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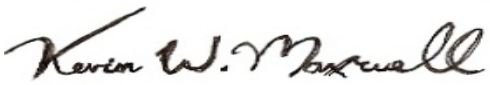
Will Ledbetter
USG
Greenville, MS

The following is a summary of findings from the 2020 2nd quarter oil analysis at your facility. Please let us know if there are any questions or comments. As always, it has been a pleasure to serve USG-Greenville, MS. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



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Komatsu Press Clutch and Brake

Most metals have come down substantially since last time. Copper and lead are still a little on the high side, but neither looks too troublesome given the overall quality of these results. No contamination was detected. This oil is fine to leave in use for now. **OIL IS OK FOR USE**

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	MI/HR on Unit								
	Sample Date	7/15/2020		2/28/2020	9/13/2019	6/8/2019	1/29/2019	7/1/2018	
	Make Up Oil Added								
	ALUMINUM	1	0	4	2	0	0	0	1
	CHROMIUM	1	0	3	1	0	0	0	0
	IRON	4	23	20	**229**	18	8	14	48
	COPPER	**9**	3	**41**	19	8	3	1	26
	LEAD	**7**	0	**8**	0	0	1	0	1
	TIN	0	0	1	0	0	1	1	2
	MOLYBDENUM	0	0	0	0	0	0	0	0
	NICKEL	0	0	0	0	0	0	0	0
	MANGANESE	0	0	1	2	0	0	0	0
	SILVER	0	0	0	0	0	0	0	0
	TITANIUM	0	0	0	0	0	0	0	0
	POTASSIUM	1	1	0	0	0	0	0	1
	BORON	0	1	0	0	2	2	1	1
	SILICON	2	1	6	4	1	1	0	3
	SODIUM	2	3	1	2	2	4	2	3
	CALCIUM	107	107	106	107	129	129	114	110
	MAGNESIUM	0	0	0	1	0	1	0	2
	PHOSPHORUS	458	445	462	450	474	498	483	441
	ZINC	3	6	3	17	13	4	8	303
	BARIUM	0	0	0	3	2	0	0	1

			Values Should Be*					
PROPERTIES	SUS Viscosity @ 210°F	39.9		40.3	40.2	39.6	38.9	39.3
	cSt Viscosity @ 100°C	4.14		4.26	4.23	4.03	3.83	3.94
	Flashpoint in °F	355		325	365	350	340	390
	Fuel %	-		-	-	-	-	-
	Antifreeze %	-		-	-	-	-	-
	Water %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Insolubles %	0.4	<0.6	0.2	0.3	0.1	TR	0.0
	TBN							
	TAN							
	ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

#3 Board Line Drive Gearbox

Wear trends still look great, and there isn't any contamination in sight. This ISO 220 lube is fine to keep in.

OIL IS OK FOR USE

	MI/HR on Oil		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	MI/HR on Unit								
	Sample Date	7/15/2020		2/28/2020	9/13/2019	6/8/2019	2/6/2019	6/21/2018	
	Make Up Oil Added								
ELEMENTS IN PARTS PER MILLION	ALUMINUM	0	1	0	0	0	0	1	1
	CHROMIUM	0	1	1	0	0	1	1	0
	IRON	52	39	41	24	19	97	80	67
	COPPER	1	5	2	5	1	1	3	2
	LEAD	1	1	1	1	0	1	1	0
	TIN	0	0	0	0	0	0	0	0
	MOLYBDENUM	0	0	0	0	0	0	0	27
	NICKEL	0	0	0	0	0	0	0	0
	MANGANESE	1	0	1	0	0	1	1	1
	SILVER	0	0	0	0	0	0	0	0
	TITANIUM	0	0	0	0	0	0	0	0
	POTASSIUM	1	1	1	1	0	0	0	1
	BORON	7	12	10	10	11	16	11	28
	SILICON	4	5	4	3	3	5	4	11
	SODIUM	6	10	6	4	6	19	16	5
	CALCIUM	5	8	9	9	4	9	21	12
	MAGNESIUM	1	1	1	1	1	1	1	1
	PHOSPHORUS	315	305	317	337	334	312	339	449
	ZINC	19	26	32	25	7	22	28	21
	BARIUM	0	0	0	0	0	0	0	0

			Values Should Be*					
PROPERTIES	SUS Viscosity @ 210°F	91.8		92.0	90.2	92.5	89.7	93.3
	cSt Viscosity @ 100°C	18.41		18.45	18.04	18.58	17.90	18.78
	Flashpoint in °F	515		465	470	465	465	450
	Fuel %	-		-	-	-	-	-
	Antifreeze %	-		-	-	-	-	-
	Water %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Insolubles %	TR	<0.6	TR	0.1	TR	0.1	0.4
	TBN							
	TAN							
	ISO Code							

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Hydropulper Gearbox

Aluminum and chrome are much lower than last time, as is silicon. Copper went up though, perhaps from wear-in if any repairs were made. There's still water showing up, but not nearly as much, and that is hopefully just residual, meaning it will go away on its own. Insolubles (solids) are within limits at 0.3%. We'd suggest another oil change to clean this system up. **CHANGE OIL SOON**

ELEMENTS IN PARTS PER MILLION									
	MI/HR on Oil		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	MI/HR on Unit								
	Sample Date	7/15/2020		2/28/2020	9/13/2019	6/8/2019	1/29/2019	8/5/2018	
	Make Up Oil Added								
	ALUMINUM	3	1	**27**	0	0	1	2	1
	CHROMIUM	3	1	**36**	0	1	3	**4**	0
	IRON	65	39	**75**	4	11	37	**70**	67
	COPPER	**21**	5	4	2	**11**	**13**	**16**	2
	LEAD	4	1	4	0	0	1	2	0
	TIN	0	0	2	0	0	0	0	0
	MOLYBDENUM	0	0	0	0	0	1	1	27
	NICKEL	0	0	1	0	0	0	0	0
	MANGANESE	1	0	1	0	0	0	1	1
	SILVER	2	0	0	0	0	0	0	0
	TITANIUM	1	0	4	0	0	1	1	0
	POTASSIUM	1	1	8	0	1	2	4	1
	BORON	7	12	18	12	27	22	35	28
	SILICON	**12**	5	**75**	0	4	7	**15**	11
	SODIUM	2	10	48	1	2	7	6	5
	CALCIUM	8	8	162	3	14	12	23	12
	MAGNESIUM	2	1	12	0	3	3	4	1
	PHOSPHORUS	240	305	119	334	336	301	423	449
	ZINC	49	26	87	34	46	105	222	21
	BARIUM	0	0	0	0	0	0	0	0

PROPERTIES			Values Should Be*					
	SUS Viscosity @ 210°F	89.9		-	88.1	90.8	88.1	88.8
	cSt Viscosity @ 100°C	17.96		THICK	17.53	18.17	17.51	17.69
	Flashpoint in °F	485		BOIL	445	470	450	475
	Fuel %	-		-	-	-	-	-
	Antifreeze %	-		-	-	-	-	-
	Water %	**1.0**	0.0	**16.0**	**0.4**	0.0	**0.6**	0.0
	Insolubles %	0.3	<0.6	**42.0**	0.1	0.4	0.3	0.4
	TBN							
	TAN							
	ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

Hi-Pressure Hydraulic Pump (Water Jet System)

Insolubles (solids) are excessive at 0.3%, so this oil should be changed before long. Check filters if equipped. Everything else looks okay. **OIL MAY NEED CHANGING SOON**

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	MI/HR on Unit								
	Sample Date	7/15/2020		2/28/2020	9/13/2019	6/8/2019	1/29/2019	7/1/2018	
	Make Up Oil Added								
	ALUMINUM	0	0	0	0	0	0	0	0
	CHROMIUM	1	2	1	1	1	0	4	0
	IRON	1	1	0	2	0	1	1	4
	COPPER	3	5	1	3	6	2	10	4
	LEAD	3	1	0	0	0	1	0	1
	TIN	0	0	0	0	1	0	1	0
	MOLYBDENUM	0	0	0	0	0	0	0	1
	NICKEL	0	0	0	0	0	0	0	0
	MANGANESE	0	0	0	0	0	0	0	0
	SILVER	0	0	0	0	0	0	0	0
	TITANIUM	0	0	0	0	0	0	0	0
	POTASSIUM	0	0	0	0	0	0	0	1
	BORON	0	1	0	0	2	1	2	2
	SILICON	1	2	0	1	2	1	2	1
	SODIUM	2	2	0	4	1	3	2	3
	CALCIUM	32	32	38	126	14	25	10	91
	MAGNESIUM	0	0	0	1	0	0	0	6
	PHOSPHORUS	302	267	290	485	269	281	190	364
	ZINC	342	284	357	711	267	329	95	420
	BARIUM	0	0	0	0	0	0	0	0

			Values Should Be*					
PROPERTIES	SUS Viscosity @ 210°F	47.7	46-53	48.4	48.2	49.3	48.1	49.2
	cSt Viscosity @ 100°C	6.56	6.0-8.5	6.77	6.72	7.06	6.69	7.03
	Flashpoint in °F	465	>380	450	430	465	470	460
	Fuel %	-		-	-	-	-	-
	Antifreeze %	-		-	-	-	-	-
	Water %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Insolubles %	**0.3**	<0.1	TR	TR	**0.2**	0.0	TR
	TBN							
	TAN							
	ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE