

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id Component

Fluid

Diesel Engine PETRO CANADA DURON SHP 15W40 (--- 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 INFOR	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info		GFL0097654	GFL0087315	GFL0072897			
Sample Date		Client Info		01 Nov 2023	25 Sep 2023	21 Apr 2023			
Machine Age	hrs	Client Info		11123	10851	10032			
Oil Age	hrs	Client Info		500	819	170			
Oil Changed		Client Info		Changed	Changed	Changed			
Sample Status				NORMAL	NORMAL	NORMAL			
CONTAMINAT		method	limit/base	current	history1	history2			
Fuel			>3.0	<1.0	<1.0	<1.0			
	•		>3.0			<1.0 NEG			
Glycol		WC Method		NEG	NEG				
WEAR METAL	S	method	limit/base	current	history1	history2			
Iron	ppm	ASTM D5185m	>120	3	7	12			
Chromium	ppm	ASTM D5185m	>20	0	0	<1			
Nickel	ppm	ASTM D5185m	>5	0	0	0			
Titanium	ppm	ASTM D5185m	>2	0	0	0			
Silver	ppm	ASTM D5185m	>2	0	0	0			
Aluminum	ppm	ASTM D5185m	>20	<1	4	<1			
Lead	ppm	ASTM D5185m	>40	0	0	0			
Copper	ppm	ASTM D5185m	>330	<1	<1	<1			
Tin	ppm	ASTM D5185m	>15	0	0	0			
Vanadium	ppm	ASTM D5185m		<1	0	0			
Cadmium	ppm	ASTM D5185m		0	0	0			
ADDITIVES		method	limit/base	ourropt	biotonut	history2			
NDDHIVE0		methou				ristory2			
Boron	ppm	ASTM D5185m	0	<1	1	3			
	ppm ppm								
Boron		ASTM D5185m	0	<1	1	3			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	<1 0	1 0	3 0			
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	<1 0 61	1 0 60	3 0 61			
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	<1 0 61 <1	1 0 60 0	3 0 61 <1			
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	<1 0 61 <1 1002	1 0 60 0 976	3 0 61 <1 947			
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	<1 0 61 <1 1002 1160	1 0 60 0 976 1082	3 0 61 <1 947 1121			
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	<1 0 61 <1 1002 1160 1065	1 0 60 0 976 1082 1002	3 0 61 <1 947 1121 915			
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	<1 0 61 <1 1002 1160 1065 1301	1 0 60 0 976 1082 1002 1249	3 0 61 <1 947 1121 915 1246			
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	<1 0 61 <1 1002 1160 1065 1301 3172	1 0 60 976 1082 1002 1249 3106	3 0 61 <1 947 1121 915 1246 2978			
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 1010 1070 1150 1270 2060	<1 0 61 <1 1002 1160 1065 1301 3172 current	1 0 60 0 976 1082 1002 1249 3106 history1 <1	3 0 61 <1 947 1121 915 1246 2978 history2			
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	<1 0 61 <1 1002 1160 1065 1301 3172 current 3	1 0 60 976 1082 1002 1249 3106 history1	3 0 61 <1 947 1121 915 1246 2978 history2 3			
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 >25 >20	<1 0 61 <1 1002 1160 1065 1301 3172 current 3 4 0	1 0 60 0 976 1082 1002 1249 3106 history1 <1 2 0	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 0			
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 limit/base >25	<1 0 61 <1 1002 1160 1065 1301 3172 current 3 4 0 current	1 0 60 976 1082 1002 1249 3106 history1 <1 2 0 0	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 0 0 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 2060 225 >25 >20 <u>limit/base</u> >20	<1 0 61 <1 1002 1160 1065 1301 3172 <u>current</u> 3 4 0 <u>current</u>	1 0 60 976 1082 1002 1249 3106 history1 <1 2 0 history1 0.3	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 0 history2 0.5			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS 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	<1 0 61 <1 1002 1160 1065 1301 3172 <i>current</i> 3 4 0 <i>current</i> 0.3 6.3	1 0 60 0 976 1082 1002 1249 3106 history1 <1 2 0 history1 0.3 5.7	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 2 0 history2 0.5 7.2			
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 2060 225 20 225 20 imit/base >4 20 20	<1 0 61 <1 1002 1160 1065 1301 3172 current 3 4 0 current 0.3 6.3 18.2	1 0 60 976 1082 1002 1249 3106 history1 <1 2 0 history1 0.3 5.7 17.9	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 2 0 history2 0.5 7.2 18.0			
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 D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	<1 0 61 <1 1002 1160 1065 1301 3172 <i>current</i> 3 4 0 <i>current</i> 0.3 6.3	1 0 60 976 1082 1002 1249 3106 history1 <1 2 0 history1 0.3 5.7	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 0 history2 0.5 7.2 18.0 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 D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 imit/base >4 20 20	<1 0 61 <1 1002 1160 1065 1301 3172 current 3 4 0 current 0.3 6.3 18.2 current 14.1	1 0 60 0 976 1082 1002 1249 3106 history1 <1 2 0 0 history1 0.3 5.7 17.9 history1 13.6	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 0 0 history2 0.5 7.2 18.0 history2 14.6			
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	<1 0 61 <1 1002 1160 1065 1301 3172 <i>current</i> 3 4 0 <i>current</i> 0.3 6.3 18.2 <i>current</i>	1 0 60 0 976 1082 1002 1249 3106 history1 <1 2 0 history1 0.3 5.7 17.9 history1	3 0 61 <1 947 1121 915 1246 2978 history2 3 2 0 history2 0.5 7.2 18.0 history2			



OIL ANALYSIS REPORT

*Visual

scalar

NONE

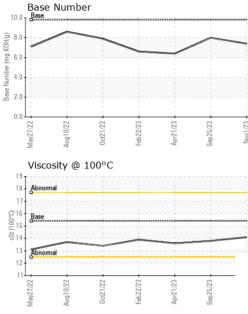
NONE

NONE

NONE

VISUAL

White Metal



		/	\frown	Ρ	'ellow l recipit ilt			scala scala scala	r *Vis	sual sual sual	NONE NONE		NO NO	NE		NON NON	E		NONE NONE NONE	
					ebris			scala		sual	NONE		NO			NON			NONE	
					and/D	irt		scala		sual	NONE		NO			NON			NONE	
0ct21/22 -	Feb22/23	Apr21/23 -	Sep25/23 -		ppear			scala		sual	NORN			RML		NOR			NORM	L
0ct2	Feb 2	Apr2	Sep 2 Nov	С)dor			scala		sual	NORN	1L		RML		NOR	ML		NORM	L
)°C				E	mulsif	ed Wa	ter	scala	r *Vis	sual	>0.2		NEC	G		NEG			NEG	
, с				F	ree W	ater		scala	r *Vis	sual			NEC	G		NEG			NEG	
					FLUI	D PR	OPE	ERTIES	S m	ethod	limit/k	oase	CL	urrent		hist	ory1		histor	y2
				V	'isc @	100°C		cSt	AST	M D445	15.4		14.1	I		13.8			13.6	
					GRA	PHS														
					Ferro	us Alloy	/s													
0:421/22	Feb 22/23 -	Apr21/23 -	Sep 25/23	10 - 8 - 6 - Wdd 4 -	ZZIZZ ^{JEW} Non-fr	acopper copper lead	0ct21/22	Leio2223	Apr21/23	Sap25/23	Nov1/23									
					Viscos	sity @	0ct21/22	Feb22/23	Apr21/23	Sep 25/23	Nov1/23	10.0	Base	Numl	ber					
					Abnorma	<u> </u>														
				17-								Base Number (mg KOH/g)						/		
				()-16 ()-00 ()-15 ()-15 ()-15 ()-15 ()-15 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16 ()-16)	Base							6.0 gull								
				र्छ 14								aquin 4.0								
				13-	Abnorma							ase 2.0								
				12-	-							2.0								
				11	22	22	22 -	23	23	23	23	0.0	22	22	22	23	2	23	23	23
					May27/22	Aug10/22	0ct21/22	Feb22/23	Apr21/23	Sep25/23	Nov1/23		May27/22	Aug10/22	0ct21/22	Eeh02/23	1 200	Apr21/23	Sep25/23	Nov1/23
То * - I	Denotes	: 0 : 0 : 1 : F cont are o	GFL009 60093 07431 ELEET fact Cu	97654 58 20 stomer of the	r Serv ISO 1	Receive Diagno Diagno vice at 1 17025 so	501 Madison Ave., Cary, NC 27513 Received : 16 Nov 2023 Diagnosed : 16 Nov 2023 Diagnostician : Wes Davis ice at 1-800-237-1369. 7025 scope of accreditation. he simple acceptance decision rule (J					7400 Napier Rd NORTHVILLE, MI US 48168 Contact: John Nahal jnahal@gflenv.com T:								
Sta	tements c	or conto	rmity to spe	cifica	tions a	re base	d on	tne simp	ie acce	ptance	aecision	ruie (J	CGM	106:20	(21ת					F: