

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id **377M** 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

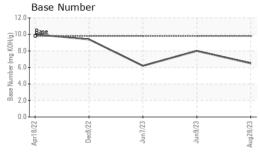
Fluid Condition

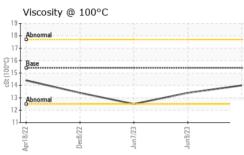
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

0.44545						
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0092744	GFL0080784	GFL0080793
Sample Date		Client Info		28 Aug 2023	09 Jun 2023	07 Jun 2023
Machine Age	hrs	Client Info		11968	11968	11951
Oil Age	hrs	Client Info		11968	600	0
Oil Changed		Client Info		Not Changd	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	36	2	47
Chromium	ppm	ASTM D5185m	>20	1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	8	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	8	<1	4
Lead	ppm	ASTM D5185m	>40	3	0	0
Copper	ppm	ASTM D5185m	>330	1	<1	3
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	nnm	ASTM D5185m	0	5	269	3
DOIOII	ppiii	AO HVI DO FOOIII				
Barium	ppm	ASTM D5185m	0	0	0	0
Barium	• •		0	0 73	0 83	0 66
	ppm	ASTM D5185m				
Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	60	73	83	66
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	60	73 <1	83 <1	66 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010	73 <1 1070	83 <1 764	66 <1 1047
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070	73 <1 1070 1188	83 <1 764 1840	66 <1 1047 1218
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150	73 <1 1070 1188 1020	83 <1 764 1840 810	66 <1 1047 1218 1067
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270	73 <1 1070 1188 1020 1321	83 <1 764 1840 810 997	66 <1 1047 1218 1067 1436
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 ASTM D5185m	60 0 1010 1070 1150 1270 2060	73 <1 1070 1188 1020 1321 3185	83 <1 764 1840 810 997 3890	66 <1 1047 1218 1067 1436 4066
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	60 0 1010 1070 1150 1270 2060	73 <1 1070 1188 1020 1321 3185 current	83 <1 764 1840 810 997 3890 history1	66 <1 1047 1218 1067 1436 4066 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base	73 <1 1070 1188 1020 1321 3185 current 16	83 <1 764 1840 810 997 3890 history1	66 <1 1047 1218 1067 1436 4066 history2 6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base	73 <1 1070 1188 1020 1321 3185 current 16 7	83 <1 764 1840 810 997 3890 history1 4	66 <1 1047 1218 1067 1436 4066 history2 6 1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20	73 <1 1070 1188 1020 1321 3185 current 16 7 <1	83 <1 764 1840 810 997 3890 history1 4 1	66 <1 1047 1218 1067 1436 4066 history2 6 1 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	73 <1 1070 1188 1020 1321 3185 current 16 7 <1 current 0.7	83 <1 764 1840 810 997 3890 history1 4 1 1 0.2	66 <1 1047 1218 1067 1436 4066 history2 6 1 5 history2 0.5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m method ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	73 <1 1070 1188 1020 1321 3185 current 16 7 <1	83 <1 764 1840 810 997 3890 history1 4 1 1 history1	66 <1 1047 1218 1067 1436 4066 history2 6 1 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method ASTM D5185m	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	73 <1 1070 1188 1020 1321 3185 current 16 7 <1 current 0.7 9.2	83 <1 764 1840 810 997 3890 history1 4 1 1 0.2 5.6	66 <1 1047 1218 1067 1436 4066 history2 6 1 5 history2 0.5 8.4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method *ASTM D7844 *ASTM D7624 *ASTM D7415 Method	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	73 <1 1070 1188 1020 1321 3185 current 16 7 <1 current 0.7 9.2 20.7 current	83 <1 764 1840 810 997 3890 history1 4 1 1 history1 0.2 5.6 18.8 history1	66 <1 1047 1218 1067 1436 4066 history2 6 1 5 history2 0.5 8.4 21.0 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30 limit/base	73 <1 1070 1188 1020 1321 3185 current 16 7 <1 current 0.7 9.2 20.7	83 <1 764 1840 810 997 3890 history1 4 1 1 0.2 5.6 18.8	66 <1 1047 1218 1067 1436 4066 history2 6 1 5 history2 0.5 8.4 21.0



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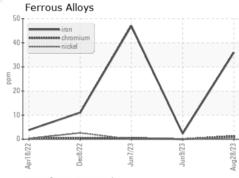


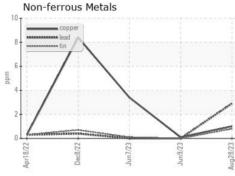


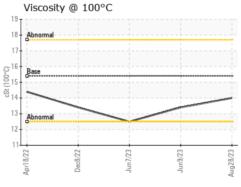
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

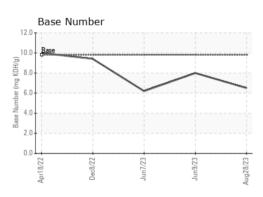
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.4	12.5

GRAPHS













Laboratory Sample No. Lab Number

Unique Number : 10631174

: GFL0092744 : 05940562

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 01 Sep 2023 Diagnosed : 01 Sep 2023 Diagnostician : Wes Davis

GFL Environmental - 455 - Flint 2051 W. Bristol Rd Flint Township, MI

US 48507 Contact: MARK WOMBLE mwomble@gflenv.com

T: (586)825-9514

Test Package : FLEET Certificate L2367 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)