

## **OIL ANALYSIS REPORT**

Sample Rating Trend





#### 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.

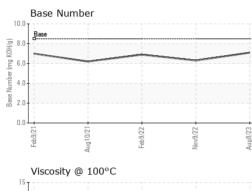
### Fluid Condition

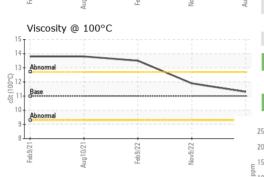
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		IL0027465	IL0027714	IL0020115
Sample Date		Client Info		08 Aug 2023	09 Nov 2022	09 Feb 2022
Machine Age	mls	Client Info		65758	54888	37789
Oil Age	mls	Client Info		10870	17099	11359
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	20	32	21
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	22	42	41
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	7	2	3
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Antimony	ppm	ASTM D5185m				<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 269	current 107	history1 78	history2 90
	ppm ppm					
Boron		ASTM D5185m		107	78	90
Boron Barium	ppm	ASTM D5185m ASTM D5185m	269	107 0	78 0	90 0 52 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	269 0 20	107 0 34 <1 227	78 0 15 <1 35	90 0 52
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	269 0	107 0 34 <1 227 2055	78 0 15 <1 35 2157	90 0 52 <1 46 2276
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	269 0 20 1521 948	107 0 34 <1 227 2055 1020	78 0 15 <1 35 2157 905	90 0 52 <1 46 2276 1004
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	269 0 20 1521 948	107 0 34 <1 227 2055 1020 1253	78 0 15 <1 35 2157 905 1146	90 0 52 <1 46 2276 1004 1200
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	269 0 20 1521 948 893	107 0 34 <1 227 2055 1020	78 0 15 <1 35 2157 905	90 0 52 <1 46 2276 1004 1200 3086
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	269 0 20 1521 948	107 0 34 <1 227 2055 1020 1253	78 0 15 <1 35 2157 905 1146	90 0 52 <1 46 2276 1004 1200
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	269 0 20 1521 948 893	107 0 34 <1 227 2055 1020 1253 4013 current 5	78 0 15 <1 35 2157 905 1146 3751 history1 8	90 0 52 <1 46 2276 1004 1200 3086 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	269 0 20 1521 948 893	107 0 34 <1 227 2055 1020 1253 4013 current 5 2	78 0 15 <1 35 2157 905 1146 3751 history1 8 2	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	269 0 20 1521 948 893	107 0 34 <1 227 2055 1020 1253 4013 current 5	78 0 15 <1 35 2157 905 1146 3751 history1 8	90 0 52 <1 46 2276 1004 1200 3086 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	269 0 20 1521 948 893 imit/base >25	107 0 34 <1 227 2055 1020 1253 4013 <b>current</b> 5 2 36 <b>current</b>	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 86 history1	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 87 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	269 0 20 1521 948 893 imit/base >25 >20	107 0 34 <1 227 2055 1020 1253 4013 <u>current</u> 5 2 36 <u>current</u> 0.4	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 history1 0.6	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 87 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	269 0 20 1521 948 893 893 <b>limit/base</b> >25 >20	107 0 34 <1 227 2055 1020 1253 4013 current 5 2 36 current 0.4 9.8	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 <u>history1</u> 0.6 12.4	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 2 87 history2 0.4 11.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	269 0 20 1521 948 893 893 imit/base >25 >20 imit/base >20	107 0 34 <1 227 2055 1020 1253 4013 <u>current</u> 5 2 36 <u>current</u> 0.4	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 history1 0.6	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 87 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	269 0 20 1521 948 893 893 imit/base >25 >20 imit/base >20	107 0 34 <1 227 2055 1020 1253 4013 current 5 2 36 current 0.4 9.8	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 <u>history1</u> 0.6 12.4	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 2 87 history2 0.4 11.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	269 0 10 1521 948 893 893 <b>imit/base</b> >25 >20 <b>imit/base</b> >6 >20 >20	107 0 34 <1 227 2055 1020 1253 4013 <b>current</b> 5 2 36 <b>current</b> 0.4 9.8 22.0	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 history1 0.6 12.4 27.5	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 <u>history2</u> 0.4 11.2 22.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	269 0 1521 948 893 1imit/base >25 20 20 1imit/base >6 >20 30	107 0 34 <1 227 2055 1020 1253 4013 <i>current</i> 5 2 36 <i>current</i> 0.4 9.8 22.0 <i>current</i>	78 0 15 <1 35 2157 905 1146 3751 history1 8 2 86 2 86 history1 0.6 12.4 27.5 history1	90 0 52 <1 46 2276 1004 1200 3086 history2 9 2 87 9 2 87 history2 0.4 11.2 22.6 history2



# **OIL ANALYSIS REPORT**





NONE NONE \*Visual NONE NONE White Metal scalar NONE NONE NONE NONE Yellow Metal scalar \*Visual Precipitate scalar \*Visual NONE NONE NONE NONE Silt scalar \*Visual NONE NONE NONE NONE NONE Debris \*Visual NONE NONE NONE scalar NONE Sand/Dirt scalar \*Visual NONE NONE NONE NORML Appearance \*Visual NORML NORML NORML scalar \*Visual NORML NORML NORML NORML Odor scalar **Emulsified Water** scalar \*Visual >0.2 NEG NEG NEG Free Water scalar \*Visual NEG NEG NEG FLUID PROPERTIES Visc @ 100°C cSt ASTM D445 11.0 11.3 11.9 13.5 GRAPHS Lead (ppm) Iron (ppm) 100 200 80 150 60 ppm Abnorma 100 40 50 20 Feb 9/22 Jov9/22 Feb 9/22 Jov9/22 Feb 9/21 eb 9/2 Aluminum (ppm) Chromium (ppm) 50 5 40 40 30 30 10 0 0 Aug8/23 ua10/71 Feb 9/22 Jov9/22 ua10/2 Feb 9/22 Jov9/22 Feb 9/ Copper (ppm) Silicon (ppm) 400 80 S 300 60 la 200 ۲,40 100 20 0 eb9/22 ov9/22 Feb 9/22 ov9/22 ug8/23 eb9 eb9 Viscosity @ 100°C Base Number 16 10. (mg KOH/g) 8. (100°C) 6. mber Base 4.0 , ts Base Nu Abnorma 2.0 0.0 8 Aug8/23 -Feb9/22 lov9/22 lov9/22 Feb 9/21 Aug 10/21 Feb 9/22 Aug10/21 C/64a **IDEALEASE OF NORTHWEST WI** : WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 22 Aug 2023 611 HANSEN ROAD : IL0027465 Received : 05930634 Diagnosed : 23 Aug 2023 GREEN BAY, WI : Sean Felton US 54304 Unique Number : 10615905 Diagnostician Test Package : MOB1+ Contact: GARY KOLTZ To discuss this sample report, contact Customer Service at 1-800-237-1369. gkoltz@pcitrucks.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (920)499-6200

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

Certificate L2367

Laboratory

Sample No.

Lab Number

Contact/Location: GARY KOLTZ - IDEGREWI

F: (920)499-5332