

OIL ANALYSIS REPORT

(YA113932) 2433

Component **Diesel Engine**

PETRO CANADA DURON SHP 15W40 (8 GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

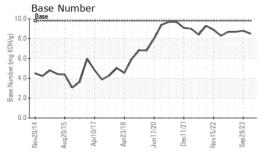
Fluid Condition

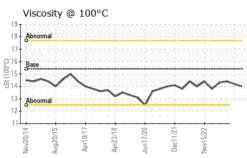
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089981	GFL0074440	GFL0080512
Sample Date		Client Info		23 Jan 2024	29 Sep 2023	02 Jun 2023
Machine Age	hrs	Client Info		512899	512899	512899
Oil Age	hrs	Client Info		512899	512899	512899
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	>75	22	53	26
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>54	<1	1	0
Lead	ppm	ASTM D5185m	>20	1	2	<1
Copper	ppm	ASTM D5185m	>240	3	6	4
Tin	ppm	ASTM D5185m	>5	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	PP	method	limit/base	current	history1	history2
	nnm	ACTM DE105m	0	2	1	2
Boron	ppm	ASTM D5185m	0	3	1	2
Boron Barium	ppm	ASTM D5185m	0	0	0	0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0	0 59	0 63	0 61
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 59 <1	0 63 <1	0 61 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 59 <1 987	0 63 <1 937	0 61 <1 937
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 59 <1 987 1104	0 63 <1 937 1037	0 61 <1 937 1063
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 59 <1 987 1104 1086	0 63 <1 937 1037 1039	0 61 <1 937 1063 1059
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270	0 59 <1 987 1104 1086 1290	0 63 <1 937 1037 1039 1271	0 61 <1 937 1063 1059 1236
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 59 <1 987 1104 1086	0 63 <1 937 1037 1039	0 61 <1 937 1063 1059 1236 3314
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	0 60 0 1010 1070 1150 1270 2060	0 59 <1 987 1104 1086 1290 3261	0 63 <1 937 1037 1039 1271 3189 history1	0 61 <1 937 1063 1059 1236 3314 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 59 <1 987 1104 1086 1290 3261 current	0 63 <1 937 1037 1039 1271 3189 history1	0 61 <1 937 1063 1059 1236 3314 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 59 <1 987 1104 1086 1290 3261 current 4	0 63 <1 937 1037 1039 1271 3189 history1 5	0 61 <1 937 1063 1059 1236 3314 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >35	0 59 <1 987 1104 1086 1290 3261 current 4 2	0 63 <1 937 1037 1039 1271 3189 history1 5 3	0 61 <1 937 1063 1059 1236 3314 history2 3 <1
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	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >35	0 59 <1 987 1104 1086 1290 3261 current 4 2 2	0 63 <1 937 1037 1039 1271 3189 history1 5 3 18	0 61 <1 937 1063 1059 1236 3314 history2 3 <1
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	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base	0 59 <1 987 1104 1086 1290 3261 current 4 2 2 current 0.6	0 63 <1 937 1037 1039 1271 3189 history1 5 3 18 history1 1.2	0 61 <1 937 1063 1059 1236 3314 history2 3 <1 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base	0 59 <1 987 1104 1086 1290 3261 current 4 2 2 current 0.6 6.4	0 63 <1 937 1037 1039 1271 3189 history1 5 3 18 history1 1.2 7.2	0 61 <1 937 1063 1059 1236 3314 history2 3 <1 1 history2 0.7 6.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76144	0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base >3 >20 >30	0 59 <1 987 1104 1086 1290 3261 current 4 2 2 current 0.6 6.4 18.7	0 63 <1 937 1037 1039 1271 3189 history1 5 3 18 history1 1.2 7.2 20.0	0 61 <1 937 1063 1059 1236 3314 history2 3 <1 1 history2 0.7 6.6 19.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76144	0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base	0 59 <1 987 1104 1086 1290 3261 current 4 2 2 current 0.6 6.4	0 63 <1 937 1037 1039 1271 3189 history1 5 3 18 history1 1.2 7.2	0 61 <1 937 1063 1059 1236 3314 history2 3 <1 1 history2 0.7 6.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76144	0 60 0 1010 1070 1150 1270 2060 limit/base >35 >20 limit/base >3 >20 >30	0 59 <1 987 1104 1086 1290 3261 current 4 2 2 current 0.6 6.4 18.7	0 63 <1 937 1037 1039 1271 3189 history1 5 3 18 history1 1.2 7.2 20.0	0 61 <1 937 1063 1059 1236 3314 history2 3 <1 1 history2 0.7 6.6 19.7



OIL ANALYSIS REPORT

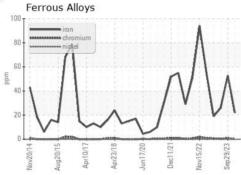


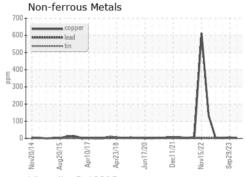


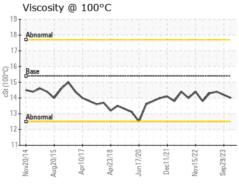
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

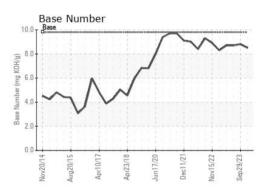
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.2	14.4

GRAPHS













Laboratory Sample No. Lab Number Test Package : FLEET

: GFL0089981 : 06071494 Unique Number : 10848171

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 26 Jan 2024 Diagnosed : 27 Jan 2024

Diagnostician : Wes Davis

GFL Environmental - 018 - Fayetteville

4621 Marracco Drive Hope Mills, NC US 28348

Contact: Robert Carter robert.carter@gflenv.com T: (910)596-1170

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)