

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 913181 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

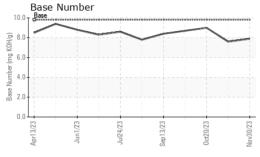
Fluid Condition

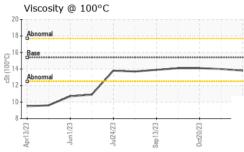
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0098982	GFL0099040	GFL0099045
Sample Date		Client Info		30 Nov 2023	06 Nov 2023	20 Oct 2023
Machine Age	hrs	Client Info		1573	1377	1311
Oil Age	hrs	Client Info		1311	1311	1225
Oil Changed		Client Info		N/A	N/A	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
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	>120	17	21	4
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	3	<1	1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	1	3	<1
Tin	ppm	ASTM D5185m	>15	- <1	0	0
Vanadium	ppm	ASTM D5185m	710	0	0	0
Cadmium		ASTM D5185m				<1
				U	()	
	ppm		limit/base	current	0 history1	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 0	history1	history2 <1
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 0 5	history1 0 <1	history2 <1 3
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 0 5 59	history1 0 <1 61	history2 <1 3 60
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 0 5 59 0	history1 0 <1 61 <1	history2 <1 3 60 0
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 0 5 59 0 872	history1 0 <1 61 <1 920	history2 <1 3 60 0 890
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070	current 0 5 59 0 872 1062	history1 0 <1 61 <1 920 1049	history2 <1 3 60 0 890 1088
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150	current 0 5 59 0 872 1062 978	history1 0 <1 61 <1 920 1049 963	history2 <1 3 60 0 890 1088 991
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 0 5 59 0 872 1062 978 1134	history1 0 <1 61 <1 920 1049 963 1198	history2 <1 3 60 0 890 1088 991 1217
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 0 5 59 0 872 1062 978 1134 3049	history1 0 <1 61 <1 920 1049 963 1198 2938	history2 <1 3 60 0 890 1088 991 1217 3527
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 0 5 59 0 872 1062 978 1134 3049 current	history1 0 <1 61 <1 920 1049 963 1198 2938 history1	history2 <1 3 60 0 890 1088 991 1217 3527 history2
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	current 0 5 59 0 872 1062 978 1134 3049 current	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3
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 0 5 59 0 872 1062 978 1134 3049 current 4	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0
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 0 5 59 0 872 1062 978 1134 3049 current 4 0 4	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2
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 method	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 0 5 59 0 872 1062 978 1134 3049 current 4 0 4	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6 history1	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2
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 0 5 59 0 872 1062 978 1134 3049 current 4 0 4 current	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6 history1 0.5	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2 history2
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 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 0 5 59 0 872 1062 978 1134 3049 current 4 0 4 current 0.6 7.5	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6 history1 0.5 8.7	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2 history2 0.2 5.0
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 0 5 59 0 872 1062 978 1134 3049 current 4 0 4 current	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6 history1 0.5	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2 history2
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 1150 1270 2060 limit/base >25 >20 limit/base	current 0 5 59 0 872 1062 978 1134 3049 current 4 0 4 current 0.6 7.5	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6 history1 0.5 8.7	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2 history2 0.2 5.0
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 D5185m *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >4 >20 >30	current 0 5 59 0 872 1062 978 1134 3049 current 4 0 4 current 0.6 7.5 19.2	history1 0 <1 61 <1 920 1049 963 1198 2938 history1 6 <1 6 history1 0.5 8.7 20.5	history2 <1 3 60 0 890 1088 991 1217 3527 history2 3 0 2 history2 0.2 5.0 17.7



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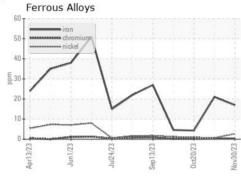


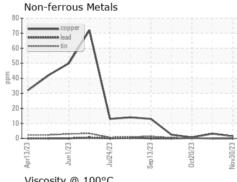


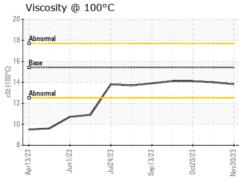
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

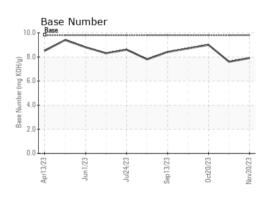
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	14.0	14.1	

GRAPHS













Certificate L2367

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

: GFL0098982 : 06028425 : 10778216

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 07 Dec 2023 Diagnosed : 09 Dec 2023

Diagnostician : Wes Davis

GFL Environmental - 084 - Clarksville

699 Jack Miller Boulevard Clarksville, TN US 37042

Contact: ROBERT THIBAULT

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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)

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