

## **OIL ANALYSIS REPORT**

### Watkins Block Truck Shop Omaha 03 Nissan Forklift [Watkins Block Truck Shop Omaha] Component

**Middle Propane Engine** 

PETRO CANADA SUPREME 5W30 (4 QTS)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

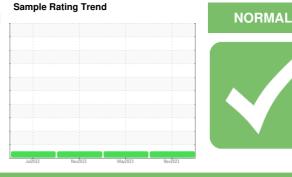
All component wear rates are normal.

#### 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 Date     Client Info     13 Nov 2023     18 May 2023     28 Nov 2022       Machine Age     hrs     Client Info     4821     4132     3346       Oil Age     hrs     Client Info     281     355     321       Oil Changed     Client Info     Changed     Changed     Changed       Sample Status     Imit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       Water     WC Method     >0.1     NEG     NEG     NEG       Chromium     ppm     ASTM 05/85m     >100     16     8     13       Chromium     ppm     ASTM 05/85m     >25     3     1     2       Nickel     ppm     ASTM 05/85m     >20     <1     <1     1       Silver     ppm     ASTM 05/85m     >20     <1     0     <1       Copper     ppm     ASTM 05/85m     >35     <1     0     <1       Chromium     ppm     ASTM 05/8	Sample Number Sample Date						
Sample Date     Client Info     13 Nov 2023     18 May 2023     28 Nov 2022       Machine Age     hrs     Client Info     4821     4132     3346       Oil Age     hrs     Client Info     281     355     321       Oil Changed     Client Info     Changed     Changed     Changed     Changed       Sample Status     NORMAL     NORMAL     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     limit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       Wear     WC Method     >0.1     NEG     NEG     NEG       Vickel     ppm     ASTM D5185m     >10     16     8     13       Chromium     ppm     ASTM D5185m     >20     <1     <1     <1       Silver     ppm     ASTM D5185m     >5     0     <1     <1       Capper     ppm     ASTM D5185m     >35     <1     0     0       Capper	Sample Date				SBP0005962	SBP0002230	SBP0002219
Machine AgehrsClient Info482141323346Oil AgehrsClient Info281355321Oil ChangedClient InfoChangedChangedChangedSample Statusimit/basecurrenthistory1history2WaterWC Method>0.1NEGNEGNEGWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>10016813ChromiumppmASTM D5185m>20312NickelppmASTM D5185m>2050<1<1SilverppmASTM D5185m>20524LeadppmASTM D5185m>25<10<1<1CopperppmASTM D5185m>25<10<1<1CopperppmASTM D5185m>25<10<1<1CopperppmASTM D5185m>35<11<1<1TinppmASTM D5185m<646<2<1<1<1CopperppmASTM D5185m<6<4165<5<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<1<			Client Info				
Oil Age hrs Client Info 281 355 321   Oil Changed Client Info Changed Changed Changed   Sample Status Imaged NORMAL NORMAL NORMAL NORMAL   CONTAMINATION method limit/base current history1 history2   Water WC Method >0.1 NEG NEG NEG   WEAR METALS method limit/base current history1 history2   Iron ppm ASTM D5185m >100 16 8 13   Chromium ppm ASTM D5185m >5 0 <1 <1   Nickel ppm ASTM D5185m >5 0 <1 <1   Silver ppm ASTM D5185m >20 5 2 4   Lead ppm ASTM D5185m >20 5 2 4   Lead ppm ASTM D5185m >20 5 2 4   Vanadium ppm ASTM D5185m >25 <1 0 <1   Cadmium ppm ASTM D5185m >35 <1 1 <1   Rore MSTM D5185m 186 142 138 <th>Machine Age</th> <th>hrs</th> <th></th> <th></th> <th></th> <th></th> <th></th>	Machine Age	hrs					
Sample Status     NORMAL     NORMAL     NORMAL     NORMAL       CONTAMINATION     method     limit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       Wear     ppm     ASTM D5185m     >100     16     8     13       Chromium     ppm     ASTM D5185m     >25     3     1     2       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Silver     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >35     1     1     <1       Capper     ppm     ASTM D5185m     >35     <1     1     <1       Cademium     ppm     ASTM D5185m     >3     <1     <1     <1       <	Oil Age	hrs	Client Info		281	355	321
CONTAMINATION     method     limit/base     current     history1     history2       Water     WC Method     >0.1     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     16     8     13       Chromium     ppm     ASTM D5185m     >25     3     1     2       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Aluminum     ppm     ASTM D5185m     >5     0     <1     <1       Aluminum     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >25     <1     0     <1       Cadmium     ppm     ASTM D5185m     >35     <1     1     <1       Cadmium     ppm     ASTM D5185m     0     <1     <1     <1       Cadmium     ppm     ASTM D5185m     186     142     138	Oil Changed		Client Info		Changed	Changed	Changed
Water     WC Method     >0.1     NEG     NEG     NEG       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     16     8     13       Chromium     ppm     ASTM D5185m     >25     3     1     2       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Silver     ppm     ASTM D5185m     >5     0     <1     <1       Aluminum     ppm     ASTM D5185m     >5     0     <1     <1       Aluminum     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >25     <1     0     <1       Caddium     ppm     ASTM D5185m     >8     6     4     6       Vanadium     ppm     ASTM D5185m     <1     <1     <1     <1       Cadmium     ppm     ASTM D5185m     16     142     138     55	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >100     16     8     13       Chromium     ppm     ASTM D5185m     >25     3     1     2       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Titanium     ppm     ASTM D5185m     >5     0     <1     <1       Silver     ppm     ASTM D5185m     >5     0     <1     <1       Auminum     ppm     ASTM D5185m     >5     0     <1     <1       Lead     ppm     ASTM D5185m     >25     <1     0     <1       Copper     ppm     ASTM D5185m     >8     6     4     6       Vanadium     ppm     ASTM D5185m     0     0     0     0       ADDITVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     1     0     0	CONTAMINATION		method	limit/base	current	history1	history2
Iron     ppm     ASTM D5185m     >100     16     8     13       Chromium     ppm     ASTM D5185m     >25     3     1     2       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Titanium     ppm     ASTM D5185m     >5     0     <1     <1       Silver     ppm     ASTM D5185m     >5     0     <1     <1       Aluminum     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >20     5     2     4       Copper     ppm     ASTM D5185m     >25     <1     0     <1       Cadmium     ppm     ASTM D5185m     >8     6     4     6       Vanadium     ppm     ASTM D5185m     >8     6     4     6       Cadmium     ppm     ASTM D5185m     78     68     74     165       Barium     ppm     ASTM D5185m     778     581     524	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium     ppm     ASTM D5185m     >25     3     1     2       Nickel     ppm     ASTM D5185m     >5     0     <1     <1       Titanium     ppm     ASTM D5185m     >5     0     <1     <1       Silver     ppm     ASTM D5185m     >5     0     <1     <1       Aluminum     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >20     5     2     4       Copper     ppm     ASTM D5185m     >25     <1     0     <1       Cadmium     ppm     ASTM D5185m     >36     6     4     6       Vanadium     ppm     ASTM D5185m     >8     6     4     6       Vanadium     ppm     ASTM D5185m     71     0     0     0       Cadmium     ppm     ASTM D5185m     79     68     74     <	WEAR METALS		method	limit/base	current	history1	history2
Nickel     ppm     ASTM D5185m     >5     0     <1	Iron	ppm	ASTM D5185m	>100	16	8	13
Titanium     ppm     ASTM D5185m     <1	Chromium	ppm	ASTM D5185m	>25	3	1	2
Silver     ppm     ASTM D5185m     >5     0     <1	Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Aluminum     ppm     ASTM D5185m     >20     5     2     4       Lead     ppm     ASTM D5185m     >25     <1     0     <1       Copper     ppm     ASTM D5185m     >35     <1     1     <1       Tin     ppm     ASTM D5185m     >8     6     4     6       Vanadium     ppm     ASTM D5185m     >8     6     4     6       Cadmium     ppm     ASTM D5185m     >8     6     4     6       Cadmium     ppm     ASTM D5185m     8     <1     <1     <1     <1       Cadmium     ppm     ASTM D5185m     186     142     138     55       Boron     ppm     ASTM D5185m     186     142     138     55       Barium     ppm     ASTM D5185m     79     68     74     165       Magnesium     ppm     ASTM D5185m     778     581     581     524       Calcium     ppm     ASTM D5185m     745     7	Titanium	ppm	ASTM D5185m		<1	<1	<1
Lead     ppm     ASTM D5185m     >25     <1	Silver	ppm	ASTM D5185m	>5	0	<1	<1
Copper     ppm     ASTM D5185m     >35     <1	Aluminum	ppm	ASTM D5185m	>20	5	2	4
Tin     ppm     ASTM D5185m     >8     6     4     6       Vanadium     ppm     ASTM D5185m     Image: Constraint of the story of the	Lead	ppm	ASTM D5185m	>25	<1	0	<1
Vanadium     ppm     ASTM D5185m     <1	Copper	ppm	ASTM D5185m	>35	<1	1	<1
Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     186     142     138     55       Barium     ppm     ASTM D5185m     186     142     138     55       Barium     ppm     ASTM D5185m      0     0     <1	Tin			>8	6	4	6
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     186     142     138     55       Barium     ppm     ASTM D5185m     186     142     138     55       Barium     ppm     ASTM D5185m     <1     0     0     <1       Molybdenum     ppm     ASTM D5185m     79     68     74     165       Manganese     ppm     ASTM D5185m     79     68     74     165       Magnesium     ppm     ASTM D5185m     79     68     74     165       Calcium     ppm     ASTM D5185m     578     581     581     524       Calcium     ppm     ASTM D5185m     1002     1325     1352     1411       Phosphorus     ppm     ASTM D5185m     745     766     735     727       Zinc     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base		ppm	ASTM D5185m				
Boron     ppm     ASTM D5185m     186     142     138     55       Barium     ppm     ASTM D5185m     <1     0     0     <1       Molybdenum     ppm     ASTM D5185m     79     68     74     165       Manganese     ppm     ASTM D5185m     79     68     74     165       Magnesium     ppm     ASTM D5185m     79     68     74     165       Calcium     ppm     ASTM D5185m     0     <1     <1     <1       Phosphorus     ppm     ASTM D5185m     578     581     581     524       Calcium     ppm     ASTM D5185m     1002     1325     1352     1411       Phosphorus     ppm     ASTM D5185m     745     766     735     727       Zinc     ppm     ASTM D5185m     837     936     914     889       Sulfur     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base	Cadmium	ppm	ASTM D5185m		0	0	0
Barium     ppm     ASTM D5185m     <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     79     68     74     165       Manganese     ppm     ASTM D5185m     0     <1     <1     <1       Magnesium     ppm     ASTM D5185m     578     581     581     524       Calcium     ppm     ASTM D5185m     1002     1325     1352     1411       Phosphorus     ppm     ASTM D5185m     745     766     735     727       Zinc     ppm     ASTM D5185m     837     936     914     889       Sulfur     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     19     14     8       Sodium     ppm     ASTM D5185m     >20     3     4     1       INFRA-RED     method     limit/base     current     history1     history2	Boron	ppm	ASTM D5185m	186	142	138	55
Manganese     ppm     ASTM D5185m     0     <1	Barium	ppm	ASTM D5185m	<1	0	0	<1
Magnesium     ppm     ASTM D5185m     578     581     581     524       Calcium     ppm     ASTM D5185m     1002     1325     1352     1411       Phosphorus     ppm     ASTM D5185m     745     766     735     727       Zinc     ppm     ASTM D5185m     837     936     914     889       Sulfur     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     19     14     8       Sodium     ppm     ASTM D5185m     >20     3     4     1       INFRA-RED     method     limit/base     current     history1     history2	Molybdenum	ppm	ASTM D5185m	79	68	74	165
Calcium     ppm     ASTM D5185m     1002     1325     1352     1411       Phosphorus     ppm     ASTM D5185m     745     766     735     727       Zinc     ppm     ASTM D5185m     837     936     914     889       Sulfur     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     19     14     8       Sodium     ppm     ASTM D5185m     >20     3     1     1       Potassium     ppm     ASTM D5185m     >20     3     4     1	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus     ppm     ASTM D5185m     745     766     735     727       Zinc     ppm     ASTM D5185m     837     936     914     889       Sulfur     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     19     14     8       Sodium     ppm     ASTM D5185m     >50     19     14     8       Potassium     ppm     ASTM D5185m     >20     3     1     1       INFRA-RED     method     limit/base     current     history1     history2	Magnesium	ppm	ASTM D5185m	578	581	581	524
Zinc     ppm     ASTM D5185m     837     936     914     889       Sulfur     ppm     ASTM D5185m     2502     3216     3380     2546       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >50     19     14     8       Sodium     ppm     ASTM D5185m     >20     3     1       Potassium     ppm     ASTM D5185m     >20     3     4     1       INFRA-RED     method     limit/base     current     history1     history2	Calcium	ppm	ASTM D5185m	1002	1325	1352	1411
SulfurppmASTM D5185m2502321633802546CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>5019148SodiumppmASTM D5185m231PotassiumppmASTM D5185m>20341INFRA-REDmethodlimit/basecurrenthistory1history2	Phosphorus	ppm	ASTM D5185m	745	766	735	727
CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m<>5019148SodiumppmASTM D5185m231PotassiumppmASTM D5185m>20341INFRA-REDmethodlimit/basecurrenthistory1history2	Zinc	ppm	ASTM D5185m	837	936	914	889
Silicon     ppm     ASTM D5185m     >50     19     14     8       Sodium     ppm     ASTM D5185m     2     3     1       Potassium     ppm     ASTM D5185m     >20     3     4     1       INFRA-RED     method     limit/base     current     history1     history2	Sulfur	ppm	ASTM D5185m	2502	3216	3380	2546
SodiumppmASTM D5185m231PotassiumppmASTM D5185m>20341INFRA-REDmethodlimit/basecurrenthistory1history2	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 3 4 1   INFRA-RED method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>50	19	14	8
INFRA-RED method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		2	3	1
	Potassium	ppm	ASTM D5185m	>20	3	4	1
Soot % *ASTM D7844 0.1 0 0.1	INFRA-RED		method	limit/base	current	history1	history2
	Soot %	%	*ASTM D7844		0.1	0	0.1
Nitration Abs/cm *ASTM D7624 >20 7.5 7.8 7.8	Nitration	Abs/cm	*ASTM D7624	>20		7.8	7.8
FLUID DEGRADATION method limit/base current history1 history2	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	10.0	10.0	10.2
		mg KOH/g		7.0	5.4	5.6	6.0



# **OIL ANALYSIS REPORT**

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

NEG

NEG

10.4

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

NEG

NEG

10.4

NONE

NONE

NONE

NONE

NONE

NONE

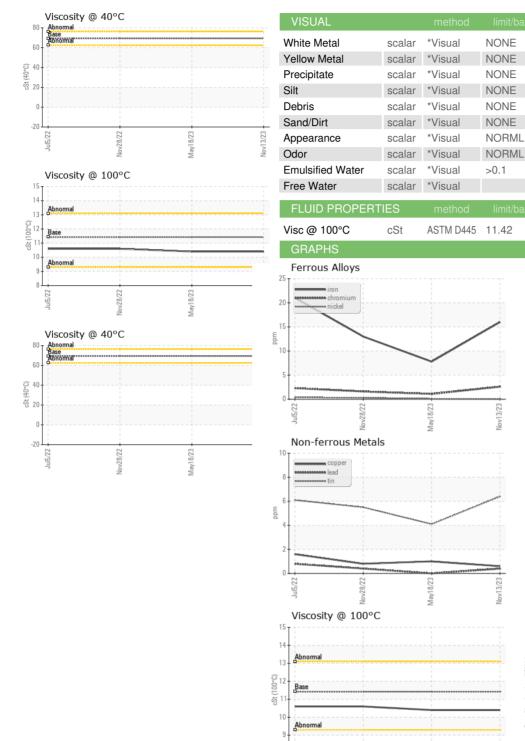
NORML

NORML

NEG

NEG

10.6

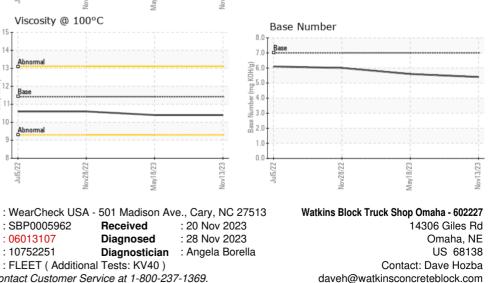


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lul5/22

: SBP0005962

:06013107



Nov13/23 -

Unique Number : 10752251 Test Package : FLEET (Additional Tests: KV40) Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Laboratory

Sample No.

Lab Number

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

Jov28/22

Vlay18/23

Received

Diagnosed

Diagnostician

T: (402)894-6518

F: