



# CONDITION REPORT

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 Reports

CRITICAL	
ECR	LCR
CRITICAL	MARGINAL

LOCATION ID: TURB01 RES  
DESCRIPTION: Turbine 1 Reservoir  
COMPONENT: Turbine  
LUBRICANT: Exxon Teresstic GTC 32  
RESERV. CAP: 4000.0 Gal  
LUBE TIME: 15000 Hours  
TEST SUITE: R218

MACH HRS: 38000 Hours

SAMPLE DATE: 05/07/07  
REC'D DATE: 05/10/07  
REPORT DATE: 05/10/07  
SPID #: 254858  
CNTL #: 1565593  
ANALYST: Hierro  
BATCH #: 05/10/07-68

### RECOMMENDATIONS:

Color indicates this lubricant has excessive degradation that may be corrected by special filtration. Water content is above Alert and will cause excessive oil degradation and component wear unless removed. Note that TAN is also increasing, indicating the lubricant is becoming degraded. Particle count levels are too high and appear to be dirt and wear. Wear particle analysis indicates large babbitt wear particles from the bearings. Filter oil to remove particles and water, check for varnish, and check bearings with vibration analysis.

CUSTOMER COMMENTS: Customer Comments: This area designated for customer comments. Comments will become part of permanent record. Space is limited to approx. 256 characters.

### REPORT RATINGS:

Sample Date	11/03/2005	02/21/2006	06/20/2006	07/14/2006	10/25/2006	01/09/2007	05/07/2007
Ratings	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	MARGINAL	CRITICAL

### PHYSICAL/CHEMICAL PROPERTIES:

Visc 40C, cSt	32.11	32.11	32.61	33.11	34.21	34.71	34.30
Visc 100C, cSt							

01/12/2004	Limits	
Lubricant Reference	Out of Range Low	Out of Range High
32.30	29.70	37.10
5.54	5.23	6.05

Viscosity Index							
Color	2.0	2.0	2.5	2.5	3.0	3.5	4.5
Crackle, Water	NEG	NEG	NEG	NEG	NEG	NEG	POS
Crackle, Refridg.	NEG	NEG	NEG	NEG	NEG	NEG	NEG
Water (KF), ppm	6	15	6	17	44	71	99
Water (%)	0.001	0.002	0.001	0.002	0.004	0.007	0.010
Water (FTIR), abs							
Oxidation (abs)							
Nitration (abs)							
TAN (mg KOH)	0.080	0.080	0.070	0.080	0.100	0.140	0.230
TBN (mg KOH)							
* RPVOT (Minutes)			975				

	Alert	Alarm
	3.50	5.50
NEG		
NEG		
N/A	75	100
	0.007	0.010
7.5		
6.0		
3.600		
0.098	0.25	0.40
0.269		

### PARTICULATES:

ISO 4406 PC	15/13/9	16/14/12	16/13/10	16/14/11	17/14/11	16/13/9	19/16/14
DR Trend							
Soot							

	Alert	Alarm
16/15/14	18/15/13	19/16/14
0.0		

### TRACE ELEMENTS:

Equipment	Iron	0	0	0	2	4	3	12
	Chromium	0	0	0	0	0	0	0
	Aluminum	0	0	0	1	0	2	4
	Copper	0	0	0	2	1	5	15
	Lead	0	1	0	0	1	0	9
	Tin	0	1	0	0	0	1	8
	Silver	0	0	0	0	0	0	0
	Nickel	0	0	0	0	0	0	1
	Silicon	0	1	0	1	0	6	19
	Sodium	0	0	0	1	0	0	7
Contaminants	Potassium	0	0	0	0	0	0	0
	Boron	0	0	0	0	0	0	0
	Molybdenum	0	0	0	0	0	0	0
	Magnesium	0	0	0	0	0	0	0
	Calcium	0	0	0	0	0	0	0
	Barium	0	0	0	0	0	0	0
	Phosphorus	1	0	2	0	0	0	0
	Zinc	2	3	2	2	1	2	3
	Cadmium	1	0	0	0	0	0	2
	Vanadium	0	0	0	0	0	0	0
Other	Titanium	0	0	0	0	0	0	0

	Alert	Alarm
0	10.00	15.00
0		
0	3.00	5.00
0	5.00	10.00
0	3.00	8.00
0	3.00	8.00
0		
0		
2	5.00	10.00
0		
0		
8		
0		
0		
0		
4		
0		
0		

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 Reports

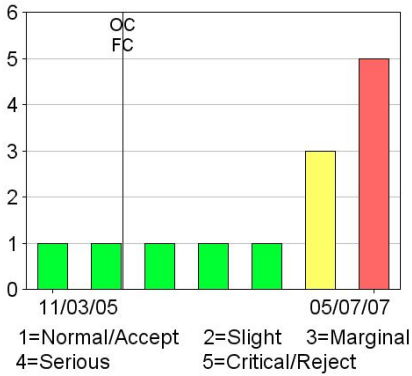
<b>CRITICAL</b>	
ECR	LCR
CRITICAL	MARGINAL

LOCATION ID: TURB01 RES  
 DESCRIPTION: Turbine 1 Reservoir  
 COMPONENT: Turbine  
 LUBRICANT: Exxon Teresstic GTC 32  
 RESERV. CAP: 4000.0 Gal  
 LUBE TIME: 15000 Hours  
 TEST SUITE: R218

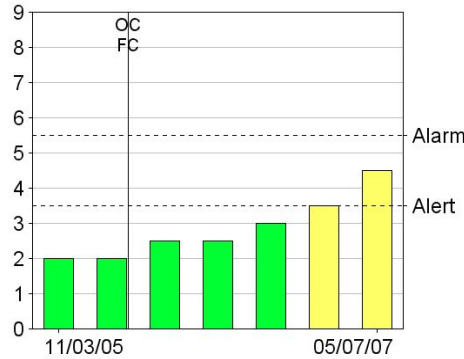
MACH HRS: 38000 Hours

SAMPLE DATE: 05/07/07  
 REC'D DATE: 05/10/07  
 REPORT DATE: 05/10/07  
 SPID #: 254858  
 CNTL #: 1565593  
 ANALYST: Hierro  
 BATCH #: 05/10/07-68

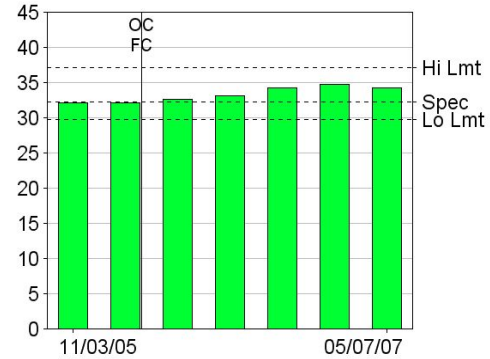
**Ratings**



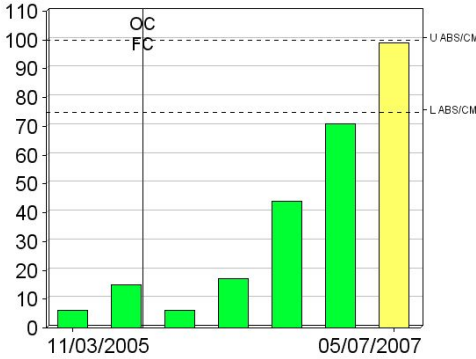
**Color**



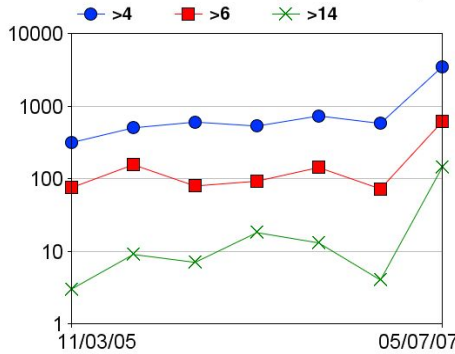
**Viscosity (Spec. 32.3cSt@40C)**



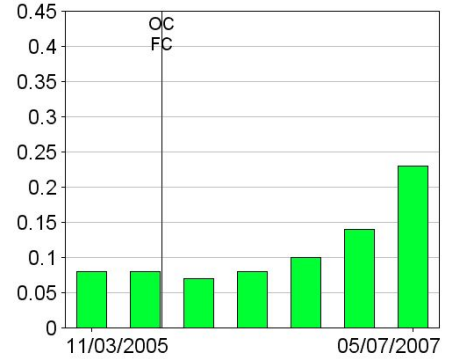
**Water KF (ppm)**



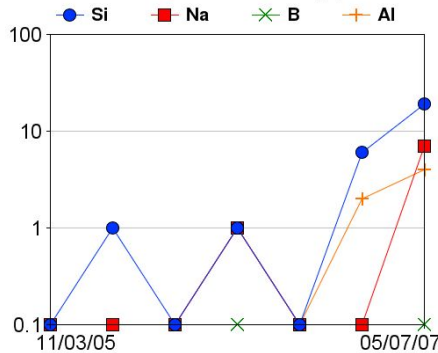
**Particle Count (particles/ml)**



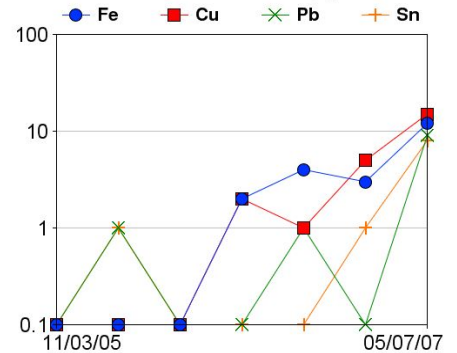
**Acid No. (Mg KOH)**



**Contaminants in ppm**



**Wear Metals in ppm**



**Particle Count (p/ml)**

Date	07/14/06	10/25/06	01/09/07	05/07/07
ISO PC	16/14/11	17/14/11	16/13/9	19/16/14
>4um	529	729	575	3469
>6um	92	142	72	607
>14um	18	13	4	143
>21um	75	3	1	59
>38um	16	0	0	12
>70um	3	0	0	4

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 Reports

<b>CRITICAL</b>	
<b>ECR</b>	<b>LCR</b>
<b>CRITICAL</b>	<b>MARGINAL</b>

LOCATION ID: TURB01 RES  
 DESCRIPTION: Turbine 1 Reservoir  
 COMPONENT: Turbine  
 LUBRICANT: Exxon Teresstic GTC 32  
 RESERV. CAP: 4000.0 Gal  
 LUBE TIME: 15000 Hours  
 TEST SUITE: R218

MACH HRS: 38000 Hours

SAMPLE DATE: 05/07/07  
 REC'D DATE: 05/10/07  
 REPORT DATE: 05/10/07  
 SPID #: 254858  
 CNTL #: 1565593  
 ANALYST: Hierro  
 BATCH #: 05/10/07-68

### WEAR PARTICLE ANALYSIS:

This sample contains large bearing wear particles. These particles range up to 100 microns in size and are composed of lead/tin babbitt. Bearing wear particles indicate rolling contact failure due to improper load, speed, and/or poor lubrication of equipment's mating surfaces.

### ANALYTICAL RESULTS:

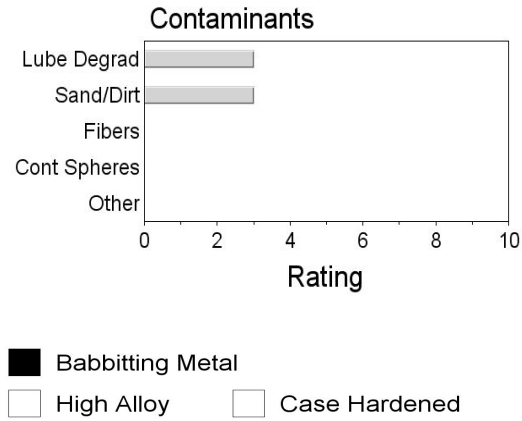
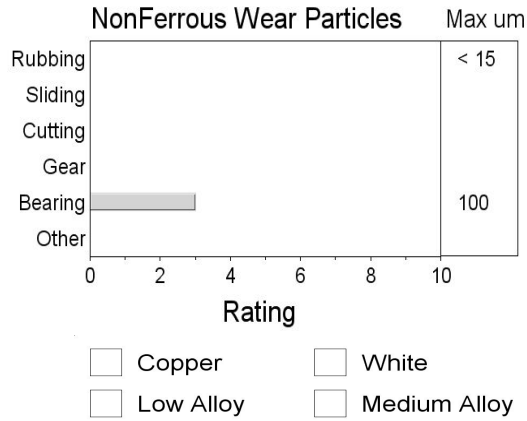
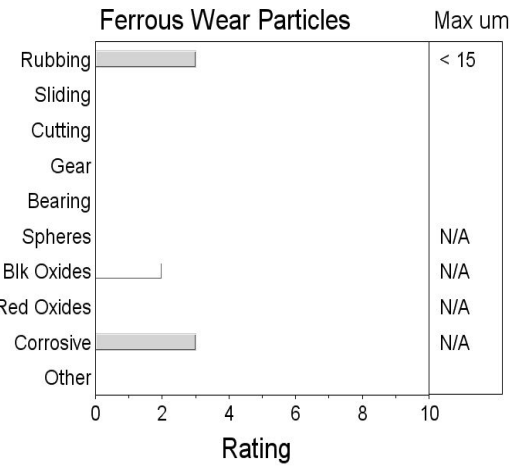
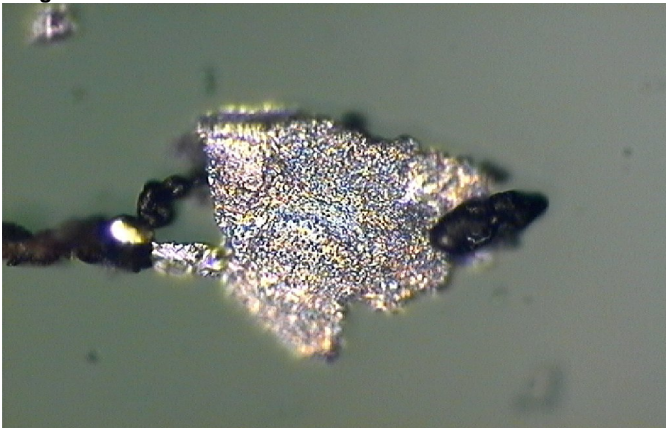
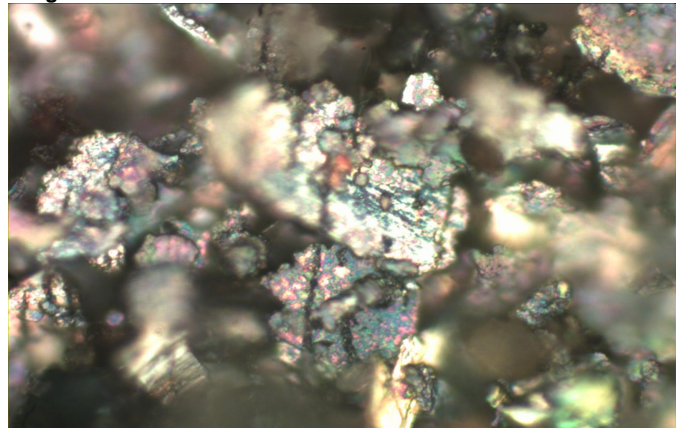


Image # 1 500X



This image depicts a large bearing wear particle composed of lead/tin babbitt.

Image # 2 500X



This image depicts high levels of babbitt bearing wear particles.

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 Reports

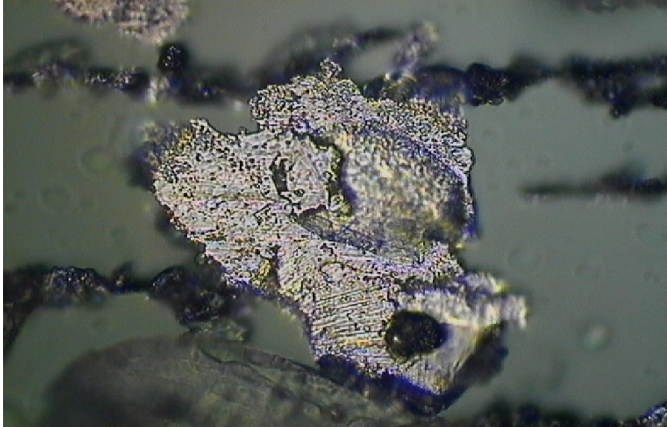
CRITICAL	
ECR	LCR
CRITICAL	MARGINAL

LOCATION ID: TURB01 RES  
DESCRIPTION: Turbine 1 Reservoir  
COMPONENT: Turbine  
LUBRICANT: Exxon Teresstic GTC 32  
RESERV. CAP: 4000.0 Gal  
LUBE TIME: 15000 Hours  
TEST SUITE: R218

MACH HRS: 38000 Hours

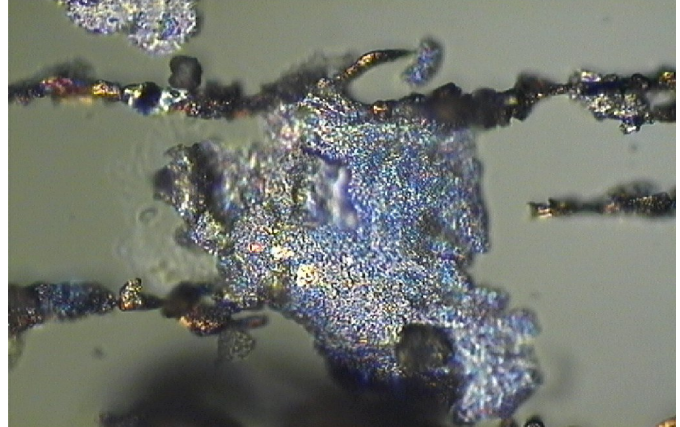
SAMPLE DATE: 05/07/07  
REC'D DATE: 05/10/07  
REPORT DATE: 05/10/07  
SPID #: 254858  
CNTL #: 1565593  
ANALYST: Hierro  
BATCH #: 05/10/07-68

Image # 3 500X



This image depicts babbitt bearing wear particles of up to 100 microns in size. This image is taken prior to heat treatment.

Image # 4 500X



This image depicts the same babbitt bearing wear particles of up to 100 microns in size. This image is taken after heat treatment.