

OIL ANALYSIS REPORT

Sample Rating Trend



Component Diesel Engine PETRO CANADA DURON SHP 15W40 (8 GAL)

SAMPLE INFORMATION method

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Area (GCR164) Machine Id

413109

Wear

Ø 4

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

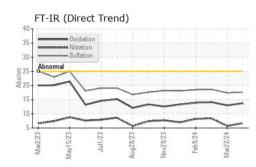
Fluid Condition

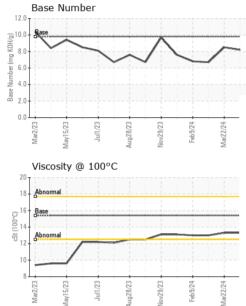
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		methou	iiiiii/base	Current	nistory i	TIIStoryz
Sample Number		Client Info		GFL0115740	GFL0115761	GFL0112342
Sample Date		Client Info		05 Apr 2024	22 Mar 2024	29 Feb 2024
Machine Age	hrs	Client Info		2573	2454	2300
Oil Age	hrs	Client Info		273	154	538
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
		ام و وال و ور			Internet	histow.0
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	7	4	18
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	0	2
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m		3	2	9
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	2	1	5
Tin	ppm		>15	_ <1	0	1
Vanadium	ppm	ASTM D5185m	210	<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	0	<1
	ppm		1			history2
ADDITIVES		method	limit/base	current	history1	
Boron	ppm	ASTM D5185m	0	13	11	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	13 0	11 0	5 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	13 0 62	11 0 61	5 0 64
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	13 0 62 <1	11 0 61 <1	5 0 64 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	13 0 62 <1 881	11 0 61 <1 926	5 0 64 1 879
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	13 0 62 <1 881 1087	11 0 61 <1 926 1112	5 0 64 1 879 1015
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	13 0 62 <1 881 1087 986	11 0 61 <1 926 1112 1027	5 0 64 1 879 1015 1060
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	13 0 62 <1 881 1087 986 1190	11 0 61 <1 926 1112 1027 1172	5 0 64 1 879 1015 1060 1222
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	13 0 62 <1 881 1087 986	11 0 61 <1 926 1112 1027	5 0 64 1 879 1015 1060
Boron 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	0 0 60 0 1010 1070 1150 1270	13 0 62 <1 881 1087 986 1190	11 0 61 <1 926 1112 1027 1172	5 0 64 1 879 1015 1060 1222
Boron 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	0 0 60 1010 1070 1150 1270 2060	13 0 62 <1 881 1087 986 1190 3070	11 0 61 <1 926 1112 1027 1172 3575 history1	5 0 64 1 879 1015 1060 1222 2943
Boron 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	0 0 60 0 1010 1070 1150 1270 2060	13 0 62 <1 881 1087 986 1190 3070 current	11 0 61 <1 926 1112 1027 1172 3575	5 0 64 1 879 1015 1060 1222 2943 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	13 0 62 <1 881 1087 986 1190 3070 current 4	11 0 61 <1 926 1112 1027 1172 3575 history1 2	5 0 64 1 879 1015 1060 1222 2943 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	13 0 62 <1 881 1087 986 1190 3070 <u>current</u> 4 1	11 0 61 <1 926 1112 1027 1172 3575 history1 2 <1	5 0 64 1 879 1015 1060 1222 2943 history2 6 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	13 0 62 <1 881 1087 986 1190 3070 current 4 1 6 current	11 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 3 history1	5 0 64 1 879 1015 1060 1222 2943 history2 6 2 25 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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >20	13 0 62 <1 881 1087 986 1190 3070 current 4 1 6 current 0.2	111 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 history1 0.1	5 0 64 1 879 1015 1060 1222 2943 history2 6 2 25 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	13 0 62 <1 881 1087 986 1190 3070 current 4 1 6 current 0.2 6.7	111 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 history1 0.1 5.7	5 0 64 1 879 1015 1060 1222 2943 history2 6 2 25 history2 0.3 8.4
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 25 20 220 20 20 20 20 20 20 20 20 20 20 20	13 0 62 <1 881 1087 986 1190 3070 current 4 1 6 current 0.2 6.7 17.6	111 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 history1 0.1 5.7 17.4	5 0 64 1 879 1015 1060 1222 2943 history2 6 2 25 history2 0.3 8.4 18.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 imit/base >20	13 0 62 <1 881 1087 986 1190 3070 current 4 1 6 current 0.2 6.7	111 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 history1 0.1 5.7	5 0 64 1 879 1015 1060 1222 2943 history2 6 2 25 history2 0.3 8.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	13 0 62 <1 881 1087 986 1190 3070 <u>current</u> 4 1 6 <u>current</u> 0.2 6.7 17.6 <u>current</u> 13.7	111 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 history1 0.1 5.7 17.4 history1 13.0	5 0 64 1 879 1015 1060 1222 2943 history2 6 225 history2 0.3 8.4 18.6 history2 14.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	13 0 62 <1 881 1087 986 1190 3070 current 4 1 6 current 0.2 6.7 17.6	111 0 61 <1 926 1112 1027 1172 3575 history1 2 <1 3 history1 0.1 5.7 17.4 history1	5 0 64 1 879 1015 1060 1222 2943 history2 6 225 history2 0.3 8.4 18.6 history2



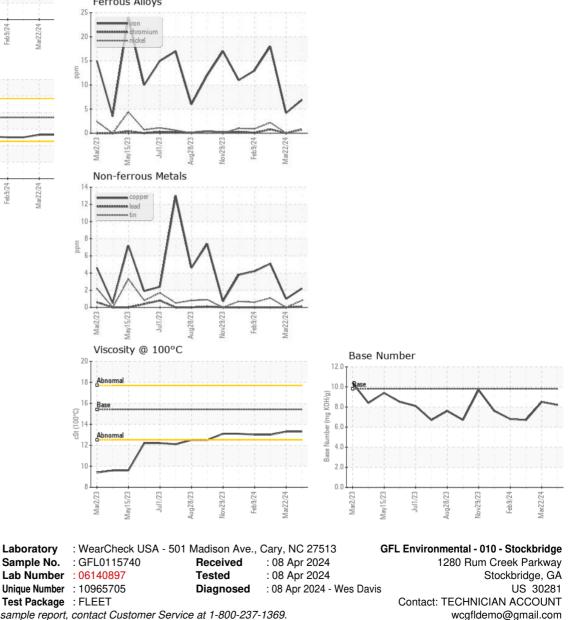
OIL ANALYSIS REPORT





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	13.3	13.3	13.0
GRAPHS						

Ferrous Alloys



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)

Report Id: GFL010 [WUSCAR] 06140897 (Generated: 04/08/2024 18:28:29) Rev: 1

Certificate 12367

Submitted By: JOSHUA TINKER Page 2 of 2

T:

F: