

OIL ANALYSIS REPORT

NORMAL

Area (PX422R) 10527 Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (11 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.

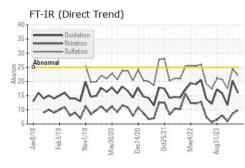
Fluid Condition

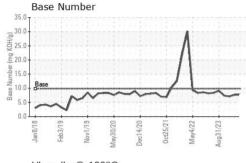
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

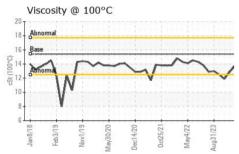
	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114502	GFL0074646	GFL0092487
Sample Date		Client Info		14 Apr 2024	18 Jan 2024	06 Nov 2023
Machine Age	hrs	Client Info		23700	23115	22558
Oil Age	hrs	Client Info		0	557	127
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	0.8
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	>100	30	16	9
Chromium	ppm	ASTM D5185m	>20	1	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	2
Lead	ppm	ASTM D5185m	>40	1	0	<1
Copper	ppm	ASTM D5185m	>330	1	<1	0
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
				_	<u> </u>	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	method	limit/base	0 current	0 history1	0 history2
	ppm		limit/base			-
ADDITIVES		method ASTM D5185m		current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	0	current 9	history1 6	history2 5
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	0 0 60	current 9 0	history1 6 0	history2 5 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 9 0 66	history1 6 0 53	history2 5 0 53
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 9 0 66 <1	history1 6 0 53 0	history2 5 0 53 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 9 0 66 <1 865	history1 6 0 53 0 724	history2 5 0 53 <1 706
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 9 0 66 <1 865 1086	history1 6 0 53 0 724 863	history2 5 0 53 <1 706 884
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm 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 9 0 66 <1 865 1086 963	history1 6 0 53 0 724 863 892	history2 5 0 53 <1 706 884 818
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 9 0 66 <1 865 1086 963 1139	history1 6 0 53 0 724 863 892 976	history2 5 0 53 <1 706 884 818 987
ADDITIVES 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	0 0 60 1010 1070 1150 1270 2060	ourrent 9 0 66 <1 865 1086 963 1139 3107	history1 6 0 53 0 724 863 892 976 2571	history2 5 0 53 <1 706 884 818 987 2396
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 9 0 66 <1 865 1086 963 1139 3107 current	history1 6 0 53 0 724 863 892 976 2571 history1	history2 5 0 53 <1 706 884 818 987 2396 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	9 0 66 <1 865 1086 963 1139 3107 current 7	history1 6 0 53 0 724 863 892 976 2571 history1 5	history2 5 0 53 <1 706 884 818 987 2396 history2 5
ADDITIVES 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 limit/base >25	current 9 0 66 <1 865 1086 963 1139 3107 current 7 16	history1 6 0 53 0 724 863 892 976 2571 history1 5 15	history2 5 0 53 <1 706 884 818 987 2396 history2 5 10
ADDITIVES 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 Jimit/base >25	current 9 0 66 <1 865 1086 963 1139 3107 current 7 16 16	history1 6 0 53 0 724 863 892 976 2571 history1 5 15 2	history2 5 0 53 <1 706 884 818 987 2396 history2 5 10 <1
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 Imit/base >25	9 0 66 <1 865 1086 963 1139 3107 current 7 16 16 16 current	history1 6 0 53 0 724 863 892 976 2571 history1 5 15 2 history1	history2 5 0 53 <1 706 884 818 987 2396 history2 5 10 <1 +history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	current 9 0 66 <1 865 1086 963 1139 3107 current 7 16 16 1.8	history1 6 0 53 0 724 863 892 976 2571 history1 5 15 2 history1 1.6	history2 5 0 53 <1 706 884 818 987 2396 history2 5 10 <1 0 0.6
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	current 9 0 66 <1 865 1086 963 1139 3107 current 7 16 16 current 1.8 9.9	history1 6 0 53 0 724 863 892 976 2571 history1 5 15 2 history1 1.6 8.7	history2 5 0 53 <1 706 884 818 987 2396 history2 5 10 <1 history2 0.6 5.9
ADDITIVES 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 imit/base >25 imit/base >20 imit/base >3 >20	9 0 66 <1 865 1086 963 1139 3107 current 7 16 16 1.8 9.9 22.1	history1 6 0 53 0 724 863 892 976 2571 history1 5 15 2 history1 1.6 8.7 24.5	history2 5 0 53 <1 706 884 818 987 2396 history2 5 10 <1 history2 0.6 5.9 17.5



OIL ANALYSIS REPORT



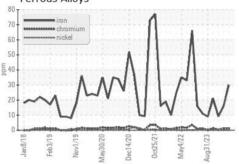


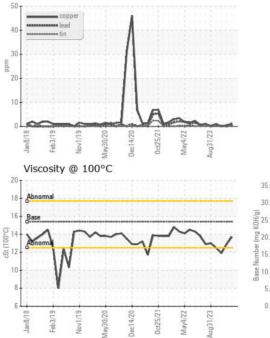


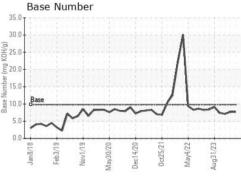
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	13.7	12.9	11.9
GRAPHS						

Ferrous Alloys

Non-ferrous Metals







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 095 - Atlanta West Sample No. : GFL0114502 Received : 16 Apr 2024 2699 Cochran Industrial Blvd Lab Number : 06150896 Tested : 17 Apr 2024 Douglasville, GA Unique Number : 10980974 Diagnosed : 17 Apr 2024 - Wes Davis US 30127-1332 Test Package : FLEET Contact: Darrell Welch Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. darrell.welch@gflenv.com T: (800)207-6618 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. E:

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

Report Id: GFL095 [WUSCAR] 06150896 (Generated: 04/17/2024 16:50:10) Rev: 1

Submitted By: Darrell Welch

Page 2 of 2