

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **425025-1347** Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (36 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

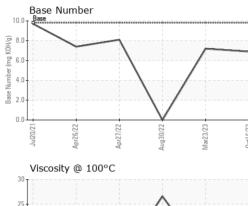
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

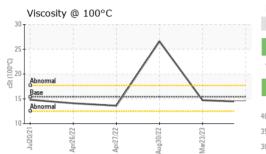
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0090464	GFL0064452	GFL0055595
Sample Date		Client Info		16 Oct 2023	23 Mar 2023	30 Aug 2022
Machine Age	hrs	Client Info		21287	20175	20572
Oil Age	hrs	Client Info		1112	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Sample Status				NORMAL	NORMAL	SEVERE
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>120	11	16	37
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m	>2	3	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	1
Lead	ppm	ASTM D5185m	>40	0	0	3
Copper	ppm	ASTM D5185m	>330	1	1	6
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
		and the second			1 A	biotory ()
ADDITIVES		method				history2
Boron	ppm	ASTM D5185m	0	current 206	history1 238	0
	ppm ppm		0			
Boron		ASTM D5185m	0	206	238	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	206 0	238 0	0 2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	206 0 91	238 0 112	0 2 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	206 0 91 <1	238 0 112 <1	0 2 59 <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	206 0 91 <1 624	238 0 112 <1 575	0 2 59 <1 798
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	206 0 91 <1 624 1395	238 0 112 <1 575 1771	0 2 59 <1 798 1115
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	206 0 91 <1 624 1395 670	238 0 112 <1 575 1771 819	0 2 59 <1 798 1115 917
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	206 0 91 <1 624 1395 670 806	238 0 112 <1 575 1771 819 1049	0 2 59 <1 798 1115 917 1162
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	206 0 91 <1 624 1395 670 806 2429	238 0 112 <1 575 1771 819 1049 3455	0 2 59 <1 798 1115 917 1162 2567
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	206 0 91 <1 624 1395 670 806 2429 current	238 0 112 <1 575 1771 819 1049 3455 history1	0 2 59 <1 798 1115 917 1162 2567 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 method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base >25	206 0 91 <1 624 1395 670 806 2429 current 4	238 0 112 <1 575 1771 819 1049 3455 history1 5	0 2 59 <1 798 1115 917 1162 2567 history2 3
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 1010 1070 1150 1270 2060 kimit/base >25	206 0 91 <1 624 1395 670 806 2429 current 4 2	238 0 112 <1 575 1771 819 1049 3455 history1 5 <1	0 2 59 <1 798 1115 917 1162 2567 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 0 1010 1070 1150 1270 2060 limit/base >25 >20	206 0 91 <1 624 1395 670 806 2429 current 4 2 5	238 0 112 <1 575 1771 819 1049 3455 history1 5 < <1 2	0 2 59 <1 798 1115 917 1162 2567 history2 3 <1 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	206 0 91 <1 624 1395 670 806 2429 current 4 2 2 5 5	238 0 112 <1 575 1771 819 1049 3455 history1 5 <1 2 history1	0 2 59 <1 798 1115 917 1162 2567 history2 3 <1 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 1imit/base >20	206 0 91 <1 624 1395 670 806 2429 current 4 2 5 5 current 2.9	238 0 112 <1 575 1771 819 1049 3455 history1 5 <1 2 history1 3.4	0 2 59 <1 798 1115 917 1162 2567 history2 3 <1 0 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> >25 >20 <i>limit/base</i> >4 >20	206 0 91 <1 624 1395 670 806 2429 <i>current</i> 4 2 2 5 <i>current</i> 2.9 8.8	238 0 112 <1 575 1771 819 1049 3455 history1 5 <1 2 history1 3.4 9.7	0 2 59 <1 798 1115 917 1162 2567 history2 3 <1 0 vistory2 8.2 38.1
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 >25 imit/base >4 >20	206 0 91 <1 624 1395 670 806 2429 current 4 2 2 5 current 2.9 8.8 25.0	238 0 112 <1 575 1771 819 1049 3455 history1 5 <1 2 history1 3.4 9.7 27.1	0 2 59 <1 798 1115 917 1162 2567 history2 3 <1 0 history2 ◆ 8.2 38.1 47.4
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 D7415	0 0 0 1010 1070 1150 2260 225 220 220 imit/base >4 >20 >30 imit/base	206 0 91 <1 624 1395 670 806 2429 <i>current</i> 4 2 5 <i>current</i> 2.9 8.8 25.0 <i>current</i>	238 0 112 <1 575 1771 819 1049 3455 history1 5 <1 2 history1 3.4 9.7 27.1 history1	0 2 59 <1 798 1115 917 1162 2567 history2 3 <10 0 history2 ▲ 8.2 38.1 47.4 history2



OIL ANALYSIS REPORT

VISUAL





		Jul20/21 Apr26/22	Apr2//22 Aug30/22	Mar23/23	0ct16/23	Jul20/21 Apr26/22	Apr27/22 Aug30/22	Mar23/23
		28 26 24 22 20 3 18 4 bnormal 4 4 22 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	22	813	10.0 (b)HOX Bu) 34 Bu)		Apri27/22 Aug30/22	23
		Viscosity @ 100°	Aug30/22	CZCCZEDW	Oct16/23	Base Number		
		Non-ferrous Meta	als Aug30/22 Aug30/22	Mar23/23	Oct16/23			
	;	15 10 5	022	323	6/23			
Aug30/22	Mar23/23	Ferrous Alloys	\land					
		Visc @ 100°C GRAPHS	cSt	ASTM D445	15.4	14.4	14.7	▲ 26.6
\wedge		FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
		Emulsified Water Free Water	scalar scalar	*Visual *Visual	>0.2	NEG NEG	NEG NEG	NEG NEG
Au	Ma 0	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Aug30/22	Mar23/23 0ct16/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
\setminus /		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE
			scalar	*Visual				NONE
								NONE NONE
/		VISUAL White Metal Yellow Metal Precipitate			NONE NONE NONE NONE	NONE NONE NONE NONE	NONE NONE NONE NONE	N

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

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Submitted By: TECHNICIAN ACCOUNT

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