

OIL ANALYSIS REPORT

Sample Rating Trend



Area (GFD986) 934029 Omponent Natural Gas Eng Fluid PETRO CANADA

934029 Component Natural Gas Engine Fluid PETRO CANADA DURON SHP 15W40 (21 QTS)

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 INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114538	GFL0074644	
Sample Date		Client Info		08 May 2024	17 Jan 2024	
Machine Age	hrs	Client Info		1760	1187	
Oil Age	hrs	Client Info		573	1187	
Oil Changed		Client Info		Not Changd	Changed	
Sample Status				NORMAL	ABNORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	30	A 76	
Chromium	ppm	ASTM D5185m	>4	<1	2	
Nickel	ppm	ASTM D5185m	>2	<1	2	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>9	8	19	
Lead	ppm	ASTM D5185m	>30	2	2	
Copper	ppm	ASTM D5185m	>35	4	18	
Tin	ppm	ASTM D5185m	>4	1	3	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 2	history1 4	history2
	ppm ppm					· · · · ·
Boron		ASTM D5185m	0	2	4	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 0	4	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 0 70	4 4 62	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 0 70 3	4 4 62 13	
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 70 3 894	4 4 62 13 853	
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 70 3 894 1140	4 4 62 13 853 1144	
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 70 3 894 1140 965	4 62 13 853 1144 807	
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 70 3 894 1140 965 1195	4 62 13 853 1144 807 1013	
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 0 1010 1070 1150 1270 2060	2 0 70 3 894 1140 965 1195 2953	4 4 62 13 853 1144 807 1013 2207	
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 0 60 1010 1070 1150 1270 2060	2 0 70 3 894 1140 965 1195 2953 current	4 4 62 13 853 1144 807 1013 2207 history1	 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 kimit/base >+100	2 0 70 3 894 1140 965 1195 2953 current 8	4 4 62 13 853 1144 807 1013 2207 history1 28	 history2
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 0 1010 1070 1150 1270 2060 kimit/base >+100	2 0 70 3 894 1140 965 1195 2953 current 8 7	4 4 62 13 853 1144 807 1013 2207 history1 28 6	 history2
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 60 0 1010 1070 1150 1270 2060 limit/base >+100	2 0 70 3 894 1140 965 1195 2953 current 8 7 15	4 4 62 13 853 1144 807 1013 2207 history1 28 6 48	 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 2060 >+100 >20 20 imit/base	2 0 70 3 894 1140 965 1195 2953 current 8 7 15 current	4 4 62 13 853 1144 807 1013 2207 history1 28 6 48 history1	 history2 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	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 2060 >+100 >20 20 imit/base	2 0 70 3 894 1140 965 1195 2953 <i>current</i> 8 7 15 <i>current</i> 0	4 4 62 13 853 1144 807 1013 2207 history1 28 6 48 history1 0	 history2 history2 history2
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> >+100 20 <i>limit/base</i>	2 0 70 3 894 1140 965 1195 2953 <i>current</i> 8 7 15 <i>current</i> 0 9.9	4 4 62 13 853 1144 807 1013 2207 history1 28 6 48 6 48 history1 0 12.1	 history2 history2
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 >+100 20 imit/base >20	2 0 70 3 894 1140 965 1195 2953 <i>current</i> 8 7 15 <i>current</i> 0 9.9 20.4	4 4 62 13 853 1144 807 1013 2207 history1 28 6 48 history1 0 12.1 25.1	 history2 history2 history2 history2



40

35

30

10.0 - Base

(B)HOX (mg K0H/d) 4.0 2.0

0.0

20. 18 Abnormal

00-00 St (100-C) Base

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Abnormal 12 10. Jan17/24

OIL ANALYSIS REPORT

	VISUAL		method	limit/base	current	history1	history2
Oxidation Nitration	White Metal	scalar	*Visual	NONE	NONE	NONE	
Sulfation	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Abnormal	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
#8884	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
)/24 - 3/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	
Jan 17/24 May8/24	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	
Base Number	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	13.0	11.1	
	GRAPHS						
	Ferrous Alloys						
4	80 iron 1						
лсам	70 60						
9 9 9	50						
/iscosity @ 100°C	Ē 40 -						
	30 -						
Abnormal	20						
Base	10-						
	0			4			
Abnormal	Jan 17/24			May8/24			
	-			2			
24	Non-ferrous Meta	IS					
Jan 17/24	16- copper						
	14- management tin						
	12						
	E ¹⁰						
	6 -						
	4						
	2 -						
	0/24			724			
	Jan 17			May8			
	Viscosity @ 100°	C			Dear Number		
	19 T			10.0	Base Number		
	18 Abnormal						
	17			(B/H) +		
	base			6.1 1.0 89388 Number (mg KOH(g) 8938 0	,		
	0 15 0 15 14			ber (n			
	3 13 - Abnormal)		
	12-			2.0)		
	11-)		,
	11						
	11				an 17/2 ⁴		
	11-			May8/24	Jan 17/24		
Laboratory	11)1 Madiso	n Ave., Carv	May8/24		ironmental - 095	
ANAR Sample No.	: WearCheck USA - 50 : GFL0114538	Recei	ved : 10	, NC 27513 May 2024		2699 Cochran	5 - Atlanta We s Industrial Blv
Sample No. Lab Number	: WearCheck USA - 50 : GFL0114538 : 06175307	Recei Teste	ved : 10 d : 13	, NC 27513) May 2024 3 May 2024	GFL Env	2699 Cochran Do	i - Atlanta We Industrial Blv ouglasville, G
Sample No. Lab Number Unique Number	: WearCheck USA - 50 : GFL0114538 : 06175307 : 11021360	Recei	ved : 10 d : 13	, NC 27513 May 2024	GFL Env	2699 Cochran Do U	5 - Atlanta We Industrial Blv ouglasville, G S 30127-133
Sample No. Lab Number	: WearCheck USA - 50 : GFL0114538 : 06175307 : 11021360 : FLEET	Recei Teste Diagr	ved : 10 d : 13 losed : 13	, NC 27513 May 2024 May 2024 May 2024 - W	GFL Env	2699 Cochran Do U Contact	5 - Atlanta We Industrial Bly ouglasville, G

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Submitted By: Darrell Welch