFL0082698	GFL0090995
Sample Date		Client Info		05 Sep 2023	17 Aug 2023	14 Aug 2023
Machine Age	hrs	Client Info		1312	11175	11133
Oil Age	hrs	Client Info		0	427	385
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	3	16	14
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	<1	7	6
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	0	1	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	nnm	ASTM D5185m		0	0	0
Caumum	ppm	ASTIVI DSTOSIII		U	U	U
ADDITIVES	ррпі	method	limit/base	current	history1	history2
	ррт		limit/base			
ADDITIVES		method		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 2	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m ASTM D5185m	0	current 2 0	history1 4 0	history2 4 0
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 60	history1 4 0 77	history2 4 0 73
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 0 60 <1	history1 4 0 77 <1	history2 4 0 73
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 0 60 <1 948	history1 4 0 77 <1 973	history2 4 0 73 1 901
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070	current 2 0 60 <1 948 1022	history1 4 0 77 <1 973 1092	history2 4 0 73 1 901 1053
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current 2 0 60 <1 948 1022 1020	history1 4 0 77 <1 973 1092 999	history2 4 0 73 1 901 1053 934
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 60 <1 948 1022 1020 1224 3599 current	history1 4 0 77 <1 973 1092 999 1230 3325 history1	history2 4 0 73 1 901 1053 934 1167 3239 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 60 <1 948 1022 1020 1224 3599 current 3	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7	history2 4 0 73 1 901 1053 934 1167 3239 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 0 60 <1 948 1022 1020 1224 3599 current 3	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7	history2 4 0 73 1 901 1053 934 1167 3239 history2 6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2 1	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5 15	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5 15
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2 1 current	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5 15 history1	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5 15 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2 1 current 0.1	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5 15 history1 0.4	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5 15 history2 0.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m method ASTM D5185m	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2 1 current 0.1 5.5	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5 15 history1 0.4 8.0	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5 15 history2 0.3 7.9
ADDITIVES 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 ppm ppm ppm	method ASTM D5185m method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	current 2 0 60 <1 948 1022 1020 1224 3599 current 3 2 1 current 0.1 5.5 17.9	history1 4 0 77 <1 973 1092 999 1230 3325 history1 7 5 15 history1 0.4 8.0 19.4	history2 4 0 73 1 901 1053 934 1167 3239 history2 6 5 15 history2 0.3 7.9 19.2



OIL ANALYSIS REPORT

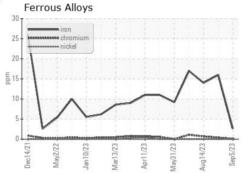


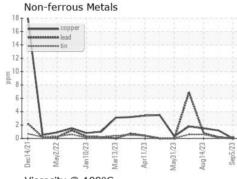


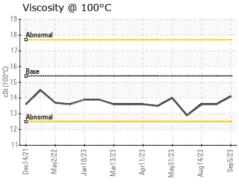
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

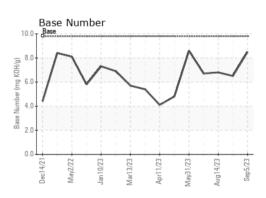
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.6	13.6

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10643729 Test Package : FLEET

: GFL0091004 : 05947770

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 12 Sep 2023 Diagnosed : 13 Sep 2023 Diagnostician : Wes Davis

GFL Environmental - 814 - Little Rock Hauling 4005 Hwy 161 N.

Little Rock, AR US 72117 Contact: Brad Manager

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)

T:

F: