

OIL ANALYSIS REPORT

MCGINN BUS COMPANY 11423 Component

Diesel Engine PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

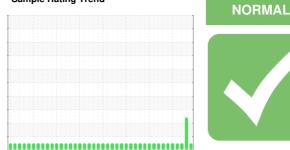
All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material. Tests indicate that there is no fuel present in the oil.

Fluid Condition

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



SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104412	PCA0090528	PCA0090629
Sample Date		Client Info		19 Dec 2023	21 Oct 2023	09 Sep 2023
Machine Age	mls	Client Info		535602	522995	510627
Oil Age	mls	Client Info		12000	24000	12000
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	SEVERE	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	4	72	5
Chromium	ppm	ASTM D5185m	>20	1	3	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	4	0
Lead	ppm	ASTM D5185m	>40	0	13	0
Copper	ppm	ASTM D5185m	>330	0	2	0
Tin	ppm	ASTM D5185m	>15	0	3	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 3	history1 5	history2 7
	ppm ppm		0			
Boron		ASTM D5185m	0	3	5	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 4	5 0	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 4 62	5 0 49	7 0 62
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 4 62 0	5 0 49 <1	7 0 62 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	3 4 62 0 940	5 0 49 <1 795	7 0 62 0 1078
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	3 4 62 0 940 1084	5 0 49 <1 795 878	7 0 62 0 1078 1187
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	3 4 62 0 940 1084 1072	5 0 49 <1 795 878 826	7 0 62 0 1078 1187 1104
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	3 4 62 0 940 1084 1072 1245	5 0 49 <1 795 878 826 1012	7 0 62 0 1078 1187 1104 1376
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 1010 1070 1150 1270 2060	3 4 62 0 940 1084 1072 1245 3516	5 0 49 <1 795 878 826 1012 2472	7 0 62 0 1078 1187 1104 1376 4075
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	3 4 62 0 940 1084 1072 1245 3516 current	5 0 49 <1 795 878 826 1012 2472 history1	7 0 62 0 1078 1187 1104 1376 4075 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	3 4 62 0 940 1084 1072 1245 3516 <u>current</u> 32	5 0 49 <1 795 878 826 1012 2472 history1 5	7 0 62 0 1078 1187 1104 1376 4075 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25	3 4 62 0 940 1084 1072 1245 3516 <u>current</u> 32 11	5 0 49 <1 795 878 826 1012 2472 history1 5 4	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25	3 4 62 0 940 1084 1072 1245 3516 <u>current</u> 32 11 9	5 0 49 <1 795 878 826 1012 2472 history1 5 4 0	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 imit/base >25 >20 >20	3 4 62 0 940 1084 1072 1245 3516 <u>current</u> 32 11 9 0.2	5 0 49 <1 795 878 826 1012 2472 history1 5 4 0 0 9.4	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0 0 0 0 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	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 >20 >3.0 imit/base >6	3 4 62 0 940 1084 1072 1245 3516 <i>current</i> 32 11 9 0.2 <i>current</i>	5 0 49 <1 795 878 826 1012 2472 history1 5 4 0 0 ● 9.4 history1	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0 0 0 <1.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 >3.0 imit/base >6	3 4 62 0 940 1084 1072 1245 3516 <i>current</i> 32 11 9 0.2 <i>current</i> 0.3	5 0 49 <1 795 878 826 1012 2472 history1 5 4 0 0 9.4 history1 5.5	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0 0 0 <1.0 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Solicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D3524 method *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 225 20 220 23.0 1imit/base 26 20	3 4 62 0 940 1084 1072 1245 3516 <u>current</u> 32 11 9 0.2 <u>current</u> 0.3 7.9	5 0 49 <1 795 878 826 1012 2472 history1 5 4 0 9.4 history1 5.5 17.0	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0 0 0 <1.0 history2 0.2 7.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel 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 >20 >20 >3.0 imit/base >20 >3.0	3 4 62 0 940 1084 1072 1245 3516 <u>current</u> 32 11 9 0.2 <u>current</u> 0.3 7.9 19.7	5 0 49 <1 795 878 826 1012 2472 history1 5 4 0 0 € 9.4 history1 5.5 17.0 32.7	7 0 62 0 1078 1187 1104 1376 4075 history2 3 0 0 <1.0 history2 0.2 7.3 19.4

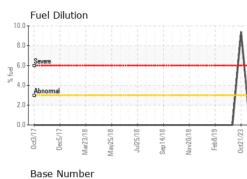
Sample Rating Trend

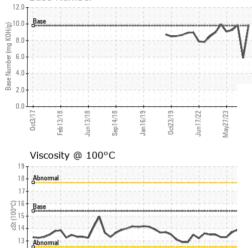


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OIL ANALYSIS REPORT



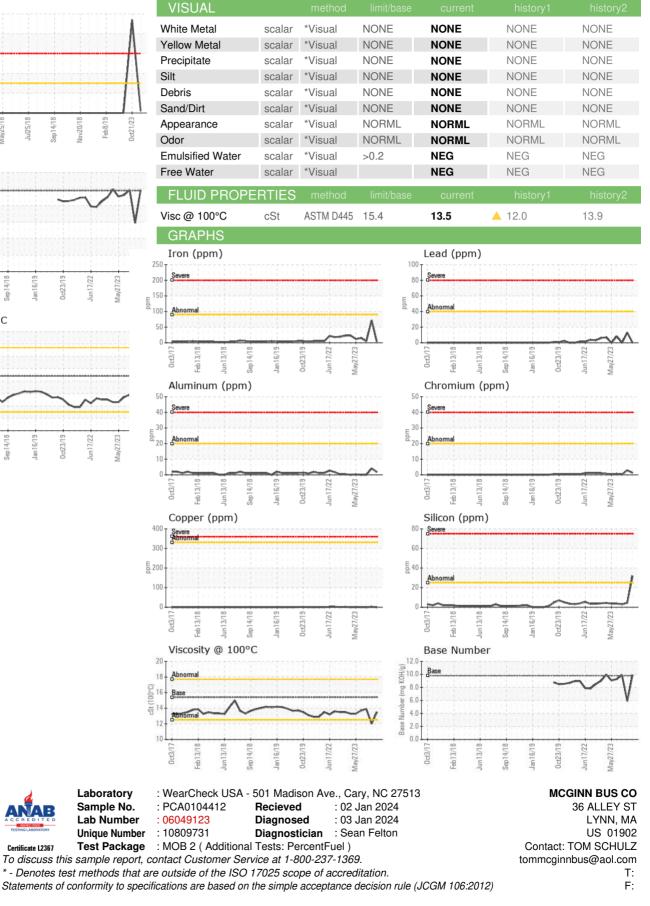


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Laboratory

Sample No.



Certificate L2367

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