

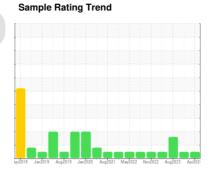
OIL ANALYSIS REPORT



K5 CONSTRUCTION CORPORATION - HODGKINS IL

1118 **Diesel Engine**

LEAHY WOLF PREMIUM 15W40 (3 hrs)





DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

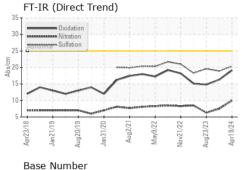
Fluid Condition

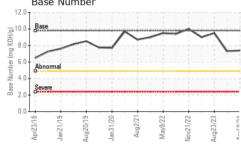
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

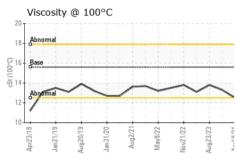
Sample Date Client Info 19 Apr 2024 11 Dec 2023 23 Aug 2023 Machine Age hrs Client Info 4965 4719 4427 Oil Age hrs Client Info 4673 292 4164 Oil Changed Client Info Changed NorMAL ABNORMAL CONTAMINATION method Imit/base current history1 history2 Fuel WC Method >2.1 <1.0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 4965 4719 4427 Oil Age hrs Client Info 4673 292 4164 Oil Oil Changed Client Info Changed Not Changd Changed Sample Status NoRMAL NORMAL NORMAL ABNORMAL CONTAMINATION method Imitibase current history1 history2 Fuel WC Method >2.1 <1.0	Sample Number		Client Info		PCA0122074	LW0008341	LW0007700
Oil Age hrs Client Info 4673 292 4164 Oil Changed Sample Status Client Info Changed Changed Not Changed Not Changed ABNORMAL Not Changed Changed NormAL ABNORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >2.1 <1.0	Sample Date		Client Info		19 Apr 2024	11 Dec 2023	23 Aug 2023
Oil Changed Sample Status Client Info Changed NORMAL Not Changed ABNORMAL Changed ABNORMAL Changed ABNORMAL ABSOR ABC ABL ABL ABL	Machine Age	hrs	Client Info		4965	4719	4427
CONTAMINATION	Oil Age	hrs	Client Info		4673	292	4164
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >2.1 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		Changed	Not Changd	Changed
Fuel	Sample Status				NORMAL	NORMAL	ABNORMAL
Water WC Method >0.21 NEG NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >51 13 9 12 Chromium ppm ASTM D5185m >51 0 <1 <1 Nickel ppm ASTM D5185m >55 0 <1 <1 Silver ppm ASTM D5185m >30 0 0 0 Silver ppm ASTM D5185m >31 3 2 5 Silver ppm ASTM D5185m >31 3 2 5 Silver ppm ASTM D5185m >31 3 2 5 Lead ppm ASTM D5185m >26 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.21	NEG	NEG	NEG
Pron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >11 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>51	13	9	12
Titanium	Chromium	ppm	ASTM D5185m	>11	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	<1	0
Aluminum ppm ASTM D5185m >31 3 2 5 Lead ppm ASTM D5185m >26 0 <1	Titanium	ppm	ASTM D5185m		0	<1	<1
Aluminum ppm ASTM D5185m >31 3 2 5 Lead ppm ASTM D5185m >26 0 <1 <1 Copper ppm ASTM D5185m >26 2 1 2 Tin ppm ASTM D5185m >4 <1 <1 <1 Vanadium ppm ASTM D5185m 0 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 30 38 323 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 84 85 256 Manganesium ppm ASTM D5185m 1107 1038 1522 Phosphorus ppm ASTM D5185m 943 930 948 Zinc ppm	Silver		ASTM D5185m	>3	0	0	0
Lead ppm ASTM D5185m >26 0 <1 <1 Copper ppm ASTM D5185m >26 2 1 2 Tin ppm ASTM D5185m >4 <1 <1 <1 Vanadium ppm ASTM D5185m 0 0 <1 <1 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 30 38 323 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 84 85 256 Manganese ppm ASTM D5185m 41 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Aluminum	ppm	ASTM D5185m	>31	3	2	5
Copper ppm ASTM D5185m >26 2 1 2 Tin ppm ASTM D5185m >4 <1	Lead			>26	0	<1	<1
Tin ppm ASTM D5185m >4 <1 <1 <1 <1 <1	Copper	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	>26	2	1	2
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Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 30 38 323 Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 84 85 256 Manganese ppm ASTM D5185m <1		• • • • • • • • • • • • • • • • • • • •					
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Barium ppm ASTM D5185m 0 12 0 Molybdenum ppm ASTM D5185m 84 85 256 Manganese ppm ASTM D5185m <1	ADDITIVES		method	limit/base	current	history1	history2
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Molybdenum ppm ASTM D5185m 84 85 256 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 883 866 886 Calcium ppm ASTM D5185m 1107 1038 1522 Phosphorus ppm ASTM D5185m 943 930 948 Zinc ppm ASTM D5185m 943 930 948 Zinc ppm ASTM D5185m 3123 3225 3833 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 16 14 △ 28 Sodium ppm ASTM D5185m >31 0 0 2 2 Potassium ppm ASTM D5185m >20 0 3 2 INFRA-RED method limit/base current history1 history2 Soot %<	Barium		ASTM D5185m		0	12	0
Manganese ppm ASTM D5185m <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 <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 <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 <th>Molybdenum</th> <td></td> <td>ASTM D5185m</td> <td></td> <th>84</th> <td>85</td> <td>256</td>	Molybdenum		ASTM D5185m		84	85	256
Magnesium ppm ASTM D5185m 883 866 886 Calcium ppm ASTM D5185m 1107 1038 1522 Phosphorus ppm ASTM D5185m 943 930 948 Zinc ppm ASTM D5185m 1139 1123 1111 Sulfur ppm ASTM D5185m 3123 3225 3833 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 16 14 ▲ 28 Sodium ppm ASTM D5185m >31 0 0 2 Potassium ppm ASTM D5185m >20 0 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3	,	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m		<1		
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Phosphorus ppm ASTM D5185m 943 930 948 Zinc ppm ASTM D5185m 1139 1123 1111 Sulfur ppm ASTM D5185m 3123 3225 3833 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 16 14 28 Sodium ppm ASTM D5185m >31 0 0 2 Potassium ppm ASTM D5185m >20 0 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current	Calcium		ASTM D5185m		1107	1038	1522
Zinc ppm ASTM D5185m 1139 1123 1111 Sulfur ppm ASTM D5185m 3123 3225 3833 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >22 16 14 ▲ 28 Sodium ppm ASTM D5185m >31 0 0 2 Potassium ppm ASTM D5185m >20 0 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414					943		
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Potassium ppm ASTM D5185m >20 0 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	Silicon	ppm	ASTM D5185m	>22	16	14	<u>^</u> 28
Potassium ppm ASTM D5185m >20 0 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	Sodium	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	>31		0	2
Soot % % *ASTM D7844 >3 0.4 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	Potassium	ppm	ASTM D5185m	>20	0	3	2
Nitration Abs/cm *ASTM D7624 >20 10.0 7.5 6.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	Soot %	%	*ASTM D7844	>3	0.4	0.2	0.1
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.9 19.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	Nitration	Abs/cm	*ASTM D7624	>20	10.0	7.5	6.3
Oxidation Abs/.1mm *ASTM D7414 >25 19.1 16.3 14.8	Sulfation		*ASTM D7415	>30			
	FLUID DEGRAD	NOITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.1	16.3	14.8
	Base Number (BN)						



OIL ANALYSIS REPORT





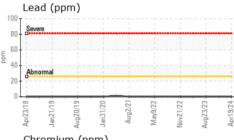


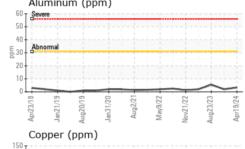
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.21	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

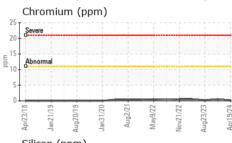
FLUID PROPE	FLUID PROPERTIES Method			ilmit/base current history i		nistory2
Visc @ 100°C	cSt	ASTM D445	15.6	12.5	13.3	13.8

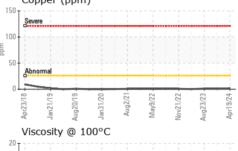
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							re	Seve
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								100
				<u> </u>			ormal	50 - Abno
4		2 +	22	21+	0;	6	-6	0
Apr19/24	Aug23/23	Nov21/2	May9/2	Aug2/2	Jan31/2	Aug20/19	Jan21/19	Apr23/18
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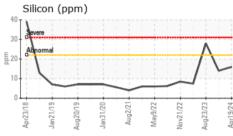
GRAPHS

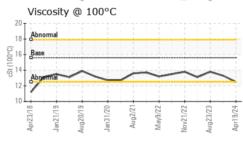


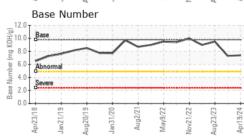
















Certificate 12367

Laboratory Sample No.

: PCA0122074 Lab Number : 06158925 Unique Number : 10994348

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received **Tested** Diagnosed

: 24 Apr 2024 : 25 Apr 2024 : 25 Apr 2024 - Wes Davis

6301 S EAST AVENUE HODGKINS, IL

K5 CONSTRUCTION CORPORATION

US 60525 Contact: Dave Gorski daveg@k-five.net T: (630)257-5600

Test Package : MOB 1 (Additional Tests: TBN) 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.

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

Report Id: K5CWES [WUSCAR] 06158925 (Generated: 04/25/2024 11:17:57) Rev: 1

Submitted By: NOELLE TERRAULT

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