

RITCHEE EQUIPMENT, INC.
PAUL BARNETTE
P.O. BOX 1588
PRINCETON, WV 24740

FAX: 304-325-6525
 PHONE: 304-325-6525
SAMPLE TYPE: OIL
 SAMPLE SHIP TIME (day): 6

COMPANY NAME: RITCHEE EQUIPMENT, INC.
 CUSTOMER EQUIP NUM: 3034
 COMPARTMENT NAME: ENGINE
 SERIAL NUMBER: JRP02607
 MANUFACTURER: CATERPILLAR
 MODEL: 777F
 JOB SITE:
 EXT WARR NUMBER:
 SHOP JOB NUM:
 COMP SERIAL NUM:
 COMPARTMENT MODEL:
 COMP MANUFACTURER:
 SAMPLE LABEL NUM:
 FLUID BRAND/WEIGHT: 15W-40
 FLUID TYPE:
 EXT WARR EXPIRE DATE:
 FUEL CONSUMED:



Caterpillar
 Fluids Analysis Laboratory
 1330 Lynchburg Turnpike
 Salem, VA 24153-5457
 540-387-1111
 www.caterpillarmachinery.com

LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-49183-0215	26-Jun-2019	02-Jul-2019	36866 HR	0	Yes			
No Action Required NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-48324-0221	12-Nov-2018	20-Nov-2018	0	0	No			
No Action Required NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-48056-0721	25-Feb-2018	28-Feb-2018	20796 HR		No			
No Action Required NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-48037-0719	02-Feb-2018	06-Feb-2018	20613 HR	250 HR	Yes			
Action Required LEAD IS CRITICAL. IRON IS ELEVATED. VISCOSITY IS LOW FOR INDICATED. 15W-40 WEIGHT OIL. 1.35% FUEL DILUTION BY VOLUME IN OIL. AN ACCEPTABLE LEVEL. CHECK POSSIBLE SOURCES OF CONTAMINATION. RESAMPLE IN 50 HOURS TO MONITOR.								

Wear Metals (ppm)

	Cu	Fe	Cr	Al	Pb	Sn	Si	Na	K	B	Mo	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-49183-0215	2	10	1	7	0	3	7	4	0	7	58	0	0	0	2	1165	888	1272	1078
D100-48324-0221	8	18	0	3	3	0	5	8	0	63	0	0	0	1	1	1325	805	1125	881
D100-48056-0721	5	14	0	1	3	0	3	3	0	141	1	0	0	1	2	1555	899	1227	1181
D100-48037-0719	29	80	1	2	23	4	6	3	1	23	1	0	0	2	1	1370	473	1018	888

Oil Condition / Particle Count (c/ml)

	ST	OXI	NIT	SUL	W	A	F	PFC	V100	POL
D100-49183-0215	8	18	9	28	N	N	N		12.1	0
D100-48324-0221	8	14	10	25	N	N	N		12.0	29
D100-48056-0721	3	12	7	20	N	N	N		13.4	35
D100-48037-0719	41	22	11	28	N	N	N	1.35	10.0	28

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antineasa, F = Fuel, W = Water, P = Positive, N = Negative, T = Trace, E = Excess, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, POL = Particle Quantifying Index, NaW = Salt Water, FI = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

Notice: This analyte is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

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COMPANY NAME: FLUID ANALYSIS LAB
 SHOP JOB NUM: 3024
 CUSTOMER EQUIP NUM: 3024
 COMP SERIAL NUM:
 COMPARTMENT NAME: RADIATOR
 COMPARTMENT MODEL:
 SERIAL NUMBER: JRP02807
 COMP MANUFACTURER:
 MANUFACTURER: CATERPILLAR
 SAMPLE LABEL NUM:
 FLUID BRAND/WEIGHT:
 MODEL: 777F
 FLUID TYPE:
 EXT WARR NUMBER:
 EXT WARR EXPIRE DATE:
 FUEL CONSUMED:

LAB CONTROL NUMBER: D100-48324-1026
 SAMPLE DATE: 12-Nov-2018
 PROCESS DATE: 20-Nov-2018
 EQUIPMENT METER: 0
 METER ON FLUID: 0
 FLUID CHANGED: No
 MAKE UP FLUID: MAKE UP FLUID UNITS

No Action Required
 UNKNOWN EQUIPMENT OR FLUID HOURS. UNKNOWN FLUID TYPE. ALL TESTS APPEAR NORMAL FOR THIS COOLANT. SAMPLE AGAIN AT REGULAR INTERVAL TO MONITOR THE COOLING SYSTEM.

D100-47067-1004
 15-Feb-2017
 08-Mar-2017
 14633 HR
 14633 HR
 Unknown

Monitor Compartment
 LEVEL 1 ANALYSIS. SAMPLE APPEARS SLIGHTLY CLOUDY. ALL OTHER TEST RESULTS APPEAR NORMAL. CLOUDY APPEARANCE POSSIBLY DUE TO POOR QUALITY MAKE UP (SOURCE) WATER BEING ADDED TO THE COOLANT. CHECK THE QUALITY OF THE SOURCE WATER, DRAIN COOLANT, CLEAN SYSTEM WITH CAT CLEANER, FLUSH 3-4 TIMES WITH WATER AND REFILL WITH EXTENDED LIFE COOLANT PREMIX. SAMPLE AGAIN AT THE REGULAR INTERVAL TO MONITOR THE COOLING SYSTEM.

No Action Required
 LEVEL 1 ANALYSIS. ALL TEST RESULTS ARE NORMAL. SAMPLE AGAIN AT THE REGULAR INTERVAL TO MONITOR THE COOLING SYSTEM.

Oil#	Al	Cu	Fe	Pb	K	Na	Ba	Zn	CaC	MgC	TH	MoO4	SiO3	BO3	PO4	BP	FP	QL	pH	CON
D100-48324-1026	0	2	0	0	149	1730	0	1	1	4	5	228	57	951	188	107	-36	49	8.3	2441
D100-47067-1004																107	-37	50	7.7	3707
D100-45323-2010																106	-30	44	8.2	3817

Data	NO2	Odor	Color	App	Foam	Oil	Paint
D100-48324-1026	1686	norm	magnetic	clear	norm	none	none
D100-47067-1004	359	norm	red	aldehyd	norm	none	none
D100-45323-2010	815	norm	red	clear	norm	none	none

Al = Aluminum, Cu = Copper, Fe = Iron, K = Potassium, Na = Sodium, Pb = Lead, Sr = Tin, V = Vanadium, Zn = Zinc, BO3 = Borate, CaC = Ca as CaCO3, MgC = Mg as CaCO3, MoO4 = Molybdate, PO4 = Phosphate, SiO3 = Silicate, TH = Total Hardness, CL = Chloride, CO3 = Carbonate, GLC = Glycolate, NO2 = Nitrite, NO3 = Nitrate, PO4 = Phosphate, SAC = Sulfate, SO4 = Sulfate, TT = Total TDS, BP = Boil Point(°C), FP = Freeze Point(°C), GL = Glycol, CON = Conductivity, App = Appearance, Paint = Precipitate Amount, PApp = Precipitate Appearance, PCol = Precipitate Color, PProp = Precipitate Property, CType = Coolant Type
 Notes: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

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COMPANY NAME: FLUID ANALYSIS LAB
 CUSTOMER EQUIP NUM: 3034
 COMPARTMENT NAME: TRANSMISSION POWERS SHIFT
 SERIAL NUMBER: JRP02807
 MANUFACTURER: CATERPILLAR
 MODEL: 777F
 JOB SITE:
 EXT WARR NUMBER:
 SHOP JOB NUM:
 COMP SERIAL NUM:
 COMPARTMENT MODEL:
 COMP MANUFACTURER:
 SAMPLE LABEL NUM:
 FLUID BRAND/WEIGHT:
 FLUID TYPE:
 EXT WARR EXPIRE DATE:
 FUEL CONSUMED:

LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-48324-0212	12-Nov-2018	20-Nov-2018	0	0	No			

Monitor Compartment
 ISO PARTICLE COUNT READING EXCEEDS RECOMMENDED CLEANNESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. CONTINUE NORMALLY SCHEDULED SAMPLING.

D100-48037-0708	02-Feb-2018	06-Feb-2018	20613 HR	2000 HR	Yes			
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No Action Required
 NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

D100-45323-0425	18-Nov-2015	19-Nov-2015	20452 HR	18202 HR	No			
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No Action Required
 NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.

Wear Metals (ppm)	Element																		
	Cu	Fe	Cr	Al	Pb	Sn	Si	Na	K	B	Mn	Ag	Ti	V	Ca	Mg	Zn	P	
D100-48324-0212	8	11	1	8	0	1	18	5	0	13	1	3	0	1	0	2388	85	1122	822
D100-48037-0708	0	7	0	2	0	0	11	2	0	38	1	0	0	3	1	2418	215	1208	1065
D100-45323-0425	10	4	0	1	1	0	3	8	0	0	2	0	0	0	0	2728	81	1188	1008

Oil Feedrate (gallon/gross/gal)	Oil Feedrate																
	ST	OXI	NIT	SUL	W	A	V100	POI	180	4μ	8μ	10μ	14μ	18μ	21μ	30μ	
D100-48324-0212	0	5	8	18	N	N	8.0	37	2221/16	30957	10003	2133	607	319	228	41	14
D100-48037-0708	0	8	5	15	N	N	8.8	21	2220/14	22251	5438	804	119	73	58	24	18
D100-45323-0425	0	6	7	21	N	N	11.8	38	1818/14	1882	659	182	108	87	81	44	31

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antifreeze, F = Fuel, W = Water, P = Position, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Seal, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, POI = Particle Counting Index, NAW = Salt Water, FL PR = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

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COMPANY NAME : FLUID ANALYSIS LAB
 CUSTOMER EQUIP NUM : 3034
 DEPARTMENT NAME : HYDRAULIC SYSTEM
 SERIAL NUMBER : JRP02607
 MANUFACTURER : CATERPILLAR
 MODEL : 777E
 JOB SITE :
 EXT WARR NUMBER :
 SHEP JOB NUM :
 COMP SERIAL NUM :
 COMPARTMENT MODEL :
 COMP MANUFACTURER :
 SAMPLE LABEL NUM :
 FLUID BRAND/WEIGHT : 10
 FLUID TYPE :
 EXT WARR EXPIRE DATE :
 FUEL CONSUMED :



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LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAXX UP FLUID	MAXX UP FLUID UNITS	FILTER CHANGED
D100-48324-0202	01-Jan-2018	20-Nov-2018	0	0	Unknown			
<div style="border: 1px solid green; padding: 2px; display: inline-block;">No Action Required</div> NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-45323-0403	18-Nov-2015	19-Nov-2015	20452 HR	18202 HR	No			
<div style="border: 1px solid green; padding: 2px; display: inline-block;">No Action Required</div> NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.								

Wear Metals (ppm)	Cu	Fa	Cr	Al	Pb	Sn	Si	Na	K	B	Mo	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-48324-0202	0	11	1	9	0	0	18	5	0	11	1	2	0	1	0	2358	62	1106	820
D100-45323-0403	0	5	1	2	0	0	8	3	0	2	2	4	1			2839	58	1264	1057

Oil Elements / Particle Count (Cells)	ST	OXI	NIT	SUL	W	A	V100	POL	180	4µ	6µ	10µ	14µ	16µ	21µ	26µ	39µ
D100-48324-0202	0	5	0	18	N	N	8.1	26	221813	22627	2132	224	50	27	20	4	2
D100-45323-0403	0	5	0	21	N	N	7.7	27	101715	2869	914	323	174	155	129	61	41

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antimony, F = Fuel, W = Water, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, POL = Particle Quantifying Index, NAV = Soot Value, FL, PL = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher Result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator
 Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

COMPANY NAME : FLUID ANALYSIS LAB
 CUSTOMER EQUIP NUM : 3034
 COMPARTMENT NAME : STEERING SYSTEM
 SERIAL NUMBER : JRP02807
 MANUFACTURER : CATERPILLAR
 MODEL : 777F
 JOB SITE :
 EXT WARR NUMBER :
 SHOP JOB NUM :
 COMP SERIAL NUM :
 COMPARTMENT MODEL :
 COMP MANUFACTURER :
 SAMPLE LABEL NUM :
 FLUID BRAND/WEIGHT : 10
 FLUID TYPE :
 EXT WARR EXPIRE DATE :
 FUEL CONSUMED :



Fluids Analysis Laboratory
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 640-387-1111
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LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-48324-0210	01-Jan-2018	20-Nov-2018	0	0	Unknown			
<p>Monitor Compartment SILICON (TYPICALLY DIRTY) LEVEL APPEARS HIGH. ISO PARTICLE COUNT READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. INSPECT FOR SOURCE OF DIRT ENTRY INTO THE SYSTEM. CHECK POSSIBLE SOURCES OF CONTAMINATION. RESAMPLE IN 125 HOURS TO MONITOR.</p>								
D100-45323-0401	18-Nov-2015	19-Nov-2015	20452 HR	20452 HR	No			
<p>No Action Required NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.</p>								

D100-43119-0210 06-Mar-2013 29-Apr-2013 3597 HR 3597 HR Unknown
 Monitor Compartment
 LPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. CONTINUE NORMALLY SCHEDULED SAMPLING.

Wear Metals (ppm)	Cu	Fe	Cr	Al	Pb	Ba	Sn	Mn	K	B	Mo	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-44324-0210	11	22	2	28	0	1	49	8	8	12	1	1	0	2	0	2440	86	1139	836
D100-45323-0401	3	13	2	8	1	1	15	4	2	4	3	0	2			1347	500	1235	1059
D100-43119-0210	1	5	0	5	1	0	11	3	1	1	0	0	0			1121	456	1249	1073

ST	OXI	NIT	SHL	W	A	V100	PHI	180	4µ	6µ	10µ	14µ	18µ	21µ	28µ	50µ
D100-48324-0210	0	5	6	10	N	6.1	28	2221/18	33596	12530	2357	422	241	175	36	16
D100-45323-0401	0	5	6	17	N	7.8	31	2016/12	6882	563	125	35	21	17	8	6
D100-43119-0210	0	5	5	15	N	7.7	35	2221/17	31404	10742	1887	845	634	435	28	9

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antineutron, F = Fuel, W = Water, P = Positive, N = Negative, T = Trace, E = Excession, NIT = Nitration, OXI = Oxidation, ST = Soul, SHL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PHI = Particle Quantifying Index, NAV = Salt Water, FL P = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PV = Particle Volume Indicator

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 540-387-1111
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COMPANY NAME : FLUID ANALYSIS LAB
 CUSTOMER EQUIP NUM : 3034
 SERIAL NUMBER : JRP02807
 MANUFACTURER : CATERPILLAR
 MODEL : 777F
 JOB SITE :
 EXT WARR NUMBER :
 SHOP JOB NUM :
 COMP SERIAL NUM :
 COMPARTMENT MODEL :
 COMP MANUFACTURER :
 SAMPLE LABEL NUM :
 FLUID BRAND/WEIGHT :
 FLUID TYPE :
 EXT WARR EXPRD DATE :
 FUEL CONSUMED :

LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-48324-0228	12-Nov-2018	20-Nov-2018	0	0	No			
No Action Required								
NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-45323-0453	18-Nov-2015	18-Nov-2015	20462 HR	18202 HR	No			
No Action Required								
NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.								

Wear Metals (ppm)	Cu	Fa	Cr	Al	Pb	Sn	Si	Mn	K	B	Mo	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-48324-0228	0	61	0	2	1	1	5	5	0	5	1	0	0	0	0	2117	11	821	680
D100-45323-0453	4	64	1	4	1	0	11	3	1	2	0	0	0	0	2458	9	976	835	

Particle Count (count)	W	V100	P01	180	4µ	6µ	10µ	14µ	18µ	21µ	30µ	50µ
D100-48324-0228	N	16.4	64	NORMAL								
D100-45323-0453	N	16.4	62	23/22/10	40862	39175	18296	2674	478	226	22	5

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Mn = Manganese, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antineaza, F = Fuel, W = Water, P = Pistone, N = Nopoline, T = Trace, E = Excavation, NT = Nitrogen, OXI = Oxidation, ST = Soot, SUL = Sulfur, ISO = ISO Rating, PFC = Percent Fuel Content, PQL = Particle Quantifying Index, NAW = Sulf Water, FL P = Flash Point, TAN = Total Acid Number, TEN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

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COMPANY NAME : FLUID ANALYSIS LAB
 CUSTOMER EQUIP NUM : 3034
 COMPARTMENT NAME : FINAL DRIVE REAR LEFT
 SERIAL NUMBER : JRP02807
 MANUFACTURER : CATERPILLAR
 MODEL : 777F
 JOB SITE :
 EXT WARR NUMBER :
 EXPIRE DATE :
 FUEL CONSUMED :

SHOP JOB NUM :
 COMP SERIAL NUM :
 COMPARTMENT MODEL :
 COMP MANUFACTURER :
 SAMPLE LABEL NUM :
 FLUID BRAND/WEIGHT :
 FLUID TYPE :
 EXPIRE DATE :
 FUEL CONSUMED :

Fluids Analysis Laboratory
 1330 Lynchburg Turnpike
 Salem, VA 24153-5457
 640-387-1111
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FAX :
 PHONE :
 SAMPLE TYPE : OIL
 SAMPLE SHIP TIME (day): 15

LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-48324-0232	08-Nov-2018	20-Nov-2018	0	0	Unknown			
<div style="border: 1px solid green; padding: 2px; display: inline-block;">No Action Required</div> NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-45323-0464	18-Nov-2015	19-Nov-2015	20452 HR	18202 HR	No			
<div style="border: 1px solid green; padding: 2px; display: inline-block;">No Action Required</div> NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.								

Wear Metals (ppm)	Cu	Fe	Cr	Al	Pb	Ba	Si	Na	K	B	Mn	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-48324-0232	31	153	1	3	3	3	17	0	0	18	1	1	0	0	0	1866	6	745	671
D100-45323-0464	5	69	1	3	1	1	11	3	1	2	10	0	0	0	0	2680	10	1038	887

Oil Contaminant / Particle Count (100ml)	W	V100	PQI	ISO	4µ	6µ	10µ	14µ	18µ	21µ	30µ	50µ
D100-48324-0232	N	18.1	98	NORMAL								
D100-45323-0464	N	18.7	98	2322/19	40794	39174	18554	2884	570	312	44	18

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mn = Manganese, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antimony, F = Fuel, W = Water, P = Pollution, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OXI = Oxidation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying Index, NAIY = Salt Water, FL Pt = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PV = Particle Volume Indicator

Notes: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof.

RITCHEE EQUIPMENT, INC.
PAUL BARNETTE
P.O. BOX 1588
PRINCETON, WV 24740

FAX: 304-325-6525
 PHONE: 304-325-6525
 SAMPLE TYPE: **OIL**
 SAMPLE SHIP TIME (days): **2**

COMPANY NAME: RITCHEE EQUIPMENT, INC.
 CUSTOMER EQUIP NUM: 3034
 COMPARTMENT NAME: DIFFERENTIAL REAR
 SERIAL NUMBER: JRP02607
 MANUFACTURER: CATERPILLAR
 MODEL: 777F
 JOB SITE:
 EXT WARR NUMBER:
 SHOP JOB NUM:
 COMP SERIAL NUM:
 COMPARTMENT MODEL:
 COMP MANUFACTURER:
 SAMPLE LABEL NUM:
 FLUID BRAND/WEIGHT:
 FLUID TYPE:
 EXT WARR EXPIRE DATE:
 FUEL CONSUMED:



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 www.catermachinery.com

LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-49002-0549	31-Dec-2018	02-Jan-2019	0	0	No			
No Action Required								
NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-48324-0230	05-Nov-2018	20-Nov-2018	0	0	Unknown			
No Action Required								
NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-45323-0452	18-Nov-2015	19-Nov-2015	20452 HR	18202 HR	No			Unknown
No Action Required								
NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.								

Wear Metals (ppm)	Cu	Fe	Cr	Al	Pb	Sn	Si	Na	K	B	Mn	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-49002-0549	28	217	2	2	5	3	11	5	0	47	1	2	0	0	0	905	8	348	410
D100-48324-0230	11	89	1	3	1	2	8	8	0	6	1	1	0	0	0	2382	12	1013	759
D100-45323-0452	4	90	1	3	1	0	11	3	1	5	8	0	0	0	2228	9	870	758	

Oil Condition	Particle Count (ctn/l)	W	V100	PQI	ISO	4µ	6µ	10µ	14µ	18µ	21µ	34µ	50µ
D100-49002-0549	N	N	19.1	159	NORMAL								
D100-48324-0230	N	N	17.5	88	NORMAL								
D100-45323-0452	N	N	18.8	83	2322/19	4725	39531	18388	2573	421	199	22	10

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mn = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antifreeze, F = Fuel, W = Water, P = Positive, N = Negative, T = Trace, E = Excessive, NIT = Nitration, OX = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying Index, NaW = Salt Water, FL P = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Water, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

Notice: This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of the piece of equipment or a component thereof.

COMPANY NAME : FLUID ANALYSIS LAB
 SHOP JOB NUM :
 CUSTOMER EQUIP NUM : 3034
 COMP SERIAL NUM :
 COMPARTMENT NAME : WHEEL BEARINGS FRONT RIGHT
 COMPARTMENT MODEL :
 SERIAL NUMBER : JRP02907
 COMP MANUFACTURER :
 MANUFACTURER : CATERPILLAR
 MODEL : 777F
 SAMPLE LABEL NUM :
 FLUID BRAND/WEIGHT : 50
 PHONE :
 JOB SITE :
 FLUID TYPE :
 SAMPLE TYPE: OIL
 EXT WARR NUMBER :
 EXT WARR EXPIRE DATE :
 SAMPLE SHIP TIME (Days) : 8
 FUEL CONSUMED :



Fluids Analysis Laboratory
 1330 Lynchburg Turnpike
 Salem, VA 24163-6457
 640-387-1111
 www.cartermachinery.com

LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-48324-0231	12-Nov-2018	20-Nov-2018	0	0	No			
Monitor Compartment IRON LEVEL APPEARS HIGH. OTHER READINGS APPEAR TO BE NORMAL. CHECK POSSIBLE SOURCES OF CONTAMINATION. CHANGE OIL IN COMPARTMENT. RESAMPLE IN 125 HOURS TO MONITOR.								
D100-45323-0455	18-Nov-2015	19-Nov-2015	20462 HR	17223 HR	No			
No Action Required NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.								

Wear Metals (ppm)	Cu	Fe	Cr	Al	Pb	Ba	Si	Na	K	B	Mn	Ni	Ag	Ti	V	Ca	Mg	Zn	P
D100-48324-0231	2	683	3	3	0	0	30	6	0	4	2	1	0	0	0	2174	11	1001	777
D100-45323-0455	1	18	0	2	0	0	8	2	0	1	1	0	0		2447	11	979	828	

Oil Contaminant	W	V109	PQI	180	4u	6u	10u	14u	18u	21u	24u	50u
D100-48324-0231	N	15.7	187	NORMAL								
D100-45323-0455	N	16.0	43	2322719	46853	39037	19399	2820	561	294	35	12

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antimony, F = Fuel, W = Water, P = Positive, N = Negative, T = Trace, E = Excitatory, NT = Nitration, OXI = Oxidation, ST = Soot, SUL = Sulfides, ISO = ISO Rating, PFC = Percent Fuel Content, PQI = Particle Quantifying Index, NAW = Sulf Water, FL-PI = Flash Point, TAN = Total Acid Number, TBN = Total Base Number, H2O = Karl Fisher result, V109 = Viscosity@100C, V40 = Viscosity@40C, FVI = Finside Volume Indicator
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RITCHEE EQUIPMENT, INC.
PAUL BARNETTE
P.O. BOX 1598
PRINCETON, WV 24740

FAX: 304-325-6525
 PHONE: 304-325-6525
 SAMPLE TYPE: OIL
 SAMPLE SHIP TIME (days): 3

COMPANY NAME: RITCHEE EQUIPMENT, INC.
 CUSTOMER EQUIP NUM: 3034
 SERIAL NUMBER: JRP02807
 MANUFACTURER: CATERPILLAR
 MODEL: 777F
 JOB SITE:
 EXT WARR NUMBER:
 SHOP JOB NUM: 0285024
 COMP SERIAL NUM:
 COMPARTMENT NAME: WHEEL BEARINGS FRONT LEFT
 COMPARTMENT MODEL:
 COMP MANUFACTURER:
 SAMPLE LABEL NUM:
 FLUID BRAND/WIDGET:
 FLUID TYPE:
 EXT WARR EXPIRE DATE:
 FUEL CONSUMED:

Carter
 Fluids Analysis Laboratory
 1330 Lynchburg Turnpike
 Salem, VA 24163-6467
 540-387-1111
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LAB CONTROL NUMBER	SAMPLE DATE	PROCESS DATE	EQUIPMENT METER	METER ON FLUID	FLUID CHANGED	MAKE UP FLUID	MAKE UP FLUID UNITS	FILTER CHANGED
D100-49008-0453	05-Jan-2019	08-Jan-2019	21100 HR	0	Unknown			
<div style="border: 1px solid green; padding: 5px; display: inline-block;">No Action Required</div> NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.								
D100-45323-0456	18-Nov-2015	19-Nov-2015	20452 HR	18202 HR	No			
<div style="border: 1px solid green; padding: 5px; display: inline-block;">No Action Required</div> NORMAL WEAR METAL READINGS. CONTINUE NORMALLY SCHEDULED SAMPLING.								

Wear Particle (ppm)	Cu	Fe	Cr	Al	Pb	Sn	Bi	Na	K	B	Si	Ag	Ti	V	Ca	Mg	Zn	P	
D100-49008-0453	9	204	1	9	0	0	71	2	0	0	1	2	0	2	0	2115	10	639	787
D100-45323-0456	0	10	0	2	0	0	8	2	0	1	0	0	0	0	0	2289	9	804	787

Wear Particle (ppm)	W	V100	Pd	180	4p	6p	10p	14p	18p	21p	34p	50p
D100-49008-0453	N	11.7	13	NORMAL								
D100-45323-0456	N	18.5	37	222117	32535	12888	3112	1090	621	489	116	82

Ag = Silver, Al = Aluminum, B = Boron, Ca = Calcium, Cr = Chromium, Cu = Copper, Fe = Iron, P = Phosphorus, K = Potassium, Li = Lithium, Mg = Magnesium, Mo = Molybdenum, Na = Sodium, Ni = Nickel, Pb = Lead, Si = Silicon, Sn = Tin, S = Sulfur, V = Vanadium, Zn = Zinc, A = Antimony, F = Fluorine, W = Vanadium, P = Phosphorus, N = Nitrogen, T = Titanium, E = Eccentricity, NT = Nitrogen, OXI = Oxidation, ST = Soot, SUL = Sulfation, ISO = ISO Rating, PFC = Percent Fuel Content, Pd = Particle Quantifying Index, NiV = Salt Water, FL = Fluid, PFI = Fluid, PFI = Fluid, TAN = Total Acid Number, TBN = Total Base Number, HSO = Karl Fisher result, V100 = Viscosity@100C, V40 = Viscosity@40C, PVI = Particle Volume Indicator

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