

OIL ANALYSIS REPORT

Sample Rating Trend

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GLYCOL

Machine Id 829013-1086

Diesel Engine Fluid

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

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

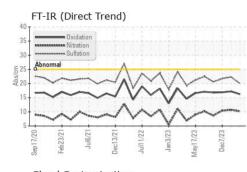
Fluid Condition

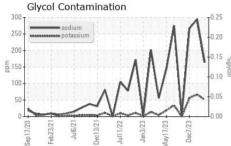
The BN result indicates that there is suitable alkalinity remaining in the oil.

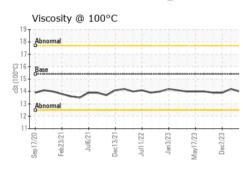
SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0070944	GFL0100158	GFL0100170
Sample Date		Client Info		04 Apr 2024	03 Jan 2024	07 Dec 2023
Machine Age	hrs	Client Info		10619	10226	10104
Oil Age	hrs	Client Info		162	578	156
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	23	12	9
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	2
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	20	5	5
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	4	0
				<1	<1	0
ADDITIVES		method	limit/base	current	<1 history1	history2
ADDITIVES Boron	ppm		limit/base			
		method	0	current	history1	history2
Boron	ppm	method ASTM D5185m	0	current 3	history1 5	<mark>history2</mark> 6
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 3 0	history1 5 0	history2 6 0
Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 3 0 77	history1 5 0 80	history2 6 0 72
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 3 0 77 1	history1 5 0 80 <1	history2 6 0 72 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 3 0 77 1 976	history1 5 0 80 <1 961	history2 6 0 72 <1 903
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	0 0 60 0 1010 1070	current 3 0 77 1 976 1091	history1 5 0 80 <1 961 1092	history2 6 0 72 <1 903 1016
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	0 0 60 0 1010 1070 1150	current 3 0 77 1 976 1091 981	history1 5 0 80 <1 961 1092 988	history2 6 0 72 <1 903 1016 951
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 3 0 77 1 976 1091 981 1222	history1 5 0 80 <1 961 1092 988 1287	history2 6 0 72 <1 903 1016 951 1238
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 3 0 77 1 976 1091 981 1222 2856	history1 5 0 80 <1 961 1092 988 1287 3100	history2 6 0 72 <1 903 1016 951 1238 2968
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 3 0 77 1 976 1091 981 1222 2856 current	history 1 5 0 80 <1	history2 6 0 72 <1
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 1010 1070 1150 1270 2060	current 3 0 77 1 976 1091 981 1222 2856 current 10	history 1 5 0 80 <1	history2 6 0 72 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Iimit/base >25	Current 3 0 77 1 976 1091 981 1222 2856 current 10 40 10 10 10 164	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Iimit/base >25	Current 3 0 77 1 976 1091 981 1222 2856 current 10 164 > 51	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267 ▲ 56
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25 >20	Current 3 0 77 1 976 1091 981 1222 2856 current 10 ▲ 164 ▲ 51 NEG	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267 ▲ 56 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 3 0 77 1 976 1091 981 1222 2856 current 10 ▲ 164 ▲ 51 NEG current	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267 ▲ 56 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	Current 3 0 77 1 976 1091 981 1222 2856 current 10 1252 2856 current 10 ▲ 51 NEG current 0.5	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267 ▲ 56 NEG bistory2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium Glycol 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 Imit/base >25 >20 Imit/base >20	Current 3 0 77 1 976 1091 981 1222 2856 current 10 164 51 NEG current 0.5 10.2	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267 ▲ 56 NEG history2 0.5 10.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium Glycol 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 Iimit/base >25 >20 Iimit/base >20 S	Current 3 0 77 1 976 1091 981 1222 2856 current 10 ▲ 51 NEG current 0.5 10.2 20.0	history1 5 0 80 <1	history2 6 0 72 <1 903 1016 951 1238 2968 history2 10 ▲ 267 ▲ 56 NEG NEG 0.5 10.4 21.7

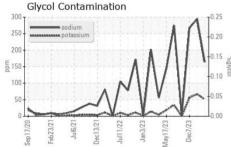


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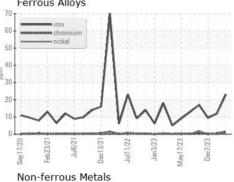


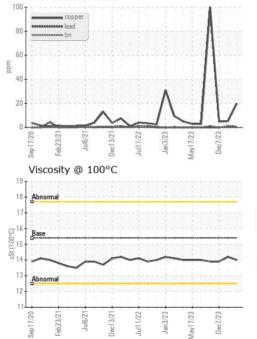


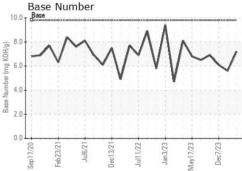


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.2	13.9
GRAPHS						

Ferrous Alloys







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 657 - Charlottesville Hauling Sample No. : GFL0070944 Received : 08 Apr 2024 5498 Richmond Road Lab Number : 06140880 Tested : 10 Apr 2024 Troy, VA Unique Number : 10965688 Diagnosed : 10 Apr 2024 - Sean Felton US 22974 Test Package : FLEET (Additional Tests: Glycol) Contact: Brian Ulickas Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. bulickas@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL657 [WUSCAR] 06140880 (Generated: 04/10/2024 09:38:28) Rev: 1

Submitted By: TECHNICIAN ACCOUNT

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