

OIL ANALYSIS REPORT

Sample Rating Trend



Area (MC13051) 812104 Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (38 QTS)

SAMPLE INFORMATION metho

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.

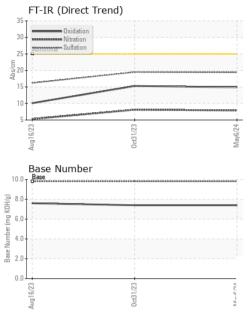
Fluid Condition

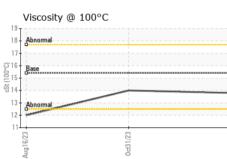
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR		method	limit/base	current	nistory i	nistory∠
Sample Number		Client Info		GFL0120612	GFL0066143	GFL0060496
Sample Date		Client Info		06 May 2024	31 Oct 2023	16 Aug 2023
Machine Age	hrs	Client Info		0	3545	3011
Oil Age	hrs	Client Info		0	500	0
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	0.5
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	c	method	limit/base	current	history1	history2
	3					
Iron	ppm	ASTM D5185m	>120	9	17	8
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>5	1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	<1
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	2	0	2
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
			11 1. 11			
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base	current 2	history1 0	history2 41
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	2	0	41
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	2 0	0 4	41 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 56	0 4 54	41 0 18
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 56 0	0 4 54 0	41 0 18 <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	2 0 56 0 914	0 4 54 0 833	41 0 18 <1 95
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	2 0 56 0 914 1029	0 4 54 0 833 1086	41 0 18 <1 95 2414
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	0 0 60 0 1010 1070 1150	2 0 56 0 914 1029 1001	0 4 54 0 833 1086 932	41 0 18 <1 95 2414 1025
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	2 0 56 0 914 1029 1001 1212	0 4 54 0 833 1086 932 1158	41 0 18 <1 95 2414 1025 1208
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	2 0 56 0 914 1029 1001 1212 3050	0 4 54 0 833 1086 932 1158 2812	41 0 18 <1 95 2414 1025 1208 4655
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	0 0 60 1010 1070 1150 1270 2060	2 0 56 0 914 1029 1001 1212 3050 current 4	0 4 54 0 833 1086 932 1158 2812 history1	41 0 18 <1 95 2414 1025 1208 4655 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	2 0 56 0 914 1029 1001 1212 3050 current	0 4 54 0 833 1086 932 1158 2812 history1 0	41 0 18 <1 95 2414 1025 1208 4655 history2 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Jimit/base >25	2 0 56 0 914 1029 1001 1212 3050 current 4 3 2	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25	2 0 56 0 914 1029 1001 1212 3050 current 4 3 2 2	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 0	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0
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 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 56 0 914 1029 1001 1212 3050 current 4 3 2 2 current 0.6	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 history1 0.9	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0 history2 0.1
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 56 0 914 1029 1001 1212 3050 <i>current</i> 4 3 2 <i>current</i> 0.6 7.9	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 0 history1 0.9 8.1	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0 history2 0.1 5.3
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 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 56 0 914 1029 1001 1212 3050 current 4 3 2 2 current 0.6	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 history1 0.9	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0 history2 0.1
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	2 0 56 0 914 1029 1001 1212 3050 <i>current</i> 4 3 2 <i>current</i> 0.6 7.9	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 0 history1 0.9 8.1	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0 history2 0.1 5.3
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20	2 0 56 0 914 1029 1001 1212 3050 current 4 3 2 2 current 0.6 7.9 19.4	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 0 0 0 0 0 8.1 19.5	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0 history2 0.1 5.3 16.2
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 220 20 20 20 20 20 20 20 20	2 0 56 0 914 1029 1001 1212 3050 current 4 3 2 current 0.6 7.9 19.4 current	0 4 54 0 833 1086 932 1158 2812 history1 0 0 0 0 history1 0.9 8.1 19.5 history1	41 0 18 <1 95 2414 1025 1208 4655 history2 6 <1 0 history2 0.1 5.3 16.2 history2



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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	13.8	14.0	12.0
GRAPHS						
Ferrous Alloys						
16 iron	\wedge					
14- nickel						
12						
6						
4						
2-						
			41-			
Aug16/23	0ct31/23		2			
	E.		/lay6			
			May6/24			
Non-ferrous Metals			May6			
Non-ferrous Metals			Maye			
Non-ferrous Metals			Maye			
Non-ferrous Metals			May6			
Non-ferrous Metals			May6			
Non-ferrous Metals			Mayo			
Non-ferrous Metals			May6			
Non-ferrous Metals			Marc			
Non-ferrous Metals	5					
Non-ferrous Metals	5					
Non-ferrous Metals			May6/24			
Non-ferrous Metals	5		May6/24	Base Number		
Non-ferrous Metals	5		May6/24	Base Number		
Non-ferrous Metals	5		+			
Non-ferrous Metals	5		+			
Non-ferrous Metals	5		+			
Non-ferrous Metals	5		+			
Non-ferrous Metals	5		+			
Non-ferrous Metals	5		0.0 Park (014 (0) (010 (010 (010 (010 (010 (010 (010			
Non-ferrous Metals	5		10.0 (0,H0) Bul Jaquiny Bul Ja			
Non-ferrous Metals	0et31/23		10.0 10.0	Base	/23	
Non-ferrous Metals	5		10.0 (0,H0) Bul Jaquiny Bul Ja		0d31/23	



 Unique Number
 : 11029856
 Diagnosed
 : 15 May 2024 - Wes Davis

 Certificate L2367
 Test Package
 : FLEET

 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)

Environmental - 904A - Thorpe N14985 Tieman Ave Thorp, WI US 54771 Contact: Andy Kane akane@gflenv.com T: (715)202-3420 106:2012) F:

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Submitted By: See also GFL904,A,B,C, 927, 938 - Andy Kane