

OIL ANALYSIS REPORT



Machine Id

51986 Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service.

Sample Number Client Info WC0948252 WC0915081 WC09080742 Sample Date Client Info 10.Jun 2024 08 Apr 2024 31 Jan 2024 Machine Age mis Client Info 90752 31281 2597 Oil Age mis Client Info 29752 31281 2597 Oil Age Mis Client Info Changed Changed	SAMFLE INFORM	ATION	methoa	iimi/base	current	riistory i	riistoryz
Sample Date Client Info 10 Jun 2024 08 Apr 2024 31 Jan 2024 Machine Age mits Client Info 91025 61273 29992 Oil Age mits Client Info 29752 31281 2597 Oil Changed Client Info Changed Changed Changed Changed Sample Status Imit Mate NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current History1 Pistory2 Fuel WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG VeXAR WC Method >0.0 1 <1 1 Nickel ppm ASTM 05185m >40 1 0 0 0 Silver ppm ASTM 05185m >30 2 5 24 1 Auminum ppm ASTM 05185m >40 1 4 4 2	Sample Number		Client Info		WC0948252	WC0915081	WC0805742
Machine Age mis Client Info 91025 61273 29992 Oil Age nils Client Info 29752 31281 2597 Oil Changed Client Info 29752 31281 2597 Oil Changed Client Info 29752 31281 2597 Sample Status Imit/base Current NORMAL NORMAL CONTAMINATION method Imit/base current History1 History2 Fuel WC Method >5 <1.0 1 0.9 Water WC Method >0 NEG NEG NEG Chromium ppm ASTM 05185(m) >0 1 <1 1 Nickel ppm ASTM 05185(m) >20 21 4 4 Lead ppm ASTM 05185(m) >30 2 5 24 Nickel ppm ASTM 05185(m) >30 2 5 24 Lead ppm ASTM 05185(m) 0 <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>10 Jun 2024</th> <th>08 Apr 2024</th> <th>31 Jan 2024</th>	Sample Date		Client Info		10 Jun 2024	08 Apr 2024	31 Jan 2024
Oil Age mis Client Info 29752 31281 2597 Oil Changed Client Info Changed Changed Changed Changed Sample Status Imitobase current NORMAL NORMAL NORMAL CONTAMINATION method imitobase current history1 history2 Fuel WC Method >5 <1.0 1 0.9 Water WC Method NEG NEG NEG WEAR METALS method imit/base current history1 history2 Iron ppm ASTM D5185(m) >40 1 1 1 Nickel ppm ASTM D5185(m) >4 <1 0 1 Itanium ppm ASTM D5185(m) >3 <1 0 1 4 Lead ppm ASTM D5185(m) >40 1 1 4 Lead ppm ASTM D5185(m) 0 0 0 0 <	Machine Age	mls	Client Info		91025	61273	29992
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 1 0.9 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASIM05185(m) >20 1 <1 1 Nickel ppm ASIM05185(m) >20 1 <1 1 Nickel ppm ASIM05185(m) >20 21 4 4 Lead ppm ASIM05185(m) >3 <1 0 <1 Aluminum ppm ASIM05185(m) >30 2 5 24 Tin ppm ASIM05185(m) >30 2 5 24 Tin ppm ASIM05185(m) 0 0 0 Vanadium ppm ASIM05185(m) 20 2 5 43 Berylium ppm	Oil Age	mls	Client Info		29752	31281	2597
Construing Construing Construing Construing Construing Construing CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >5 <1.0 1 0.9 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM0585(m) >20 1 <1 1 Nickel ppm ASTM0585(m) >20 1 <1 1 Nickel ppm ASTM0585(m) >20 21 4 4 Copper ppm ASTM0585(m) >30 2 5 24 Tin ppm ASTM0585(m) >16 <1 2 2 Antimomy ppm ASTM0585(m) 0 0 0 0 <	Oil Changed		Client Info		Changed	Changed	Changed
Control method imit/base current history1 history2 Fuel WC Method >5 <1.0 1 0.9 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185(m) >20 1 <1 1 Nickel ppm ASTM 05185(m) >4 <1 0 <1 Nickel ppm ASTM 05185(m) >4 <1 0 <1 Aluminum ppm ASTM 05185(m) >20 21 4 4 Lead ppm ASTM 05185(m) >30 2 5 24 1 Tin ppm ASTM 05185(m) >15 <1 <1 2 Antimony ppm ASTM 05185(m) 0 0 0 0 <	Sample Status				NORMAL	NORMAI	NORMAI
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5. <1.0 1 0.9 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185(m) >20 1 <1 1 Nickel ppm ASTM 05185(m) >20 21 4 4 Lead ppm ASTM 05185(m) >20 21 4 4 Lead ppm ASTM 05185(m) >20 21 4 4 Lead ppm ASTM 05185(m) >10 0 0 0 Aluminum ppm ASTM 05185(m) >11 <1 2 2 Antimony ppm ASTM 05185(m) 0 0 0 0 <t< th=""><th>Campic Otatus</th><th></th><th></th><th></th><th>NOTIMAL</th><th>NOTIMAL</th><th>NOTIMAL</th></t<>	Campic Otatus				NOTIMAL	NOTIMAL	NOTIMAL
Fuel WC Method >5 <1.0	CONTAMINATION	J	method	limit/base	current	history1	history2
Water WC Method >0.2 NEG NEG NEG NEG NEG Glycol WC Method Imit/base current history1 history2 Iron ppm ASTMD5185(m) >100 18 27 56 Chromium ppm ASTMD5185(m) >20 1 <1 1 Nickel ppm ASTMD5185(m) >4 <1 0 <1 Silver ppm ASTMD5185(m) >20 21 4 4 Lead ppm ASTMD5185(m) >20 21 4 4 Lead ppm ASTMD5185(m) >30 2 5 24 Tin ppm ASTMD5185(m) >30 2 5 24 Tin ppm ASTMD5185(m) 0 0 0 0 Capper ppm ASTMD5185(m) 0 0 0 0 Vanadium ppm ASTMD5185(m) 0 0	Fuel		WC Method	>5	<1.0	1	0.9
Glycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTMD5185(m) >100 18 27 56 Chromium ppm ASTMD5185(m) >20 1 <1 1 Nickel ppm ASTMD5185(m) >3 <1 0 <1 Aluminum ppm ASTMD5185(m) >20 21 4 4 Lead ppm ASTMD5185(m) >30 <1 1 4 Copper ppm ASTMD5185(m) >15 <1 <1 2 Antimony ppm ASTMD5185(m) 0 0 0 0 Vanadium pm ASTMD5185(m) 0 0 0 0 Vanadium pm ASTMD5185(m) 10 <1 <1 5 Motinony ppm ASTMD5185(m) 10 <1 <1	Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5165(m) >100 18 27 56 Chromium ppm ASTM D5165(m) >20 1 <1 1 Nickel ppm ASTM D5165(m) >3 <1 0 <1 Titanium ppm ASTM D5165(m) >3 <1 0 <1 Aluminum ppm ASTM D5165(m) >20 21 4 4 Lead ppm ASTM D5165(m) >20 21 4 4 Lead ppm ASTM D5165(m) >20 21 4 4 Lead ppm ASTM D5165(m) >0 0 0 0 Vanadium ppm ASTM D5165(m) 0 0 0 0 Cadmium ppm ASTM D5165(m) 0 0 0 0 Cadmium ppm ASTM D5165(m) 10 1	Glycol		WC Method		NEG	NEG	NEG
Iron ppm ASTM D5185(m) >100 18 27 56 Chromium ppm ASTM D5185(m) >20 1 <1 1 Nickel ppm ASTM D5185(m) >20 1 <1 1 Nickel ppm ASTM D5185(m) >3 <1 0 <1 Aluminum ppm ASTM D5185(m) >3 <1 0 <1 Aluminum ppm ASTM D5185(m) >20 21 4 4 Lead ppm ASTM D5185(m) >40 <1 1 4 Copper ppm ASTM D5185(m) >330 2 5 24 Tin ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 100 61	WEAR METALS		method	limit/base	current	history1	history?
Iron ppm ASIM USB8(m) >100 18 27 56 Chromium ppm ASTM D5188(m) >20 1 <1 1 Nickel ppm ASTM D5188(m) >20 1 <1 1 Nickel ppm ASTM D5188(m) >3 <1 0 <1 Aluminum ppm ASTM D5188(m) >30 <1 1 4 Lead ppm ASTM D5188(m) >40 <1 1 4 Copper ppm ASTM D5188(m) >40 <1 1 4 Chadium ppm ASTM D5188(m) >0 0 0 0 Vanadium ppm ASTM D5188(m) 0 0 0 0 Cadmium ppm ASTM D5188(m) 0 0 0 0 ADDITIVES method Imit/base current history1 history2 Boron ppm ASTM D5188(m) 10 <1			method	111100030	current		matoryz
Chromium ppm ASTM D5185(m) >20 1 <1	Iron	ppm	ASTM D5185(m)	>100	18	27	56
Nickel ppm ASTM D5185(m) >4 <1	Chromium	ppm	ASTM D5185(m)	>20	1	<1	1
Titanium ppm ASTM D5185(m) 0 0 0 Silver ppm ASTM D5185(m) >3 <1 0 <1 Aluminum ppm ASTM D5185(m) >20 21 4 4 Lead ppm ASTM D5185(m) >40 <1 1 4 Copper ppm ASTM D5185(m) >40 <1 1 4 Copper ppm ASTM D5185(m) >330 2 5 24 Tin ppm ASTM D5185(m) >15 <1 <1 2 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 100 1036 1038 <th>Nickel</th> <th>ppm</th> <th>ASTM D5185(m)</th> <th>>4</th> <th><1</th> <th>0</th> <th><1</th>	Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Silver ppm ASTM D5185(m) >3 <1	Titanium	ppm	ASTM D5185(m)		0	0	0
Aluminum ppm ASTM D5185(m) >20 21 4 4 Lead ppm ASTM D5185(m) >40 <1 1 4 Copper ppm ASTM D5185(m) >330 2 5 24 Tin ppm ASTM D5185(m) >15 <1 <1 2 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 100 61 64 62 Magnese ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 100 61<	Silver	ppm	ASTM D5185(m)	>3	<1	0	<1
Lead ppm ASTM D5185(m) >40 <1	Aluminum	ppm	ASTM D5185(m)	>20	21	4	4
Copper ppm ASTM D5185(m) >330 2 5 24 Tin ppm ASTM D5185(m) >15 <1 <1 2 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 100 61 64 62 Magnenese ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 450 987 989 531 Calcium ppm ASTM D5185(m) 1036	Lead	ppm	ASTM D5185(m)	>40	<1	1	4
Tin ppm ASTM D5185(m) >15 <1	Copper	ppm	ASTM D5185(m)	>330	2	5	24
Antimony ppm ASTM D5185(m) 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 10 <1 <1 5 Molybdenum ppm ASTM D5185(m) 100 61 64 62 Manganese ppm ASTM D5185(m) 450 987 989 531 Calcium ppm ASTM D5185(m) 450 987 989 531 Calcium ppm ASTM D5185(m) 150 1036 1038 999 Zinc ppm ASTM D5185(m) 150 1036 1038 999 Zinc ppm ASTM D5185(m) 4250 2557 2466 2599 <	Tin	ppm	ASTM D5185(m)	>15	<1	<1	2
Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 10 <1	Antimony	ppm	ASTM D5185(m)		0	0	0
Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 10 <1	Vanadium	ppm	ASTM D5185(m)		0	0	0
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 10 <1	Beryllium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 10 <1 <1 5 Molybdenum ppm ASTM D5185(m) 100 61 64 62 Manganese ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 100 61 64 62 Magnesium ppm ASTM D5185(m) 450 967 989 531 Calcium ppm ASTM D5185(m) 3000 1097 1150 1692 Phosphorus ppm ASTM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASTM D5185(m) 4250 2557 2466 2599 Lithium ppm AS	Cadmium	ppm	ASTM D5185(m)		0	0	0
Boron ppm ASTM D5185(m) 250 2 5 43 Barium ppm ASTM D5185(m) 10 <1	ADDITIVES		method	limit/base	current	history1	history2
Doron ppm ASTM D5185(m) 10 <1	Boron	nom	ASTM DE185(m)	250	0	5	42
Darkini ppm ASTM D316(m) 10 <1	Borium	ppm	AGTM D5105(III)	10	-1	-1	43
Mory Odendini ppm ASTM D5165(m) 100 61 64 62 Manganese ppm ASTM D5185(m) 450 987 989 531 Calcium ppm ASTM D5185(m) 3000 1097 1150 1692 Phosphorus ppm ASTM D5185(m) 3000 1097 1150 1692 Phosphorus ppm ASTM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASTM D5185(m) 4250 2557 2466 2599 Lithium ppm ASTM D5185(m) 4250 2557 2466 2599 Silicon ppm ASTM D5185(m) 4250 2557 2466 2599 Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot %	Maluhdanum	ppin		100	<1 61	64	60
Manuganese ppm ASIM D5165(m) 450 987 989 531 Calcium ppm ASIM D5185(m) 3000 1097 1150 1692 Phosphorus ppm ASIM D5185(m) 3000 1097 1150 1692 Phosphorus ppm ASIM D5185(m) 1150 1036 1038 999 Zinc ppm ASIM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASIM D5185(m) 4250 2557 2466 2599 Lithium ppm ASIM D5185(m) 4250 2557 2466 2599 Silicon ppm ASIM D5185(m) 4250 2557 2466 2599 Silicon ppm ASIM D5185(m) >25 6 7 28 Sodium ppm ASIM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % %<	Morgonooo	ppin	ACTM DE105(m)	100	-1	.1	02 E
Magnesum ppm ASIM D5185(m) 450 987 989 531 Calcium ppm ASTM D5185(m) 3000 1097 1150 1692 Phosphorus ppm ASTM D5185(m) 1150 1036 1038 999 Zinc ppm ASTM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASTM D5185(m) 4250 2557 2466 2599 Lithium ppm ASTM D5185(m) 4250 2557 2466 2599 Silicon ppm ASTM D5185(m) 4250 25 6 7 28 Sodium ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs	Manganese	ррп		450	<1	<1	5
Calcium ppm ASIM b5185(m) 3000 1097 1150 1692 Phosphorus ppm ASTM D5185(m) 1150 1036 1038 999 Zinc ppm ASTM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASTM D5185(m) 4250 2557 2466 2599 Lithium ppm ASTM D5185(m) 4250 current history1 history2 Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm	Magnesium	ppm		450	987	989	531
Phosphorus ppm ASIM D5185(m) 1150 1036 1038 999 Zinc ppm ASTM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASTM D5185(m) 4250 2557 2466 2599 Lithium ppm ASTM D5185(m) 4250 2557 2466 2599 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Calcium	ppm		3000	1097	1150	1692
Zinc ppm ASIM D5185(m) 1350 1241 1251 1202 Sulfur ppm ASTM D5185(m) 4250 2557 2466 2599 Lithium ppm ASTM D5185(m) 4250 2557 2466 2599 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Phosphorus	ppm	ASTM D5185(m)	1150	1036	1038	999
Sulfur ppm ASIM D5185(m) 4250 2557 2466 2599 Lithium ppm ASTM D5185(m) <1 <1 <1 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Zinc	ppm	ASTM D5185(m)	1350	1241	1251	1202
Lithium ppm ASIM D5185(m) <1	Sulfur	ppm	ASTM D5185(m)	4250	2557	2466	2599
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) >20 2 3 4 Potassium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Lithium	ppm	ASTM D5185(m)		<1	<1	<1
Silicon ppm ASTM D5185(m) >25 6 7 28 Sodium ppm ASTM D5185(m) 2 3 4 Potassium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185(m) 2 3 4 Potassium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Silicon	ppm	ASTM D5185(m)	>25	6	7	28
Potassium ppm ASTM D5185(m) >20 52 6 10 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Sodium	ppm	ASTM D5185(m)		2	3	4
INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Potassium	ppm	ASTM D5185(m)	>20	52	6	10
Soot % % ASTM D7844* >3 0.2 0.2 0.1 Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm ASTM D7624* >20 8.8 9.5 9.2 Sulfation Abs/.1mm ASTM D7415* >30 20.3 20.8 22.0	Soot %	%	ASTM D7844*	>3	0.2	0.2	0.1
Sulfation Abs/.imm ASTM D7415* >30 20.3 20.8 22.0	Nitration	Abs/cm	ASTM D7624*	>20	8.8	9.5	9.2
	Sulfation	Abs/.1mm	ASTM D7415*	>30	20.3	20.8	22.0



35

30

25 Abs/cm

10

100

100

Jan31/24

Abnormal

FT-IR (Direct Trend)

Oxidation

Vitration Sulfation

Viscosity @ 40°C

Viscosity @ 40°C

Aluminum (ppm)

E un

Abnorma

50 4(31

10

Jan31/24

OIL ANALYSIS REPORT

		Oxidation	Abs/.1mm	ASTM D7414*	>25	10.4	17.0	
					225	10.4	17.8	19.0
		VISUAL		method	limit/base	current	history1	history2
		White Metal	scalar	Visual*	NONE		NONE	
		Yellow Metal	scalar	Visual*	NONE		NONE	
		Precipitate	scalar	Visual*	NONE		NONE	
r8/24	10/24	Silt	scalar	Visual*	NONE		NONE	
Ap	Jun	Debris	scalar	Visual*	NONE		VLITE	
		Sand/Dirt	scalar	Visual*	NONE		NONE	
		Appearance	scalar	Visual*				
		Emulsified Water	scalar	Visual*		NEG	NEG	NEG
		Free Water	scalar	Visual*	20.L	NEG	NEG	NEG
		FLUID PROPERT	IES	method	limit/base	current	history1	history2
		Visc @ 40°C	cSt	ASTM D7279(m)	73	77.2		
24 -	24 +	Visc @ 100°C	cSt	ASTM D7279(m)	10.9	11.4	11.4	11.8
Apr8/	Jun 10/	Viscosity Index (VI)	Scale	ASTM D2270*	138	139		
	-	GRAPHS						
		Iron (ppm)				Lead (ppm)		
		300			100	Severe		
		200 - Severe			5.50	Abnormal		
	10	100 - Abnormal	1		dd	Abnormal		
1		0	***		0			
		n31/24	pr8/24		n10/24	n31/24	pr8/24	
+ +	V		4		Πηγ	lai (4	
Apr8/2	10.	Aluminum (ppm)			60	Chromium (pp	om)	
	-	40 Severe				Severe		
		Abnormal			udd as	Abnormal		
		20 - 0			20	+ 0		
		74 to 0	/24 -			74	/24	e E
		Jan 31	Apr8		Jun10	Jan 31	Apr8	-
		Copper (ppm)				Silicon (ppm)		
		400 Severe			80	Severe		
4	E	300			======================================] •		
4pr8/2.	c. ut	100-			20	Abnormal		
	-	0						
		1/24	pr8/24		10/24	1/24	pr8/24	
			<		Jur	[™]	Ř	
		¹⁴ T	•		6.0	300L %		
	ŝ	Q 12				Severe		
		Base			Soot %	Abnormal		
	c	3 10 Abnormal			2.0			
		⁵⁴ + ²	- 724 -		+ 0.0	724	/24	e C
		Jan 31.	Aprô,		Jun 10	Jan 31,	Apr8,	, ,

Accredited Laboratory Unique Number : 5800015 Diagnosed : 18 Jun 2024 - Wes Davis Test Package : MOB 1 (Additional Tests: KV40, VI, Visual) To discuss this sample report, contact Customer Service at 1-800-268-2131. tspence@manitoulintransport.com Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

Report Id: MANMIS [WCAMIS] 02642476 (Generated: 06/18/2024 13:38:16) Rev: 1

F: (905)564-6361 Contact/Location: Travis Spence - MANMIS

Page 2 of 2

T:

CA L4W 1C4

Contact: Travis Spence