

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area (LS9457) Machine Id 2277 Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (40 QTS)

SAMPLE INFORMATION method

1/2016 Arc2017 Jac2018 FeX018 Me2/2020 Dec2021 Dec2021



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.

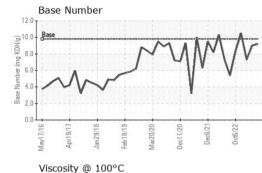
Fluid Condition

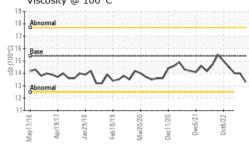
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0090127	GFL0075171	GFL0061894
Sample Date		Client Info		25 Jan 2024	03 Oct 2023	30 Jun 2023
Machine Age	hrs	Client Info		44059	43889	43729
Oil Age	hrs	Client Info		44059	43889	43729
Oil Changed		Client Info		Not Changd	Not Changd	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	15	7	40
Chromium	ppm	ASTM D5185m	>20	<1	<1	3
Nickel	ppm	ASTM D5185m	>5	0	<1	2
Titanium	ppm	ASTM D5185m	>2	<1	0	2
Silver	ppm	ASTM D5185m	>2	0	0	2
Aluminum	ppm	ASTM D5185m	>20	<1	3	4
Lead	ppm	ASTM D5185m	>40	2	<1	8
Copper	ppm	ASTM D5185m	>330	5	4	17
Tin	ppm	ASTM D5185m	>15	1	<1	3
Vanadium	ppm	ASTM D5185m		<1	0	1
Cadmium	ppm	ASTM D5185m		0	0	2
ADDITIVES		method	limit/base	current	history1	history2
ABBIINEO		methou	iiiiii/base	Guircin	nistory i	TIStoryz
Boron	ppm	ASTM D5185m	0	3	3	7
	ppm ppm					
Boron		ASTM D5185m	0	3	3	7 0 57
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	3 0	3 0	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 55 <1 869	3 0 60 <1 1032	7 0 57
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 55 <1 869 999	3 0 60 <1 1032 1119	7 0 57 3 960 1148
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 0 55 <1 869 999 959	3 0 60 <1 1032 1119 1169	7 0 57 3 960 1148 995
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	3 0 55 <1 869 999	3 0 60 <1 1032 1119	7 0 57 3 960 1148
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	3 0 55 <1 869 999 959	3 0 60 <1 1032 1119 1169	7 0 57 3 960 1148 995
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	3 0 55 <1 869 999 959 1118	3 0 60 <1 1032 1119 1169 1426	7 0 57 3 960 1148 995 1264
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	0 0 60 1010 1070 1150 1270 2060	3 0 55 <1 869 999 959 1118 2530	3 0 60 <1 1032 1119 1169 1426 3610	7 0 57 3 960 1148 995 1264 3576
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 1010 1070 1150 1270 2060	3 0 55 <1 869 999 959 1118 2530 current	3 0 60 <1 1032 1119 1169 1426 3610 history1	7 0 57 3 960 1148 995 1264 3576 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	0 0 60 1010 1070 1150 1270 2060	3 0 555 <1 869 999 959 1118 2530 current 3	3 0 60 <1 1032 1119 1169 1426 3610 history1 4	7 0 57 3 960 1148 995 1264 3576 history2 8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 kimit/base	3 0 55 <1 869 999 959 1118 2530 current 3 2	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1	7 0 57 3 960 1148 995 1264 3576 history2 8 4
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 limit/base >25	3 0 55 <1 869 999 959 1118 2530 current 3 2 2 <1	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1 <1	7 0 57 3 960 1148 995 1264 3576 history2 8 4 6
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 2060 225 >25 >20	3 0 55 <1 869 999 959 1118 2530 current 3 2 2 <1 current	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1 <1 <1 history1	7 0 57 3 960 1148 995 1264 3576 history2 8 4 6 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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	3 0 55 <1 869 999 959 1118 2530 <u>current</u> 3 2 <1 <u>current</u> 0.8	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1 <1 <1 history1 0.6	7 0 57 3 960 1148 995 1264 3576 history2 8 4 6 history2 3.4
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	3 0 55 <1 869 999 959 1118 2530 current 3 2 <1 2 <1 0.8 6.0	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1 <1 <1 history1 0.6 4.8	7 0 57 3 960 1148 995 1264 3576 history2 8 4 6 history2 3.4 9.7
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	3 0 55 <1 869 999 959 1118 2530 current 3 2 <1 2 <1 0.8 6.0 18.2	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1 <1 <1 history1 0.6 4.8 17.3	7 0 57 3 960 1148 995 1264 3576 history2 8 4 6 history2 3.4 9.7 24.4
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 ppm TS ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D7844 *ASTM D7624	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >4 >20 >30 imit/base	3 0 55 <1 869 999 959 1118 2530 Current 3 2 <1 Current 0.8 6.0 18.2 Current	3 0 60 <1 1032 1119 1169 1426 3610 history1 4 1 <1 <1 history1 0.6 4.8 17.3 history1	7 0 57 3 960 1148 995 1264 3576 history2 8 4 6 history2 3.4 9.7 24.4 history2

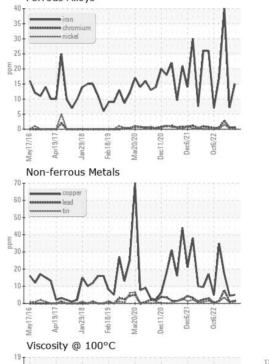


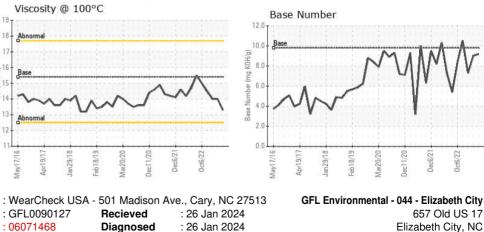
OIL ANALYSIS REPORT





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	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	14.0	14.0
GRAPHS						
Ferrous Alloys						





657 Old US 17 Elizabeth City, NC US 27909 Contact: TOM BAIRD tom.baird@gflenv.com T: (252)562-2645 F: (252)264-4411



Test Package : FLEET Certificate L2367 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)

Jan29/18

Feb 18/19

Mar20/20

Recieved

Diagnostician : Wes Davis

Apr19/17

: GFL0090127

:06071468 : 10848145

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13 Abnorma

12 11

Laboratory

Sample No.

Lab Number

Unique Number

May17/16

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