

OIL ANALYSIS REPORT

Sample Rating Trend



Area (99292V) Machine To 821039-101122 Component Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (9 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.

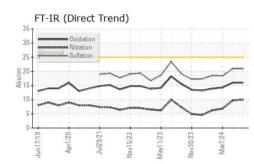
Fluid Condition

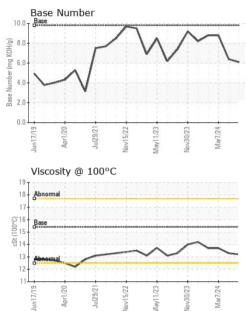
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0101836	GFL0101812	GFL0093577
Sample Date		Client Info		21 May 2024	12 Apr 2024	07 Mar 2024
Machine Age	hrs	Client Info		24157	23904	23595
Oil Age	hrs	Client Info		819	566	257
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
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	20	19	9
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	2	2	2
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	۰ <1	0	0
Aluminum	ppm	ASTM D5185m	>20	8	9	8
Lead	ppm	ASTM D5185m	>40	ہ <1	<1	0
	ppm	ASTM D5185m	>330	14	11	6
Copper Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m	>15	۰ <1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
Caumum						
	le le			Ū	-	-
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	method ASTM D5185m	0	current 0	history1 <1	history2 3
Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0	current 0 0	history1 <1 <1	history2 3 0
Boron Barium Molybdenum	ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 0 0 61	history1 <1 <1 56	history2 3 0 56
Boron Barium Molybdenum Manganese	ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 0 0 61 <1	history1 <1 <1 56 <1	history2 3 0 56 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	Current 0 0 61 <1 979	history1 <1 <1 56 <1 862	history2 3 0 56 <1 912
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 0 0 61 <1 979 1145	history1 <1 <1 56 <1 862 1034	history2 3 0 56 <1 912 977
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	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 0 0 61 <1 979 1145 1007	history1 <1 <1 56 <1 862 1034 1007	history2 3 0 56 <1 912 977 1015
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 0 0 61 <1 979 1145 1007 1308	history1 <1 <1 56 <1 862 1034 1007 1162	history2 3 0 56 <1 912 977 1015 1226
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	Current 0 0 61 <1 979 1145 1007 1308 3503	history1 <1 <1 56 <1 862 1034 1007 1162 2975	history2 3 0 56 <1 912 977 1015 1226 3060
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 0 0 61 <1 979 1145 1007 1308 3503 current	history1 <1 <1 56 <1 862 1034 1007 1162 2975 history1	history2 3 0 56 <1 912 977 1015 1226 3060 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	current 0 0 61 <1 979 1145 1007 1308 3503 current 5	history1 <1 <1 56 <1 862 1034 1007 1162 2975 history1 11	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5	history1 <1 <1 56 <1 862 1034 1007 1162 2975 history1 11 4	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5
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	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5 1	history1 <1 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	current 0 61 <1 979 1145 1007 1308 3503 current 5 5 1 current	history1 <1 56 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2 history1	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3 history2 history2
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	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5 1 current 1	history1 <1 56 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2 history1 1.3	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3 history2 6 5 3 history2 0.6
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5 1 current 1.4 10.0	history1 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2 history1 11 4 2 history1 1.3 9.7	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3 history2 6 5 3 history2 0.6 6.8
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	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5 1 current 1	history1 <1 56 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2 history1 1.3	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3 history2 6 5 3 history2 0.6
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 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5 1 current 1.4 10.0	history1 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2 history1 11 4 2 history1 1.3 9.7	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3 history2 6 5 3 history2 0.6 6.8
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 25 20 20 limit/base >20 limit/base >20	current 0 0 61 <1 979 1145 1007 1308 3503 current 5 5 1 current 1.4 10.0 20.9	history1 <1 56 <1 56 <1 862 1034 1007 1162 2975 history1 11 4 2 history1 1.3 9.7 20.9	history2 3 0 56 <1 912 977 1015 1226 3060 history2 6 5 3 history2 0.6 6.8 18.4



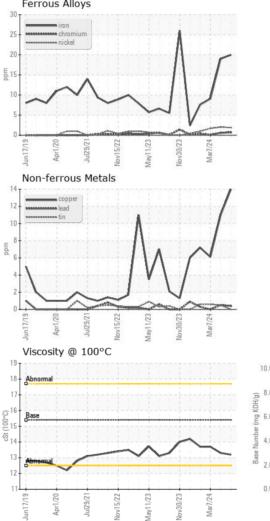
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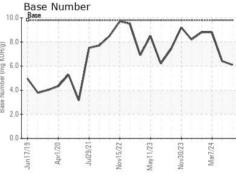




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.2	13.3	13.7
GRAPHS						

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 894 - Ada Hauling Sample No. : GFL0101836 Received : 22 May 2024 1904 North Broadway, Suite D Lab Number : 06187510 Tested : 23 May 2024 Ada, OK US 74820 Unique Number : 11044262 Diagnosed : 23 May 2024 - Wes Davis Test Package : FLEET Contact: Johnny Spurlock Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jspurlock@gflenv.com T: (405)664-4476 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F:

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

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Submitted By: Johnny Spurlock

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