

OIL ANALYSIS REPORT

Area FLEET/Dillon Machine Id 2220631 (S/N U160929A)

Component Diesel Engine Fluid

PETRO CANADA DURON ADVANCED 10W30 (9 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

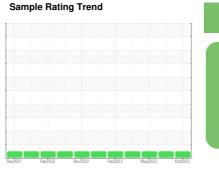
All component wear rates are normal.

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.



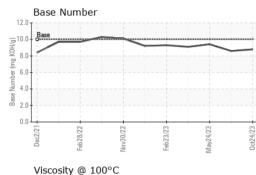


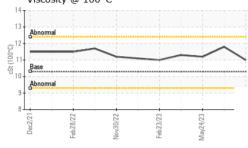
NORMAL

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0108124	PCA0104882	PCA0098157
Sample Date		Client Info		24 Oct 2023	23 Aug 2023	24 May 2023
Machine Age	hrs	Client Info		4035	3679	3062
Oil Age	hrs	Client Info		400	200	200
Oil Changed		Client Info		Changed	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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	<u>د</u>	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	4	5	5
Chromium	ppm	ASTM D5185m	>20	+ <1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	~	0	0	0
Silver		ASTM D5185m	>3	0	0	0
Aluminum	ppm ppm	ASTM D5185m	>20	1	2	0
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	0	1	<1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	pp			•	0	Ŭ
ADDITIVES		method			historv1	history2
ADDITIVES Boron	maa	method ASTM D5185m	limit/base	current	history1 2	history2 9
Boron	ppm ppm	ASTM D5185m	0	15	2	history2 9 0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	15 0	2 0	9
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	15	2 0 60	9
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 60	15 0 60 0	2 0	9 0 63
Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	15 0 60	2 0 60 <1	9 0 63 0
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	15 0 60 0 890	2 0 60 <1 970	9 0 63 0 855
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	15 0 60 0 890 1006	2 0 60 <1 970 1091	9 0 63 0 855 1131
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	15 0 60 0 890 1006 959	2 0 60 <1 970 1091 1084	9 0 63 0 855 1131 1048
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	15 0 60 0 890 1006 959 1207	2 0 60 <1 970 1091 1084 1335	9 0 63 0 855 1131 1048 1218
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 1010 1070 1150 1270 2060	15 0 60 0 890 1006 959 1207 3038	2 0 60 <1 970 1091 1084 1335 3973	9 0 63 0 855 1131 1048 1218 3208
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	15 0 60 0 890 1006 959 1207 3038 current	2 0 60 <1 970 1091 1084 1335 3973 history1	9 0 63 0 855 1131 1048 1218 3208 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 imit/base >25	15 0 60 0 890 1006 959 1207 3038 current 4	2 0 60 <1 970 1091 1084 1335 3973 history1 3	9 0 63 0 855 1131 1048 1218 3208 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 imit/base >25	15 0 60 0 890 1006 959 1207 3038 <u>current</u> 4 0	2 0 60 <1 970 1091 1084 1335 3973 history1 3 <1	9 0 63 0 855 1131 1048 1218 3208 history2 3 0
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 imit/base >25	15 0 60 0 890 1006 959 1207 3038 current 4 0 0	2 0 60 <1 970 1091 1084 1335 3973 history1 3 <1 1	9 0 63 0 855 1131 1048 1218 3208 history2 3 0 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25	15 0 60 0 890 1006 959 1207 3038 current 4 0 0 0	2 0 60 <1 970 1091 1084 1335 3973 history1 3 <1 1 history1	9 0 63 0 855 1131 1048 1218 3208 history2 3 0 2 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	15 0 60 0 890 1006 959 1207 3038 <u>current</u> 4 0 0 0 <u>current</u>	2 0 60 <1 970 1091 1084 1335 3973 history1 3 <1 1 1 history1 0.1	9 0 63 0 855 1131 1048 1218 3208 history2 3 0 2 history2 0.1
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> >3 >20	15 0 60 0 890 1006 959 1207 3038 <i>current</i> 4 0 0 0 <i>current</i> 0.1 5.7	2 0 60 <1 970 1091 1084 1335 3973 history1 3 <1 1 1 history1 0.1 5.6	9 0 63 0 855 1131 1048 1218 3208 history2 3 0 2 history2 0.1 5.9
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 D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20	15 0 60 0 890 1006 959 1207 3038 <u>current</u> 4 0 0 0 <u>current</u> 0.1 5.7 17.3	2 0 60 <1 970 1091 1084 1335 3973 history1 3 <1 1 1 history1 0.1 5.6 16.9	9 0 63 0 855 1131 1048 1218 3208 history2 3 0 2 <u>history2</u> 0.1 5.9 17.6

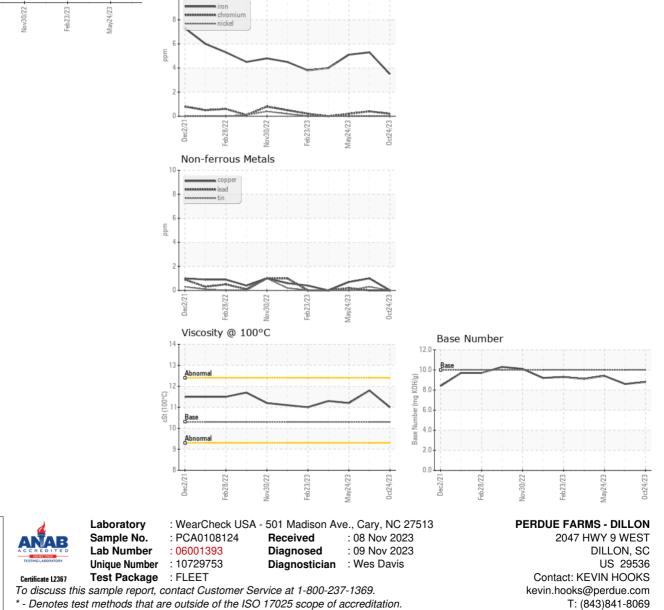


OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history2		
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG		
Free Water	scalar	*Visual		NEG	NEG	NEG		
FLUID PROPE	ERTIES	method	limit/base	current	history1	history2		
Visc @ 100°C	cSt	ASTM D445	10.3	11.0	11.8	11.2		
GRAPHS								
Ferrous Alloys								



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