

### Analysis Report

Component Information			Sample Information		Customer Information
Machine Type:	Anti Friction Bearing	Sump Size: Unknown	Received:	03/16/2017	ABC WIND FARM
Lubricant:	KLUBER/Klubertplx BEM 41-301		Report:	03/16/2017	
Machine MFG:	UNKNOWN		Sample No.:	2694 - 11 - 59 - 7	
Machine MOD:	T		Analyst/Test:	DR / AFGREASE1	

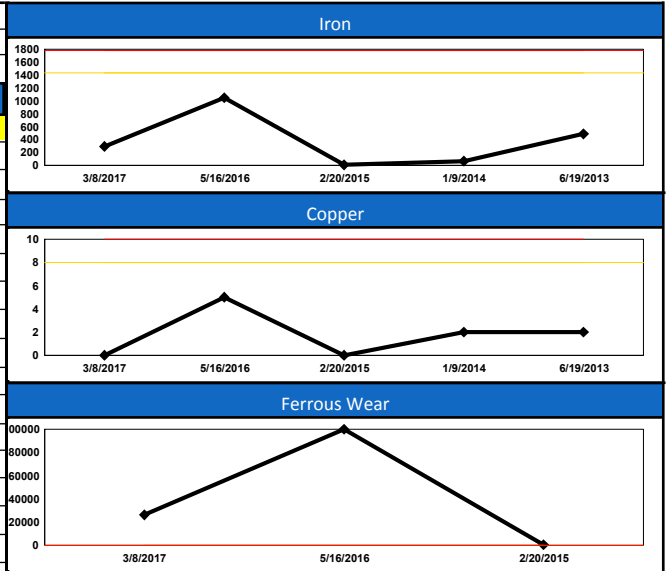
**PROBLEMS**

High Water Content  
High Ferrous Wear

**COMMENTS** The level of water contamination (0.2400%) is excessive and considered abnormal. Check for sources of water ingress and repair as necessary. The high ferrous wear concentration level suggests that an abnormal wear mode exists. Check this machine for excessive noise, vibration or high temperature. Continued operation may result in serious mechanical issues.

**CUSTOMER NOTES**

Date Sampled	NEW OIL	3/8/2017	5/16/2016	2/20/2015	1/9/2014	6/19/2013	
Lab No	561762	1905836	1727854	1422617	1208341	1015298	
Machine / Lube Cond.		C / M	C / M	N / M	M / N	M / N	
<b>ELEMENTAL SPECTROSCOPY (ppm) ASTM D5185 Mod (-) indicates below detection limit</b>							
Wear Metals	Iron	4	292	1047	7	65	487
	Copper	-	-	5	-	2	2
	Lead	-	93	381	193	1855	150
	Aluminum	-	5	24	-	12	11
	Tin	-	-	-	-	-	5
	Nickel	-	-	-	-	-	-
	Chromium	-	3	11	-	-	5
	Titanium	-	-	4	-	11	-
	Vanadium	-	-	-	-	-	-
	Silver	-	-	-	-	-	-
Additives	Calcium	28	41	91	8	98	24
	Magnesium	-	2	9	2	9	2
	Phosphorus	85	28	83	92	92	18
	Zinc	560	112	456	141	155	126
	Barium	-	2	10	-	2	8
	Molybdenum	-	30	13	11	189	4
Contaminants	Silicon	37	14	70	4	48	29
	Boron	-	-	12	-	5	-
	Lithium	-	113	421	137	-	-
	Sodium	-	5	35	38	633	-
	Potassium	-	-	-	-	-	-
<b>WATER (%) a-ASTM D6304C b-IWI-134* c-Crackle d-IWI-135* e-IWI-370*</b>							
Water		0.2400 (a)	0.3789 (a)	0.2540 (a)			
<b>FERROUS WEAR CONCENTRATION (ppm)</b>							
Ferrous Wear		26208	99999	449			



Machine Condition

**CRITICAL**

Lubricant Condition

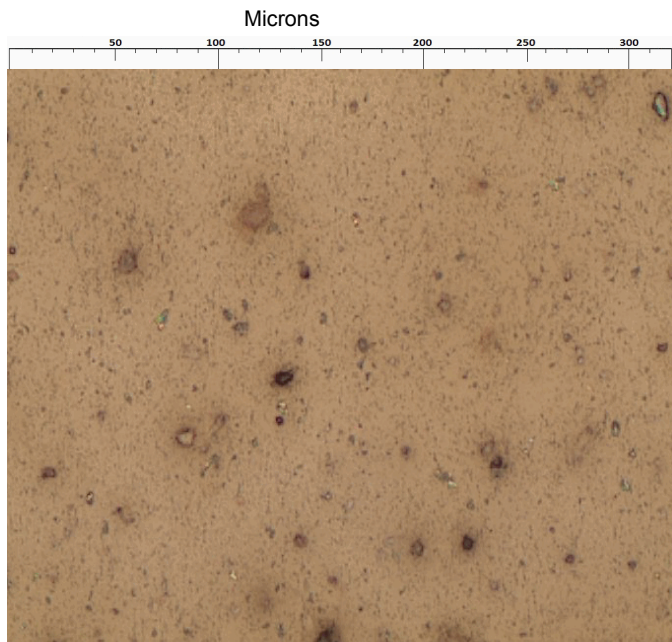
**MARGINAL**

Machine Name: 35&50 Ton Crane HPU - FWD MASTER-GREASE

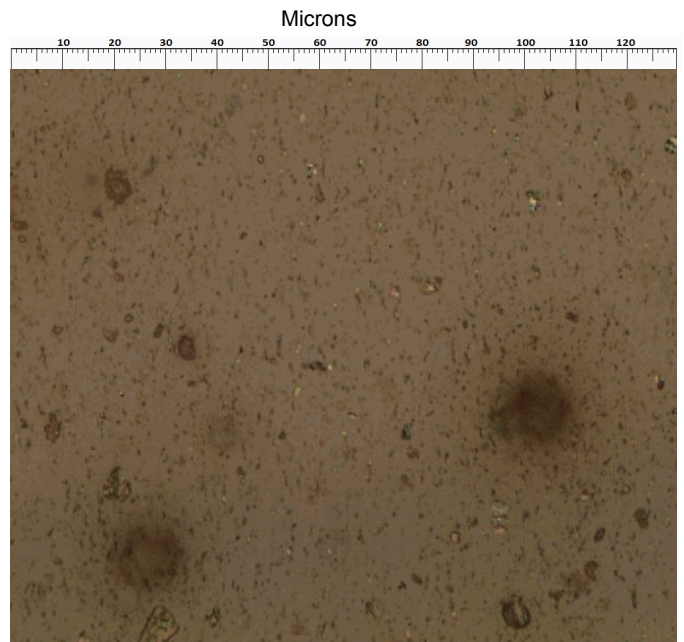
## Wear Particle Analysis Report

	Trace	Light	Moderate	Heavy	Max. Size	Particle Composition
Rubbing Wear					5-15	Ferrous, White Non-Ferrous
Rolling Contact						
Sliding Wear						
Rolling/Sliding Wear						
Cutting Wear						
Chunks						
Spheres						
Corrosion						
Dark Metallic Oxides						
Red Oxides						
Dust/Dirt						
Other Contaminants						external contaminants
Oxidation By-Products						

Observations: Analytical ferrography did not detect abnormal particles for this sample.



200x Rubbing wear and dust/dirt.



500x Rubbing wear and dust/dirt.