

OIL ANALYSIS REPORT

Sample Rating Trend



WL0266

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

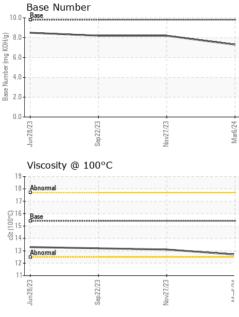
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Jun2023		Nov2023 Mar2024				
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0097497	GFL0097464	GFL0092897		
Sample Date		Client Info		06 Mar 2024	27 Nov 2023	22 Sep 2023		
Machine Age	hrs	Client Info		1	1	1		
Oil Age	hrs	Client Info		1	1	0		
Oil Changed		Client Info		N/A	N/A	N/A		
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	>100	10	3	12		
Chromium	ppm	ASTM D5185m	>20	<1	0	<1		
Nickel	ppm	ASTM D5185m	>4	0	0	<1		
Titanium	ppm	ASTM D5185m		0	0	0		
Silver	ppm	ASTM D5185m	>3	0	0	0		
Aluminum	ppm	ASTM D5185m	>20	2	<1	2		
Lead	ppm	ASTM D5185m	>40	<1	0	<1		
Copper	ppm	ASTM D5185m	>330	<1	0	<1		
Tin	ppm	ASTM D5185m	>15	<1	0	<1		
Vanadium	ppm	ASTM D5185m		0	<1	0		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	0	6	9	8		
Barium	ppm	ASTM D5185m	0	0	0	0		
Molybdenum	ppm	ASTM D5185m	60	61	57	54		
Manganese	ppm	ASTM D5185m	0	0	0	<1		
Magnesium								
0	ppm	ASTM D5185m	1010	885	923	834		
Calcium	ppm ppm		1010 1070	885 1086	923 1100	834 993		
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Calcium	ppm	ASTM D5185m ASTM D5185m	1070	1086	1100	993		
Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1070 1150	1086 1016	1100 1045	993 931		
Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270	1086 1016 1192	1100 1045 1263	993 931 1113		
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060	1086 1016 1192 3111	1100 1045 1263 3167	993 931 1113 2750		
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060 limit/base	1086 1016 1192 3111 current	1100 1045 1263 3167 history1	993 931 1113 2750 history2		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ITS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base >25	1086 1016 1192 3111 current 7	1100 1045 1263 3167 history1 3	993 931 1113 2750 history2 3		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25	1086 1016 1192 3111 current 7 0	1100 1045 1263 3167 history1 3 <1	993 931 1113 2750 history2 3 3 3		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20	1086 1016 1192 3111 current 7 0 2	1100 1045 1263 3167 history1 3 <1 0	993 931 1113 2750 history2 3 3 3 2		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20 limit/base >3	1086 1016 1192 3111 current 7 0 2 2 current	1100 1045 1263 3167 history1 3 <1 0 history1	993 931 1113 2750 history2 3 3 3 2 history2		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	1086 1016 1192 3111 current 7 0 2 2 current 0.1	1100 1045 1263 3167 history1 3 <1 0 history1 0.1	993 931 1113 2750 history2 3 3 3 2 history2 0.2		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm TTS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	1086 1016 1192 3111 current 7 0 2 current 0.1 9.1 17.5	1100 1045 1263 3167 history1 3 <1 0 history1 0.1 6.0	993 931 1113 2750 history2 3 3 3 2 history2 0.2 6.7		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm TTS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >3 >20	1086 1016 1192 3111 current 7 0 2 current 0.1 9.1 17.5	1100 1045 1263 3167 history1 3 <1 0 history1 0.1 6.0 17.2	993 931 1113 2750 history2 3 3 2 history2 0.2 6.7 18.0		
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method *ASTM D7414	1070 1150 1270 2060 limit/base >25 >20 limit/base >30 limit/base >25	1086 1016 1192 3111 current 7 0 2 current 0.1 9.1 17.5 current	1100 1045 1263 3167 history1 3 <1 0 history1 0.1 6.0 17.2 history1	993 931 1113 2750 history2 3 3 3 2 history2 0.2 6.7 18.0 history2		



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VISUAL



Nov27/23	Mat6/24	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NORML NORML >0.2 Iimit/base	NONE NONE NONE NONE NORML NORML NEG NEG	NONE NONE NONE NONE NONE NORML NORML NEG NEG history1	NONE NONE NONE NONE NORML NORML NEG NEG history2
		Visc @ 100°C	cSt	ASTM D445	15.4	12.7	13.1	13.2
		GRAPHS Ferrous Alloys						
- 52/23/03	6.0 m	Non-ferrous Meta	ls	Nov21/23	Mac6/24			
		Viscosity @ 100°C	C	Nav27/23	Mar6/24	Base Number		
		18 - Abnormal			10.0	Base		
		17 17 16 10 10 15 14 13 12 11 12 11 12 12 12 12 12 12		Nov27/23	Mateiza Mateiz	10028/23	Sep22/2/3	Mov2.1/23 Mat6/24
* - Denotes tes	t methods that a	: WearCheck USA - 50 : GFL0097497 : 06116759 : 10925592	Recei Teste Diagn vice at 1-8 17025 sco	n Ave., Cary ived : 13 d : 14 nosed : 14 200-237-1369 upe of accred	, NC 27513 Mar 2024 Mar 2024 Mar 2024 - Wo Mar 2024 - Wo D.	GFL es Davis	Environmenta 1241 KING SE Contact: dylan.tol T:	I - 641 - Alpena TTLEMENT RD ALPENA, MI US 49707 DYLAN TOLAN an@gflenv.com : (989)854-7203 F:

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