



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id
JOHN DEERE E-55
 Component
Hydraulic System
 Fluid
HITACHI HYDRAULIC SUPER EX 46HN (63 GAL)

RECOMMENDATION

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0049429	LEC0026601	LEC0003412
Sample Date		Client Info		08 May 2024	03 Oct 2022	30 Sep 2019
Machine Age	hrs	Client Info		5077	3683	1080
Oil Age	hrs	Client Info		5077	3683	1080
Filter Age	hrs	Client Info		600	3683	1080
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Not Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ		ASTM D8184	>50	16	9	10
Iron	ppm	ASTM D5185m	>32	12	7	4
Chromium	ppm	ASTM D5185m	>9	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>9	<1	1	<1
Lead	ppm	ASTM D5185m	>28	0	<1	1
Copper	ppm	ASTM D5185m	>50	6	6	9
Tin	ppm	ASTM D5185m	>5	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

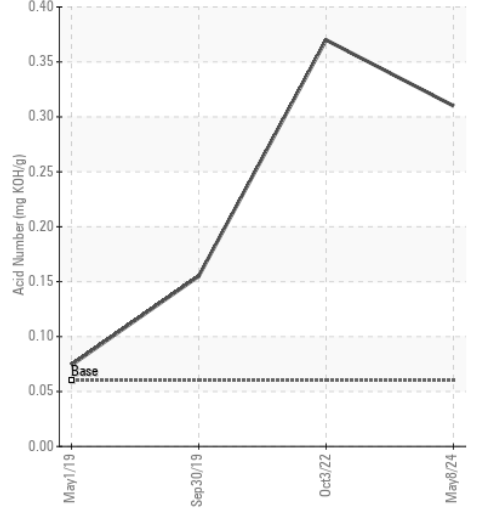
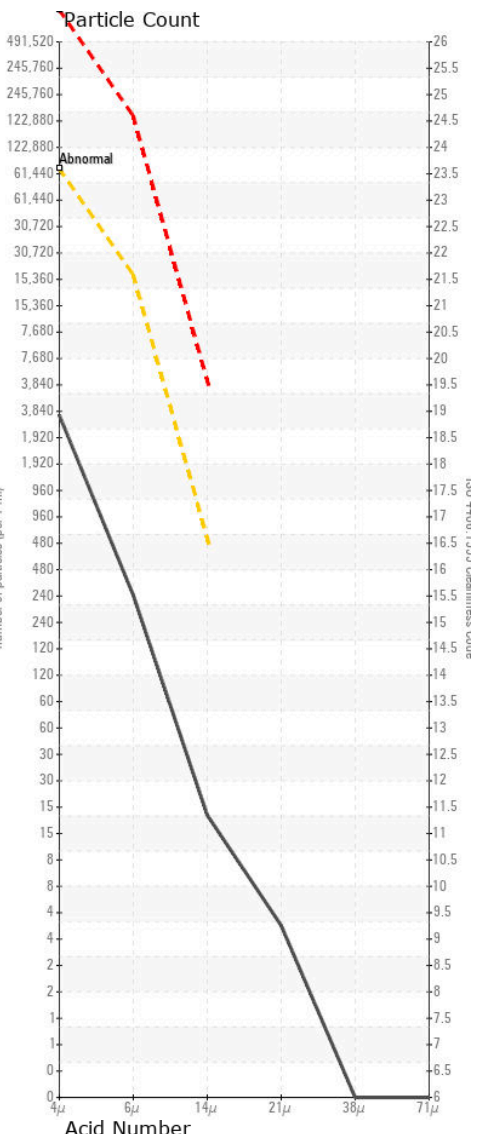
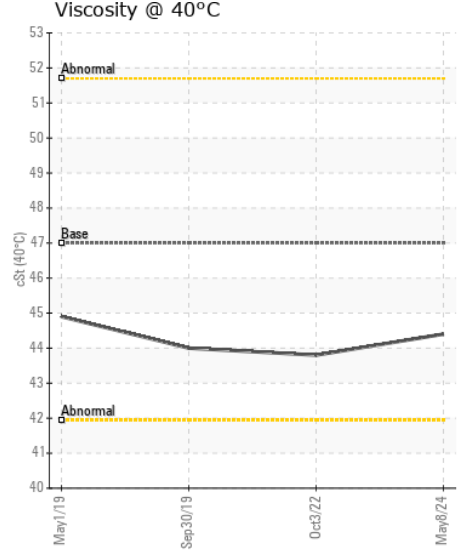
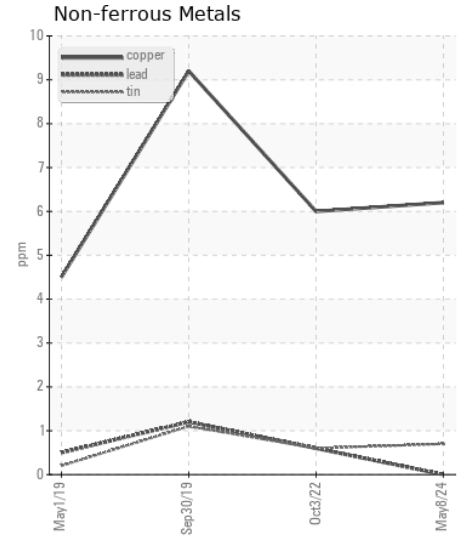
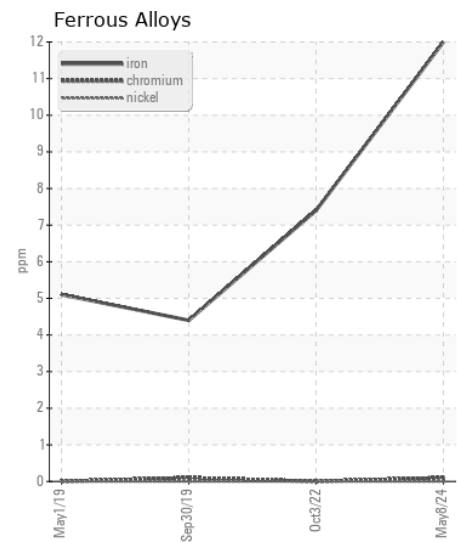
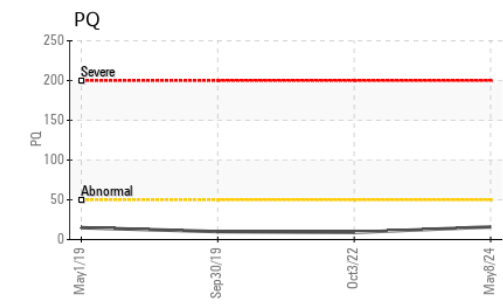
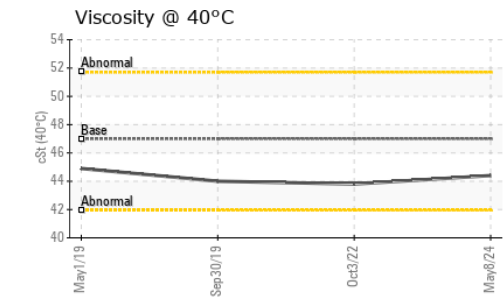
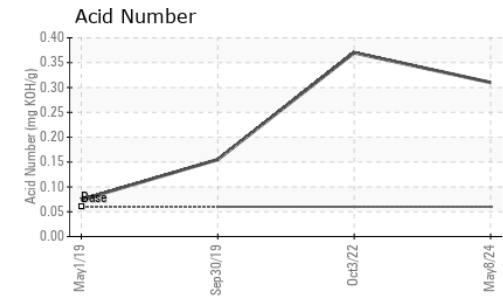
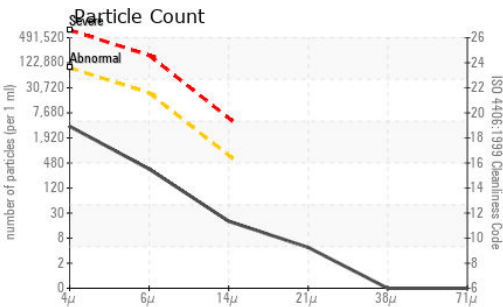
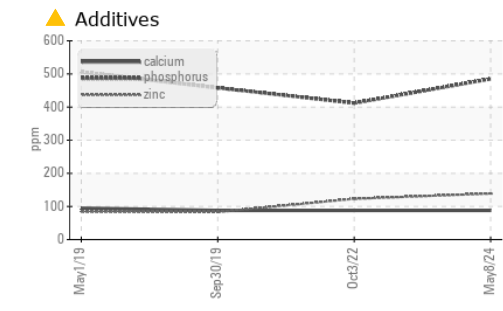
The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>11	3	3	3
Potassium	ppm	ASTM D5185m	>20	<1	2	2
Water		WC Method	>0.075	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>80000	3184	7527	11958
Particles >6µm		ASTM D7647	>20000	302	2021	933
Particles >14µm		ASTM D7647	>640	17	346	22
Particles >21µm		ASTM D7647	>160	4	102	8
Particles >38µm		ASTM D7647	>40	0	3	1
Particles >71µm		ASTM D7647	>10	0	0	1
Oil Cleanliness		ISO 4406 (c)	>23/21/16	19/15/11	20/18/16	21/17/12
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT	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	>0.075	NEG	NEG	NEG

FLUID CONDITION

Zinc level above manufacturer's recommendations. The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m	>21	2	0	<1
Boron	ppm	ASTM D5185m		0	2	3
Barium	ppm	ASTM D5185m		1	0	0
Molybdenum	ppm	ASTM D5185m		0	2	2
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		19	16	16
Calcium	ppm	ASTM D5185m		88	88	88
Phosphorus	ppm	ASTM D5185m	827	485	412	458
Zinc	ppm	ASTM D5185m	0	▲ 139	▲ 123	83
Sulfur	ppm	ASTM D5185m	13	459	592	344
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	0.31	0.37	0.155
Visc @ 40°C	cSt	ASTM D445	47	44.4	43.8	44.0



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0049429 **Received** : 14 May 2024
Lab Number : 06178594 **Tested** : 15 May 2024
Unique Number : 11029920 **Diagnosed** : 16 May 2024 - Don Baldrige
Test Package : CONST (Additional Tests: PQ)

APEX PIPELINE
 P.O. BOX 580
 NITRO, WV
 US 25143
 Contact: KELLY TUCKER

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

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