

Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 171750 Company Name: Power Equipment Company Company Worksite: Knoxville, TN Company Address: 3300 Alcoa Hwy, PO BOX 2311 KNOXVILLE, TN, 37901-2311	Lab No.: 201802060108 Sample Tracking #: NONE Sample Date Jan 30, 2018 Received Date: Feb 06, 2018 Completed Date: Feb 06, 2018	PO No.: Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 / C5852 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: Knoxville, TN	Cpnt. Description: ENGINE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: ENGINE	Fluid Manufacturer: - Fluid Brand/Product: Fluid Grade:

Maintenance Recommendations for Lab No.: 201802060108

Evaluated By: **Smith, Clark**

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives								
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	
0108	01/30/18	26	1	<1	4	6	23	<1	<0.1	<1	<1	17	2	2	52	32	1087	1251	1709	1	566	<1	

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0108	01/30/18	1554		HR	No	S

FLUID PROPERTIES/CONTAMINANTS

D7279 Vis 100 °C	Visc Grade	E2412 SOOT	E2412 OX	E2412 NTR	E2412 GLY	Water %	Fuel %
13.7	40	<0.1	16	10	NEG	<0.1	<0.50

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

Testing performed by Bureau Veritas®, an ISO/IEC 17025:2005 accredited laboratory. L-A-B accredited Certificate Number L2264. †: Not in scope of accreditation. For further details on outsourced testing, contact the laboratory directly. ‡: This test is run based on a trigger test, in this case "<" values indicate that the trigger test was either not positive or the result was below the reportable limit. For a list of trigger tests refer to <http://www.bureauveritas.com/oil-analysis>.
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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 171750 Company Name: Power Equipment Company Company Worksite: Knoxville, TN Company Address: 3300 Alcoa Hwy, PO BOX 2311 KNOXVILLE, TN, 37901-2311	Lab No.: 201802060111 Sample Tracking #: NONE Sample Date Jan 30, 2018 Received Date: Feb 06, 2018 Completed Date: Feb 06, 2018	PO No.: Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 / C5852 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: Knoxville, TN	Cpnt. Description: RIGHT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: - Fluid Brand/Product: Fluid Grade:

Maintenance Recommendations for Lab No.: 201802060111

Evaluated By: **Smith, Clark**

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
0111	01/30/18	165	5	<1	4	<1	82	<1	<0.1	14	<1	33	11	2	8	16	916	1144	4144	19	19	2

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0111	01/30/18	1554		HR	No	S

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	10.6

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Lab Customer ID#: 171750 Company Name: Power Equipment Company Company Worksite: Knoxville, TN Company Address: 3300 Alcoa Hwy, PO BOX 2311 KNOXVILLE, TN, 37901-2311	Lab No.: 201802060110 Sample Tracking #: NONE Sample Date Jan 30, 2018 Received Date: Feb 06, 2018 Completed Date: Feb 06, 2018	PO No.: Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 / C5852 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: Knoxville, TN	Cpnt. Description: LEFT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: - Fluid Brand/Product: Fluid Grade:

Maintenance Recommendations for Lab No.: 201802060110

Evaluated By: **Smith, Clark**

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
0110	01/30/18	187	5	<1	6	2	103	<1	<0.1	6	<1	44	10	3	11	16	938	1132	4214	10	18	3

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0110	01/30/18	1554		HR	No	S

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	10.3

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Lab Customer ID#: 171750 Company Name: Power Equipment Company Company Worksite: Knoxville, TN Company Address: 3300 Alcoa Hwy, PO BOX 2311 KNOXVILLE, TN, 37901-2311	Lab No.: 201802060109 Sample Tracking #: NONE Sample Date: Jan 30, 2018 Received Date: Feb 06, 2018 Completed Date: Feb 06, 2018	PO No.: Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 / C5852 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: Knoxville, TN	Cpnt. Description: HYDRAULIC Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: HYDRAULIC	Fluid Manufacturer: - Fluid Brand/Product: Fluid Grade:

Maintenance Recommendations for Lab No.: 201802060109

Evaluated By: **Smith, Clark**

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives								
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	
0109	01/30/18	15	<1	<1	3	15	27	<1	<0.1	<1	<1	10	5	2	58	111	1218	1451	4314	1	13	<1	

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0109	01/30/18	1554		HR	No	S

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	8.3

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201707141294 Sample Tracking #: NONE Sample Date Jul 10, 2017 Received Date: Jul 14, 2017 Completed Date: Jul 17, 2017	PO No.: BRANDEIS LEXINGTON KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: LEFT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: KOMATSU Fluid Brand/Product: POWER RAIN OIL T O-30 Fluid Grade:

Maintenance Recommendations for Lab No.: 201707141294

Evaluated By: Kullas, Stephen

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1294	07/10/17	159	4	1	5	1	83	<1	<0.1	6	<1	42	14	4	10	19	886	1080	3930	10	15	<1
1222	09/19/16	509	9	1	7	1	168	<1	<0.1	35	<1	53	17	7	1	80	763	911	4023	64	17	<1
0606	11/16/15	295	6	<1	4	2	218 *	<1	<0.1	52	<1	52	5	7	2	64	778	1025	4086	92	22	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1294	07/10/17	1436	436	HR	No	S
1222	09/19/16	927	497	HR	-	C
0606	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	10.5
<0.1	11.2
<0.1	11.3

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201707141293 Sample Tracking #: NONE Sample Date Jul 10, 2017 Received Date: Jul 14, 2017 Completed Date: Jul 17, 2017	PO No.: BRANDEIS LEXINGTON KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: HYDRAULIC Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: HYDRAULIC	Fluid Manufacturer: KOMATSU Fluid Brand/Product: HYDRAULIC OIL 46 AW Fluid Grade:

Maintenance Recommendations for Lab No.: 201707141293

Evaluated By: Kullas, Stephen

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1293	07/10/17	14	<1	<1	1	14	27	<1	<0.1	<1	<1	11	9	3	58	117	1151	1374	4015	1	9	1
1220	09/19/16	13	<1	<1	2	12	24	<1	<0.1	<1	<1	12	13	<1	67	126	1234	1516	4404	<1	9	<1
0604	11/16/15	8	<1	<1	1	8	16	<1	<0.1	<1	<1	12	3	1	68	117	1225	1512	4333	<1	8	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1293	07/10/17	1436	1436	HR	No	S
1220	09/19/16	927	497	HR	-	
0604	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	8.6
<0.1	8.4
<0.1	8.9

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201511170604 Sample Tracking #: NONE Sample Date: Nov 16, 2015 Received Date: Nov 17, 2015 Completed Date: Nov 18, 2015	PO No.: LSOODS Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: HYDRAULIC Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: HYDRAULIC	Fluid Manufacturer: - Fluid Brand/Product: - Fluid Grade:

Maintenance Recommendations for Lab No.: 201511170604

Evaluated By: Gibbons, Timothy

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
0604	11/16/15	8	<1	<1	1	8	16	<1	<0.1	<1	<1	12	3	1	68	117	1225	1512	4333	<1	8	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0604	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	8.9

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201511170605 Sample Tracking #: NONE Sample Date: Nov 16, 2015 Received Date: Nov 17, 2015 Completed Date: Nov 18, 2015	PO No.: LSOODS Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: RIGHT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: - Fluid Brand/Product: - Fluid Grade:

Maintenance Recommendations for Lab No.: 201511170605

Evaluated By: Gibbons, Timothy

ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. Other test results are satisfactory. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
0605	11/16/15	259	5	<1	3	1	140 *	<1	<0.1	14	<1	37	5	9	2	67	767	968	4062	42	11	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0605	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	11.6

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201609201219 Sample Tracking #: NONE Sample Date Sep 19, 2016 Received Date: Sep 21, 2016 Completed Date: Sep 22, 2016	PO No.: BRANDEIS LOUISVILLE KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: ENGINE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: ENGINE	Fluid Manufacturer: KOMATSU Fluid Brand/Product: UNKNOWN Fluid Grade: 15W40

Maintenance Recommendations for Lab No.: 201609201219

Evaluated By: Zufelt, John

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1219	09/19/16	40	1	<1	7	12	179	<1	<0.1	2	<1	21	22	4	23	21	969	1245	2408	1	69	<1
0603	11/16/15	55	2	<1	5	16	22	4	<0.1	<1	<1	54 *	5	18	57	111	970	1212	2882	2	24	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1219	09/19/16	927	497	HR	Yes	C
0603	11/16/15	430		HR	Yes	C

FLUID PROPERTIES/CONTAMINANTS

D7279 Vis 100 °C	Visc Grade	E2412 SOOT	E2412 OX	E2412 NTR	E2412 GLY	Water %	Fuel %
13.4	40	0.4	20	11	NEG	<0.1	<0.50
13.4	40	0.3	20	13 *	NEG	<0.1	<0.50

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201511170606 Sample Tracking #: NONE Sample Date: Nov 16, 2015 Received Date: Nov 17, 2015 Completed Date: Nov 18, 2015	PO No.: LSOODS Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: LEFT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: - Fluid Brand/Product: - Fluid Grade:

Maintenance Recommendations for Lab No.: 201511170606

Evaluated By: Gibbons, Timothy

ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. Other test results are satisfactory. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
0606	11/16/15	295	6	<1	4	2	218 *	<1	<0.1	52	<1	52	5	7	2	64	778	1025	4086	92	22	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0606	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	11.3

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201707141295 Sample Tracking #: NONE Sample Date Jul 10, 2017 Received Date: Jul 14, 2017 Completed Date: Jul 17, 2017	PO No.: BRANDEIS LEXINGTON KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: RIGHT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: KOMATSU Fluid Brand/Product: POWER RAIN OIL T O-30 Fluid Grade:

Maintenance Recommendations for Lab No.: 201707141295

Evaluated By: Kullas, Stephen

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1295	07/10/17	147	5	1	3	<1	70	<1	<0.1	13	1	34	15	3	9	20	897	1126	4017	19	18	<1
1221	09/19/16	477	9	1	6	<1	235 *	<1	<0.1	55	<1	57	20	6	1	42	741	873	3824	94	23	<1
0605	11/16/15	259	5	<1	3	1	140 *	<1	<0.1	14	<1	37	5	9	2	67	767	968	4062	42	11	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1295	07/10/17	1436	436	HR	No	S
1221	09/19/16	927	497	HR	-	C
0605	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	10.5
<0.1	11.2
<0.1	11.6

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201511170603 Sample Tracking #: NONE Sample Date: Nov 16, 2015 Received Date: Nov 17, 2015 Completed Date: Nov 18, 2015	PO No.: LSOODS Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: ENGINE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: ENGINE	Fluid Manufacturer: CASTROL Fluid Brand/Product: UNKNOWN Fluid Grade: 15W40

Maintenance Recommendations for Lab No.: 201511170603

Evaluated By: Gibbons, Timothy

ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. NO SPECIFIC diagnostic or corrective MAINTENANCE is REQUIRED at this time. Silicon attributed to assembly/break-in. Data provided indicates oil and filter were changed at sampling. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
0603	11/16/15	55	2	<1	5	16	22	4	<0.1	<1	<1	54 *	5	18	57	111	970	1212	2882	2	24	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0603	11/16/15	430		HR	Yes	C

FLUID PROPERTIES/CONTAMINANTS

D7279 Vis 100 °C	Visc Grade	E2412 SOOT	E2412 OX	E2412 NTR	E2412 GLY	Water %	Fuel %
13.4	40	0.3	20	13 *	NEG	<0.1	<0.50

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201609201220 Sample Tracking #: NONE Sample Date Sep 19, 2016 Received Date: Sep 21, 2016 Completed Date: Sep 22, 2016	PO No.: BRANDEIS LOUISVILLE KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: HYDRAULIC Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: HYDRAULIC	Fluid Manufacturer: - Fluid Brand/Product: FACTORY FILL Fluid Grade:

Maintenance Recommendations for Lab No.: 201609201220

Evaluated By: Zufelt, John

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1220	09/19/16	13	<1	<1	2	12	24	<1	<0.1	<1	<1	12	13	<1	67	126	1234	1516	4404	<1	9	<1
0604	11/16/15	8	<1	<1	1	8	16	<1	<0.1	<1	<1	12	3	1	68	117	1225	1512	4333	<1	8	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1220	09/19/16	927	497	HR	-	
0604	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	8.4
<0.1	8.9

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201707141292 Sample Tracking #: NONE Sample Date Jul 10, 2017 Received Date: Jul 14, 2017 Completed Date: Jul 17, 2017	PO No.: BRANDEIS LEXINGTON KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: ENGINE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: ENGINE	Fluid Manufacturer: KOMATSU Fluid Brand/Product: LOW ASH Fluid Grade: 15W40

Maintenance Recommendations for Lab No.: 201707141292

Evaluated By: Kullas, Stephen

ANALYSIS REFLECTS CONDITIONS / VALUES NOTED FOR MONITORING PURPOSES ONLY. Other tests results are satisfactory and data reflects the system was serviced with the appropriate oil and/or filter change at the time of sampling. No additional action is required at this time. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1292	07/10/17	57	2	<1	7	14	82 *	1	<0.1	<1	<1	20	9	11	48	57	979	1177	2675	1	38	<1
1219	09/19/16	40	1	<1	7	12	179	<1	<0.1	2	<1	21	22	4	23	21	969	1245	2408	1	69	<1
0603	11/16/15	55	2	<1	5	16	22	4	<0.1	<1	<1	54 *	5	18	57	111	970	1212	2882	2	24	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1292	07/10/17	1436	436	HR	Yes	C
1219	09/19/16	927	497	HR	Yes	C
0603	11/16/15	430		HR	Yes	C

FLUID PROPERTIES/CONTAMINANTS

D7279 Vis 100 °C	Visc Grade	E2412 SOOT	E2412 OX	E2412 NTR	E2412 GLY	Water %	Fuel %
13.4	40	0.2	20	12	NEG	<0.1	<0.50
13.4	40	0.4	20	11	NEG	<0.1	<0.50
13.4	40	0.3	20	13 *	NEG	<0.1	<0.50

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

Testing performed by Bureau Veritas @, an ISO/IEC 17025:2005 accredited laboratory. L-A-B accredited Certificate Number L2264. †: Not in scope of accreditation. For further details on outsourced testing, contact the laboratory directly. ‡: This test is run based on a trigger test, in this case "<" values indicate that the trigger test was either not positive or the result was below the reportable limit. For a list of trigger tests refer to <http://www.bureauveritas.com/oil-analysis>.

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201609201221 Sample Tracking #: NONE Sample Date Sep 19, 2016 Received Date: Sep 21, 2016 Completed Date: Sep 22, 2016	PO No.: BRANDEIS LOUISVILLE KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: RIGHT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: KOMATSU Fluid Brand/Product: POWER RAIN OIL T O-30 Fluid Grade:

Maintenance Recommendations for Lab No.: 201609201221

Evaluated By: Zufelt, John

ANALYSIS INDICATES TYPICAL CONDITIONS FOR BREAK-IN. The noted (underlined> wear metals are for monitoring purposes only. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1221	09/19/16	477	9	1	6	<1	<u>235</u> *	<1	<0.1	55	<1	57	20	6	1	42	741	873	3824	94	23	<1
0605	11/16/15	259	5	<1	3	1	<u>140</u> *	<1	<0.1	14	<1	37	5	9	2	67	767	968	4062	42	11	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1221	09/19/16	927	497	HR	-	C
0605	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	11.2
<0.1	11.6

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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Account Information	Sample Information	Other Sample Information
Lab Customer ID#: 64100 Company Name: Brandeis Machinery And Supply Company Company Worksite: Lexington, KY Company Address: 1389 CAHILL DR LEXINGTON, KY, 40504	Lab No.: 201609201222 Sample Tracking #: NONE Sample Date Sep 19, 2016 Received Date: Sep 21, 2016 Completed Date: Sep 22, 2016	PO No.: BRANDEIS LOUISVILLE KY Work Order No.:
Unit Information	Component Information	Fluid Information
Unit ID: 90370 Unit Mfg: Komatsu Unit Model: D39PX-23 Unit Serial #: 90370 Unit Worksite: C5852	Cpnt. Description: LEFT FINAL DRIVE Cpnt. Mfg: Komatsu Cpnt. Model: D39PX-23 Cpnt. Serial #: 90370 Cpnt. Type: FINAL DRIVE	Fluid Manufacturer: KOMATSU Fluid Brand/Product: POWER RAIN OIL T O-30 Fluid Grade:

Maintenance Recommendations for Lab No.: 201609201222

Evaluated By: Zufelt, John

ANALYSIS INDICATES COMPONENT & LUBRICANT CONDITIONS ARE ACCEPTABLE. RESAMPLE at the next scheduled interval.

SPECTROCHEMICAL ANALYSIS IN PARTS PER MILLION

LAB NO.	SAMPLE DRAWN	Wear Metals										Contaminants			Additives							
		Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
1222	09/19/16	509	9	1	7	1	168	<1	<0.1	35	<1	53	17	7	1	80	763	911	4023	64	17	<1
0606	11/16/15	295	6	<1	4	2	218 *	<1	<0.1	52	<1	52	5	7	2	64	778	1025	4086	92	22	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
1222	09/19/16	927	497	HR	-	C
0606	11/16/15	430		HR	-	

FLUID PROPERTIES/CONTAMINANTS

Water %	D7279 Vis 100 °C
<0.1	11.2
<0.1	11.3

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified /method

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