

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

914032

Component Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

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.

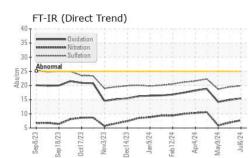
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0128564	GFL0123020	GFL0119372
Sample Date		Client Info		06 Jul 2024	04 Jun 2024	09 May 2024
Machine Age	hrs	Client Info		2289	17887	1976
Oil Age	hrs	Client Info		17887	15911	161
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
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	>100	16	12	10
Chromium	ppm	ASTM D5185m		<1	<1	<1
Nickel	ppm	ASTM D5185m		2	2	2
Titanium	ppm	ASTM D5185m	- T	<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	2	2
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m		41	25	19
Tin	ppm	ASTM D5185m	>15	0	<1	1
Vanadium	ppm	ASTM D5185m	210	0	<1	<1
Cadmium						
				0		
	ppm	ASTM D5185m		0	0	<1
ADDITIVES	ppili	method	limit/base	current	history1	history2
	ppm		0	current 2	history1 2	history2 4
ADDITIVES Boron Barium		method	0	current 2 0	history1 2 0	history2 4 0
ADDITIVES Boron	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 2 0 58	history1 2 0 61	history2 4 0 57
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 2 0	history1 2 0 61 <1	history2 4 0 57 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 2 0 58 <1 1024	history1 2 0 61 <1 1042	history2 4 0 57 <1 927
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 2 0 58 <1 1024 1159	history1 2 0 61 <1 1042 1137	history2 4 0 57 <1 927 1065
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 2 0 58 <1 1024 1159 998	history1 2 0 61 <1 1042 1137 1055	history2 4 0 57 <1 927 1065 1025
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 2 0 58 <1 1024 1159	history1 2 0 61 <1 1042 1137 1055 1301	history2 4 0 57 <1 927 1065 1025 1206
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	current 2 0 58 <1 1024 1159 998	history1 2 0 61 <1 1042 1137 1055	history2 4 0 57 <1 927 1065 1025
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 58 <1 1024 1159 998 1260 3224 current	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1	history2 4 0 57 <1 927 1065 1025 1206 3541 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 2 0 58 <1 1024 1159 998 1260 3224 current 7	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6	history2 4 0 57 <1 927 1065 1025 1206 3541 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 imit/base >25	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7
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 0 1010 1070 1150 1270 2060 2060 225 >25	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6 current	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4 history1	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7 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 TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6 current 0.5	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4 history1 0.4	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7 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 TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6 current 0.5 7.7	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4 history1 0.4 6.9	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7 history2 0.3 5.9
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 TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6 current 0.5	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4 history1 0.4	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7 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	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6 current 0.5 7.7	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4 history1 0.4 6.9	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7 history2 0.3 5.9
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 ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 3 20 3 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	current 2 0 58 <1 1024 1159 998 1260 3224 current 7 4 6 current 0.5 7.7 19.9	history1 2 0 61 <1 1042 1137 1055 1301 3484 history1 6 3 4 history1 0.4 6.9 19.5	history2 4 0 57 <1 927 1065 1025 1206 3541 history2 6 <1 7 history2 0.3 5.9 18.7

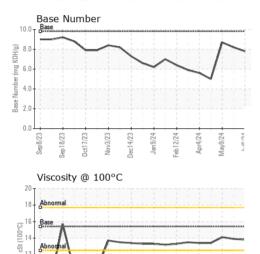


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Sep 18/23

OIL ANALYSIS REPORT





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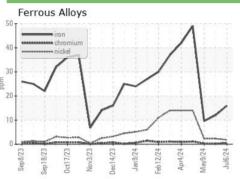
Anr4/24

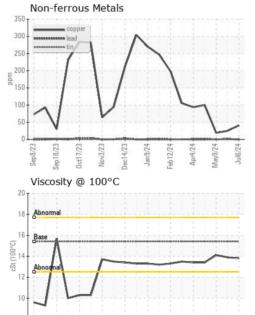
Jan 9/24

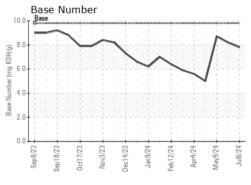
Vov3/23 Dec14/23 Mav9/24

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 PROPEI	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.9	14.1

GRAPHS







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 814 - Little Rock Hauling Sample No. : GFL0128564 Received : 11 Jul 2024 4005 Hwy 161 N. Lab Number : 06234343 Tested : 12 Jul 2024 LIttle Rock, AR Unique Number : 11123177 Diagnosed : 12 Jul 2024 - Wes Davis US 72117 Contact: Brad Koenig Test Package : FLEET Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bkoenig@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

Dec14/23 Jan9/24

Inv2/73

Feb12/24

/lav9/24 Jul6/24

Apr4/24

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Sep8/23.

Sep 18/23

Report Id: GFL814 [WUSCAR] 06234343 (Generated: 07/12/2024 17:45:56) Rev: 1

Submitted By: Nicole Walls Page 2 of 2