

EQUIPMENT SPECIFIC ANALYSIS

Predict
 9555 Rockside Rd.
 Suite 350
 Cleveland, OH 44125
 Phone: 800-543-8786
 Fax: 216-642-1484

XYZ Manufacturing
 Cleveland, Ohio
 Example Report

CRITICAL

SAMPLE ID: USE-DRYER #4-GB
 SAMPLE DESC: C1 Agitator
 COMPONENT: Gearcase/Speed Reducer
 MANUFACTURER: Falk
 LUBRICANT: Mobil Mobilgear 627 ISO 100
 RESERVOIR CAP: 65 Gallons [246.4 Liters]
 LUBE TIME: 1268 Hours MACHINE TIME: 52658 Hours

SAMPLE DATE: Sep 22, 2001
 REC'D DATE: Sep 23, 2001
 REPORT DATE: Sep 24, 2001
 1st SAMPLE: Nov 15, 1999
 PREV SAMPLE: Aug 15, 2001 [M]
 NO. SAMPLES: 24
 PROGRAM: P1

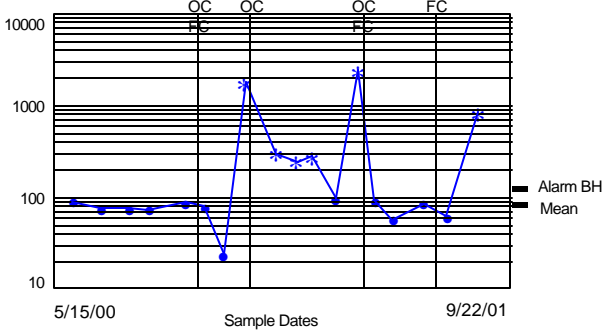
RECOMMENDATIONS:

Schedule this unit for an inspection of the bronze bearing retainers and bushings for severe abnormal wear. Check also for abnormal wear of the bearing races and rollers. Inspection of the gear teeth is advised.

Discussion Of Results:

The wear particle concentration has increased from 62.5 to 865.0. Analytical results show the presence of 160 micron copper alloy severe sliding wear particles and 85 micron low alloy steel bearing wear particles. These particles indicate a severe abnormal wear mode in progress. Test results also show the presence of 60 micron low alloy steel gear wear particles. Various contaminants (mostly dirt) and oxidized wear debris are contained in this sample. The oxidized debris consists of black oxides, which form as the result of heat due to friction from improper or inadequate lubrication, and red oxides, which are an indication of water contamination or rust.

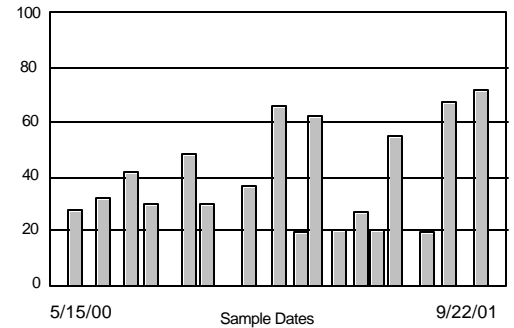
Wear Particle Trend



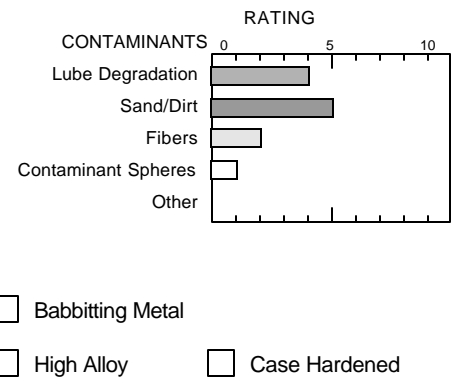
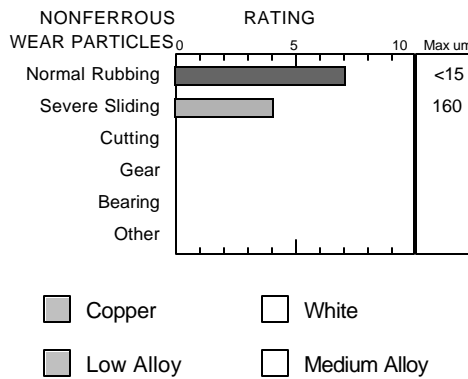
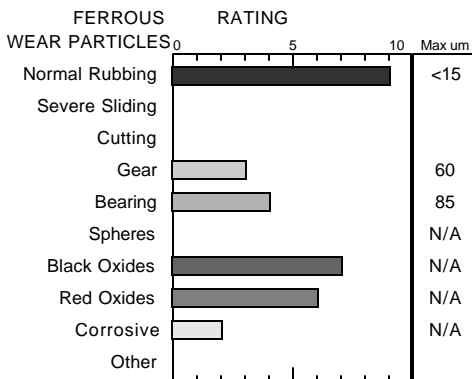
QUANTITATIVE RESULTS:

WPC: 865.0
 DL: 743.0
 DS: 122.0
 Mean: 76.5
 Std Dev: 25.6
 Alarm A: 229.4
 Alarm BH: 135.3
 Alarm BL: 17.7
 Alarm MH: Not Set
 Alarm ML: Not Set
 PLP: 71.8%
 Water KF: 256 ppm
 Crackle/REF: N/A
 Viscosity: 16.1 cSt

Percent Large Particles



ANALYTICAL RESULTS:



Copper
 White
 Babbiting Metal
 Low Alloy
 Medium Alloy
 High Alloy
 Case Hardened

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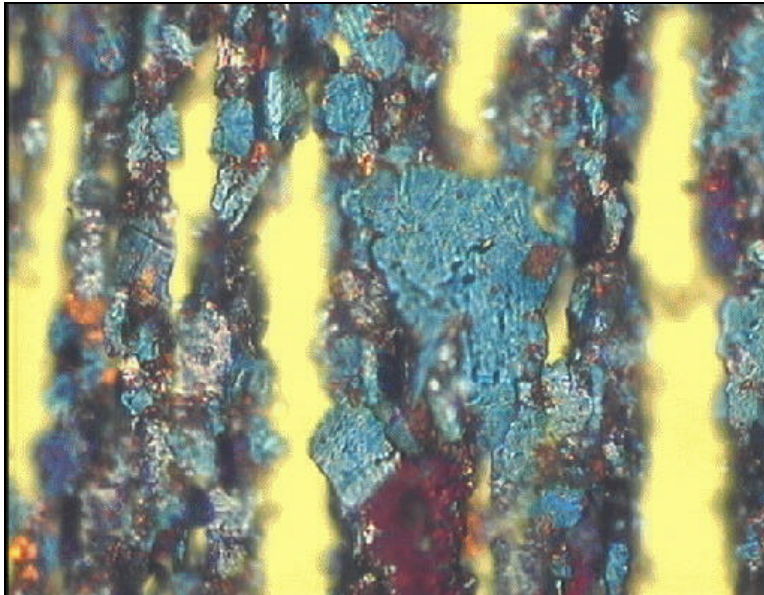
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Image #1

This photograph shows low alloy steel gear wear particles. These particles measure up to 60 microns and are a sign of abnormal wear of the gears in this unit.

Image #1 500x



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MARGINAL

SAMPLE ID: USE-DRYER #4-GB
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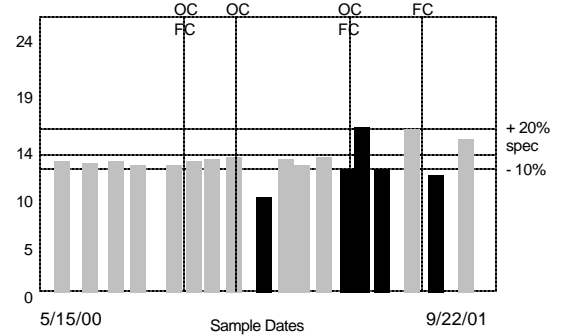
RECOMMENDATIONS:

Consider changing or reconditioning the lubricant to decrease corrosion of the copper alloy components. Test results suggest that the additive package is being depleted.

PHYSICAL PROPERTIES:

Sample Date	6/10/01	7/18/01	8/15/01	9/22/01	Reference
Viscosity (cSt)	10.7	17.2	10.2	16.1	14
Karl Fischer (ppm)		234	175	256	145
Water (Abs/cm)	9.3	11.7	7.8	12.1	7.2
Oxidation (Abs/cm)	4.7	24.2	21.9	22.5	23
TAN	0.125	0.442	0.252	0.367	0.157
TBN					1.485
Particle Count (ISO)	17/15	17/15	18/16	19/17	17/14

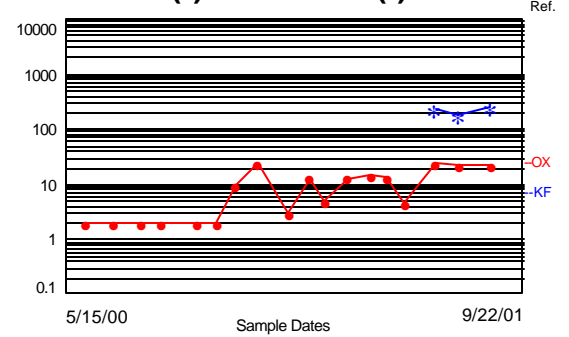
Viscosity (Spec. 12cSt @ 100C)



TRACE ELEMENTS: (ppm)

	6/10/01	7/18/01	8/15/01	9/22/01	Reference
Equipment					
Iron	26	49	28	32	0
Chromium	3	2	3	5	0
Aluminum	3	2	2	3	0
Copper	51	38	14	63	0
Lead	3	3	3	5	1
Tin	25	25	3	9	0
Silver	0	0	0	0	0
Nickel	2	3	3	3	1
Contaminants					
Silicon	35	18	5	12	0
Sodium	82	3	4	2	1
Potassium	2	1	2	0	1
Boron	25	18	32	22	28
Molybdenum	1	0	0	0	0
Additives					
Magnesium	16	4	1	2	0
Calcium	29	26	35	28	31
Barium	3	4	7	5	11
Phosphorus	360	420	450	125	391
Zinc	32	37	63	22	51
Other					
Cadmium	1	0	0	0	0
Vanadium	0	1	2	2	2
Titanium	0	0	0	0	0

KF(*) / Oxidation(*)



Cr(*) / Sn(*)

