

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 630778 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

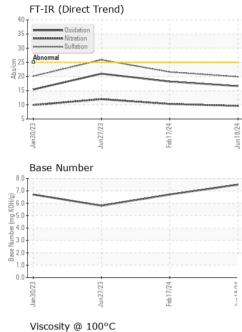
#### Fluid Condition

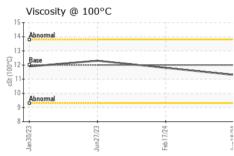
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0128922	PCA0118912	PCA0101331
Sample Date		Client Info		18 Jun 2024	17 Feb 2024	27 Jun 2023
Machine Age	mls	Client Info		49949	39999	25175
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Changed	Changed
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	24	31	64
Chromium	ppm		>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	8	16	29
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	3	10	34
Tin	ppm	ASTM D5185m	>15	<1	1	2
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 32	history2 30
	ppm ppm					
Boron Barium	ppm	ASTM D5185m	2	7	32	30
Boron		ASTM D5185m ASTM D5185m	2 0	7 0	32 0	30 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	7 0 63	32 0 55	30 0 3
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	7 0 63 1	32 0 55 <1	30 0 3 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	7 0 63 1 1033	32 0 55 <1 881	30 0 3 2 740
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	7 0 63 1 1033 1171	32 0 55 <1 881 1147	30 0 3 2 740 1400
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	2 0 50 0 950 1050 995	7 0 63 1 1033 1171 1185	32 0 55 <1 881 1147 997	30 0 3 2 740 1400 805
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	2 0 50 950 1050 995 1180	7 0 63 1 1033 1171 1185 1398	32 0 55 <1 881 1147 997 1177	30 0 3 2 740 1400 805 946
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	2 0 50 950 1050 995 1180 2600	7 0 63 1 1033 1171 1185 1398 3817	32 0 55 <1 881 1147 997 1177 2939 history1 3	30 0 3 2 740 1400 805 946 3094 history2 21
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	2 0 50 950 1050 995 1180 2600	7 0 63 1 1033 1171 1185 1398 3817 current	32 0 55 <1 881 1147 997 1177 2939 history1	30 0 3 2 740 1400 805 946 3094 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 <b>method</b>	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	7 0 63 1 1033 1171 1185 1398 3817 current 8	32 0 55 <1 881 1147 997 1177 2939 history1 3	30 0 3 2 740 1400 805 946 3094 history2 21
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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	7 0 63 1 1033 1171 1185 1398 3817 current 8 2	32 0 55 <1 881 1147 997 1177 2939 history1 3 2	30 0 3 2 740 1400 805 946 3094 history2 21 4
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	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	7 0 63 1 1033 1171 1185 1398 3817 current 8 2 2 19	32 0 55 <1 881 1147 997 1177 2939 history1 3 2 37	30 0 3 2 740 1400 805 946 3094 history2 21 4 80
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	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 -20 <b>limit/base</b>	7 0 63 1 1033 1171 1185 1398 3817 current 8 2 19 current	32 0 55 <1 881 1147 997 1177 2939 history1 3 2 37 history1	30 0 3 2 740 1400 805 946 3094 <b>history2</b> 21 4 80 <b>history2</b>
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	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b>	7 0 63 1 1033 1171 1185 1398 3817 current 8 2 19 2 19 current 0.4	32 0 55 <1 881 1147 997 1177 2939 history1 3 2 37 history1 0.4	30 0 3 2 740 1400 805 946 3094 history2 21 4 80 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 ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	7 0 63 1 1033 1171 1185 1398 3817 current 8 2 19 current 0.4 9.6	32 0 55 <1 881 1147 997 1177 2939 history1 3 2 37 history1 0.4 10.3	30 0 3 2 740 1400 805 946 3094 history2 21 4 80 history2 0.5 12.0
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	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	7 0 63 1 1033 1171 1185 1398 3817 current 8 2 19 2 19 current 0.4 9.6 19.9	32 0 55 <1 881 1147 997 1177 2939 history1 3 2 37 history1 0.4 10.3 21.6	30 0 3 2 740 1400 805 946 3094 <b>history2</b> 21 4 80 <b>history2</b> 0.5 12.0 25.9
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	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	7 0 63 1 1033 1171 1185 1398 3817 current 8 2 19 current 0.4 9.6 19.9 current	32 0 55 <1 881 1147 997 1177 2939 history1 3 2 37 history1 0.4 10.3 21.6 history1	30 0 3 2 740 1400 805 946 3094 <b>history2</b> 21 4 80 <b>history2</b> 0.5 12.0 25.9 <b>history2</b>

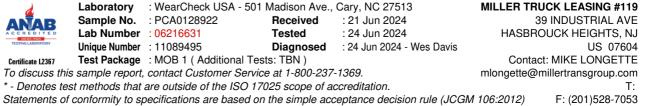


# **OIL ANALYSIS REPORT**





VISUAL		method				history2
Vhite Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
ellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
recipitate	scalar	*Visual	NONE	NONE	NONE	NONE
silt	scalar	*Visual	NONE	NONE	NONE	NONE
ebris	scalar	*Visual	NONE	NONE	NONE	NONE
and/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
ppearance	scalar	*Visual	NORML	NORML	NORML	NORML
)dor	scalar	*Visual	NORML	NORML	NORML	NORML
mulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
ree Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
/isc @ 100°C	cSt	ASTM D445	12.00	11.3	11.8	12.3
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
Severe			80	Severe		
			60 E			
Abnormal			40	Abnormal		
			20			
Jan30/23 - Jun27/23 -		Feb17/24-	Jun18/24	Jan 30/23	Jun27/23 -	Feb17/24 .
		Feb	Jun		,	Feb
Aluminum (ppm)			50	Chromium (p	pm)	
Severe			40	Severe		
Abnorma			20	Abnormal		
			10			
Jan30/23 Jun27/23		Feb 17/24	Jun18/24 -	Jan 30/23	Jun27/23	Feb17/24
ج ع Copper (ppm)		ι	٦٢	് Silicon (ppm)	٦٢ ٦	ц,
Severe Abmonmat			80		1	1
			60			
			틆.40			
				Abnormal		
			0	L		
Jan 30/23 Jun 27/23		Feb 17/24	Jun 18/24	Jan 30/23	Jun27/23	Feb17/24
,		E	Jur		r	а Ш
Viscosity @ 100°C				Base Number		
Abnormal			в/но Коно Коно			
Base			ຍ ສ 4.0			
Abnormal			(B)HOX 6.0 built built b			
Abnormal						
Jan30/23 - Jun27/23 -		Feb17/24-	Jun18/24	Jan 30/23	Jun27/23 -	Feb17/24 -
an.		ep	lunl	an	7un	Feb17/24



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