BOARD INFORMATION PACKET

KANSAS CITY BPU

Board of Public Utilities
Kansas City, Kansas

Regular Meeting of

August 19, 2020

RP3™
Reliable Public Power Provider

ASSOCIATION OF METROPOLITAN WATER AGENCIES
Gold Award for Competitiveness Achievement

Table of Contents
August 19, 2020

Approval of Agenda
Agenda Item #III

Board of Public Utilities
Kansas City, Kansas

BOARD AGENDA

Regular Session
August 19, 2020 – 6:00 P.M.

I. Call to Order

II. Roll Call
____Ryan Eidson, At Large, Position 2
____Tom Groneman, District 2
____Robert L. Milan, Sr., District 1
____Jeff Bryant, District 3
____Mary L. Gonzales, At Large, Position 1
____Rose Mulvany Henry, At Large, Position 3

III. Approval of Agenda

IV. Approval of the Minutes of the Regular Session of August 5, 2020

V. Visitors

VI. General Manager / Staff Reports

i. COVID-19 Update

ii. CARES Act

iii. Online Service Application

iv. Customer Service Update

v. Revenue Bond Sale

vi. Miscellaneous Comments

VII. Board Comments

VIII. Adjourn

Approval of Minutes
Regular Session 8-5-20
Agenda Item #IV

REGULAR SESSION –WEDNESDAY AUGUST 5, 2020

STATE OF KANSAS)
) SS
CITY OF KANSAS CITY)

The Board of Public Utilities of Kansas City, Kansas (aka BPU, We, Us, Our) met remotely in Regular Session on Wednesday, August 5, 2020 at 6:00 P.M. The following Board Members were on the teleconference: Mr. Eidson, President; Robert L. Milan, Vice President; Mary Gonzales, Secretary; Jeff Bryant, Rose Mulvany Henry and Thomas Groneman.

Also on teleconference: William Johnson, General Manager; Angela Lawson, Deputy Chief Counsel; Lori Austin, Chief Financial Officer/Chief Administrative Officer; Jim Epp, Executive Director Water Operations; Johnnetta Hinson, Executive Director Customer Service; Jeremy Ash, Executive Director Electric Operations; Dong Quach, Executive Director Electric Production; Jerry Ohmes, Executive Director Electric Supply; Robert Kamp, IT Project Manager; David Mehlhaff, Chief Communications Officer; Dennis Dumovich, Director of Human Resources; Jody Franchett, Director Administrative Services and Paul Crocker, Supervisor Maintenance, Nearman Water Treatment.

A tape of this meeting is on file at the Board of Public Utilities.

Mr. Eidson called the Board Meeting to order at 6:00 P.M. He welcomed all that were listening or viewing the meeting. He stated the COVID-19 Pandemic had resulted in a State of Emergency disaster declared by the Governor which made it necessary to conduct the meeting using technology instead of in person. Those wishing to offer comments during the Visitors Comments section could click on the raised hand feature at the bottom of the application or window or press Star 9 and be connected by phone. As always, the public could email or call the BPU with any concerns. The Agenda could be found on the BPU website. If you were using Zoom, it would appear on your screen. Mr. Eidson introduced himself and the other Board Members along with the GM, and Legal Counsel.

Roll call was taken and all Board Members were present via teleconference.

Motion was made to approve the Agenda by Mr. Bryant, seconded by Mr. Groneman, and carried.

Motion was made to approve the Minutes of the Work Session of July 15, 2020 by Ms. Gonzales, seconded by Ms. Mulvany Henry, and carried.

Motion was made to approve the Minutes of the Regular Session of July 15, 2020 by Mr. Groneman, seconded by Mr. Bryant, and carried.

Mr. Eidson turned the meeting over to Mr. Johnson.

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Mr. Johnson asked Mr. Kamp if there were any visitors wishing to speak.

Mr. Kamp said no one had their hand raised via teleconference.

Item #7 – General Manager's Reports

i. COVID-19 Update/Cares Act: Mr. Johnson spoke to the Board about executive staff communications regarding the pandemic and the requirements of mask wearing/social distancing required at Level 3. He also briefed on these ongoing discussions:
   a. Working with employees with kids in school.
   b. Guidelines regarding employees getting tested.

Mr. Dumovich gave an update on company COVID -19 matters.

Mr. Johnson and Mr. Dumovich answered questions from the Board regarding communicating with employees about various protocols.

Mr. Johnson and Ms. Hinson also answered questions regarding customer service processes due to the continued closing of the lobby.

ii. June 2020 Financials: Ms. Austin presented the June 2020 Financials

iii. 2020 Second Quarter Financials: Ms. Austin gave a PowerPoint presentation on the second quarter financials (see attached).

Ms. Lawson confirmed that the June 2020 Financial approval could be encompassed in the approval of the Second Quarter Financials.

Motion was made to approve the 2020 Second Quarter Financial results by Ms. Gonzales, seconded by Jeff Bryant and carried.

iv. Rosedale Reliability Project – Argentine Distribution: Mr. Jeremy Ash updated the Board on current areas of focus with the Rosedale area project.

   a. In the Armourdale area around 8th and Douglas they were tying a couple of feeders together to improve reliability in that area. Work should be completed early in September.
   b. Work in the Barber substation area around 17th and Lawrence down to the 10th and Douglas area is ongoing. They would be setting smaller steel poles, similar

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in size to the Leavenworth Road and Legends area that would carry the distribution facility. They would also have the opportunity to move the distribution underneath the transmission line. This meant that all of our facility would be on one side of the road, any of the crossings that needed to happen, would happen under the street and pop back up and feed the north side of the road. After the coms companies move their facilities the area would be cleaned up and be much more appealing. Work should hopefully be completed by Thanksgiving.

Mr. Ash answered questions from the Board.

v. Water Maintenance Analysis: Mr. Paul Crocker gave a PowerPoint presentation to update the Board on predictive maintenance projects underway at the Nearman Water Treatment Plant. (see attached).

Mr. Crocker answered questions from the Board.

Revisit Item #6 Visitors

Mr. Carl Freese, 3312 Brown Avenue. Mr. Brown discussed with the Board his situation with his utility bill. He paid a bill that was not his and needed to have it switched to his account. He lived at the address from 2013 - 2016, then again this year.

Mr. Johnson said that Ms. Hinson, Executive Director of Customer Service, would follow-up with him.

Tamara Thierry, 2313 N. 21st St., was calling in support of Mr. Freese.

Item #8 Board Comments

Mr. Eidson thanked all for their presentations.

Mr. Groneman echoed Mr. Eidson's comments. He expressed appreciation for Mr. Crocker's expertise in his field. Also, he thanked the staff for their diligence during this time.

Mr. Milan echoed the previous comments.

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Mr. Bryant echoed the previous comments.

Ms. Gonzales echoed the previous comments. She also expressed her thanks to Mr. Dumovich for keeping them updated on COVID situation. She wanted everyone to stay safe.

Ms. Mulvany Henry echoed the previous comments.

Motion was made to adjourn the meeting at 7:45 P.M. by Mr. Bryant, seconded by Ms. Mulvany Henry and carried.

ATTEST: APPROVED:

_____ _____

Secretary President

General Manager/
Staff Reports
Agenda Item #VI

KANSAS CITY BPU
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2020 Second Quarter Financial Results

August 5, 2020

KANSAS CITY BPU
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Financial Results

2020 Billed kWh (YTD Jan – June)

Electric	(CY) 2020 YTD	(PY) 2019 YTD	
Residential	258,066,195	262,522,945	
Commercial	429,749,834	457,422,597	
Industrial	246,993,453	285,559,654	
	934,809,482	1,005,505,196	-7.0%

Lower usage in 2020 compared to 2019 due to weather (more Residential) and also the COVID-19 shutdown of businesses.

Residential – down 1.7% Commercial – down 6% Industrial – down 13%

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Financial Results

2020 Billed CCF's (YTD Jan – June)

Water	(CY) 2020 YTD	(PY) 2019 YTD	
Residential	1,667,712	1,620,776	
Commercial	1,097,182	1,153,806	
Industrial	926,459	998,117	
	3,691,353	3,772,699	-2.2%

Lower usage compared to 2019 due to business shutdowns due to COVID-19
Residential – Up 3% Commercial – Down 5% Industrial - Down 7%

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Financial Results

Revenues – June 2020

	(CY) 2020 June	(PY) 2019 June		Budget 2020 June	(CY) 2020 June	
Electric	$ 23.363	$ 22.052		$ 24.396	$ 23.363	
Water	4.299	4.397		4.845	4.299	
Combined	$ 27.662	$ 26.449	4.6%	$ 29.241	$ 27.662	-5.4%

**Dollars in millions

Actual Compared to 2020 Budget

Electric down 4%

Water down 11%

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Financial Results

Operating Expenses – June 2020

	(CY) 2020 June	(PY) 2019 June		Budget 2020 June	(CY) 2020 June	
Electric	$ 18.168	$ 15.949		$ 18.566	$ 18.168	
Water	2.564	2.826		3.131	2.564	
Combined	$ 20.732	$ 18.775	10.4%	$ 21.697	$ 20.732	-4.4%

**Dollars in millions

Variance – MTD comparing Budget to Actual for 2020

Electric		Water	
Production	- 16% down	Production	- 27% down
Purchased Power	- 16% up	T&D	- 33% down
Fuel	- 6% up	G &A	- 4% up
T&D	- 22% down		
G &A	- 13% down		

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Financial Results

Change in Net Position – June 2020

	(CY) 2020 June	(PY) 2019 June	Budget 2020 June	(CY) 2020 June
Electric	$ 1.329	$ 1.670	$ 1.337	$ 1.329
Water	0.927	0.891	1.015	0.927
Combined	$ 2.256	$ 2.561	$ 2.352	$ 2.256

**Dollars in millions

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Financial Results

Revenues – Second Quarter 2020

	(CY) 2020 2nd Quarter	(PY) 2019 2nd Quarter		Budget 2020 2nd Quarter	(CY) 2020 2nd Quarter	
Electric	$ 62.515	$ 62.892		$ 67.815	$ 62.515	
Water	12.160	12.609		13.183	12.160	
Combined	$ 74.675	$ 75.501	-1.1%	$ 80.998	$ 74.675	-7.8%

**Dollars in millions

Actual Compared to 2020 Budget

Electric down 8%

Water down 8%

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Financial Results

Revenues – 2020 YTD

	(CY) 2020 YTD	(PY) 2019 YTD		Budget 2020 YTD	(CY) 2020 YTD	
Electric	$ 132.438	$ 135.486		$ 138.216	$ 132.438	
Water	24.305	24.720		25.181	24.305	
Combined	$ 156.743	$ 160.206	-2.2%	$ 163.397	$ 156.743	-4.1%

**Dollars in millions

Variance – YTD comparing Budget to Actual for 2020

Electric: - *Down 4%*
- Residential ($3.4M)
- Commercial ($3.1M)
- Industrial ($1.5M)

Water: *Down 2%*
- Residential ($474K)
- Commercial ($595K)
- Industrial $637K

Through first 6 months we have recognized the full amount of $5.6 million deferred revenue from the 2019 ERC

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Financial Results

Operating Expenses – Second Quarter 2020

	(CY) 2020 2nd Quarter	(PY) 2019 2nd Quarter		Budget 2020 2nd Quarter	(CY) 2020 2nd Quarter	
Electric	$ 47.285	$ 48.952		$ 56.596	$ 47.285	
Water	7.910	9.118		9.479	7.910	
Combined	$ 55.195	$ 58.070	-5.0%	$ 66.075	$ 55.195	-16.5%

**Dollars in millions

Variance – 2nd Qtr comparing Budget to Actual for 2020

Electric	
Production	- 14% down
Purchased Power	- 15% down
Fuel	- 19% down
T&D	- 19% down
G &A	- 26% down

Water	
Production	- 23% down
T&D	- 23% down
G &A	- 18% down

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Financial Results

Operating Expenses – 2020 YTD (Total)

	(CY) 2020 YTD	(PY) 2019 YTD		Budget 2020 YTD	(CY) 2020 YTD	
Electric	$ 93.830	$ 98.107		$ 108.518	$ 93.830	
Water	16.755	17.844		18.955	16.755	
Combined	$ 110.585	$ 115.951	-4.6%	$ 127.473	$ 110.585	-13.2%

**Dollars in millions

Actual Compared to 2020 Budget

Electric down 15%

Water down 12%

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Financial Results

Operating Expenses – 2020 YTD less Depreciation

	(CY) 2020 YTD	(PY) 2019 YTD		Budget 2020 YTD	(CY) 2020 YTD	
Electric	$ 80.473	$ 83.998		$ 94.188	$ 80.473	
Water	12.869	13.939		15.065	12.869	
Combined	$ 93.342	$ 97.937	-4.7%	$ 109.253	$ 93.342	-14.6%

**Dollars in millions

Variance – YTD comparing Budget to Actual 2020

Electric:

Purchased Power	($4.6M)
Fuel	($301K)
Production	($3.2M)
T&D	($2.8M)
G&A	($2.5M)

Water:

Production	($564K)
T&D	($1.2M)
G&A	($436K)

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Financial Results

Change in Net Position – Second Quarter 2020

	(CY) 2020 2nd Quarter	(PY) 2019 2nd Quarter		Budget 2020 2nd Quarter	(CY) 2020 2nd Quarter	
Electric	$ 3.491	$ 1.083		$ (1.711)	$ 3.491	
Water	2.220	1.652		1.754	2.220	
Combined	$ 5.711	$ 2.735		$ 0.043	$ 5.711	

**Dollars in millions

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Financial Results

Change in Net Position – 2020 YTD

	(CY) 2020 YTD	(PY) 2019 YTD		Budget 2020 YTD	(CY) 2020 YTD	
Electric	$ 13.865	$ 11.024		$ 3.469	$ 13.865	
Water	3.233	2.619		2.072	3.233	
Combined	$ 17.098	$ 13.643		$ 5.541	$ 17.098	

**Dollars in millions

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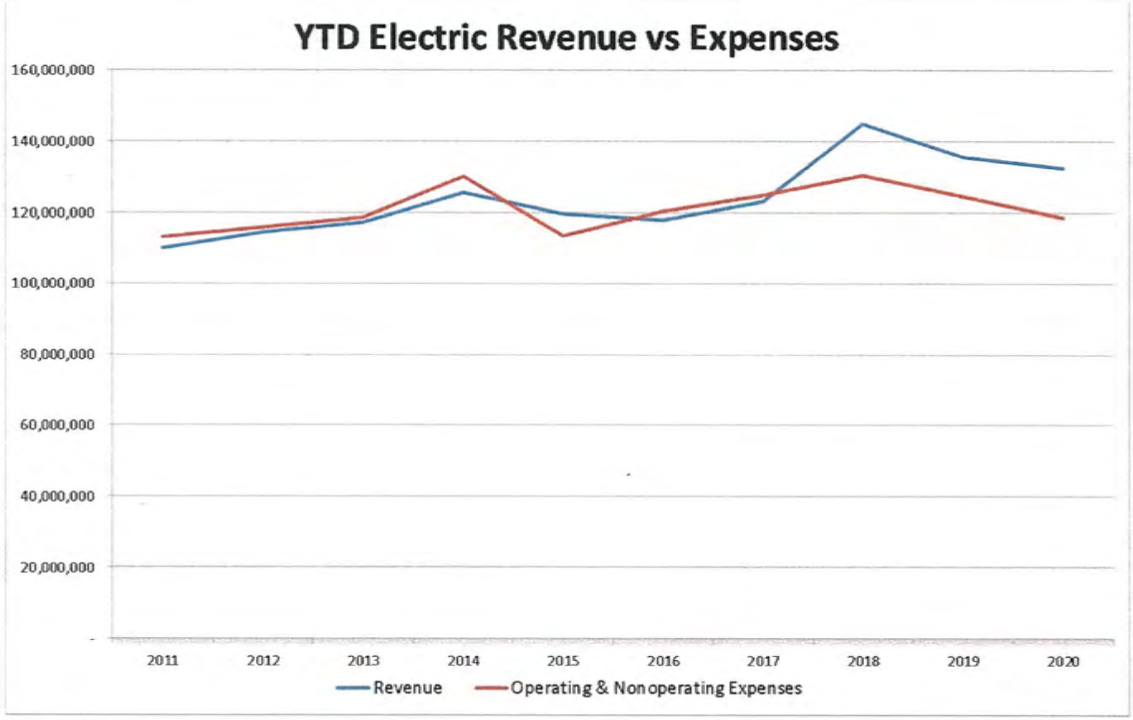
Financial Results – 10 Year Trend



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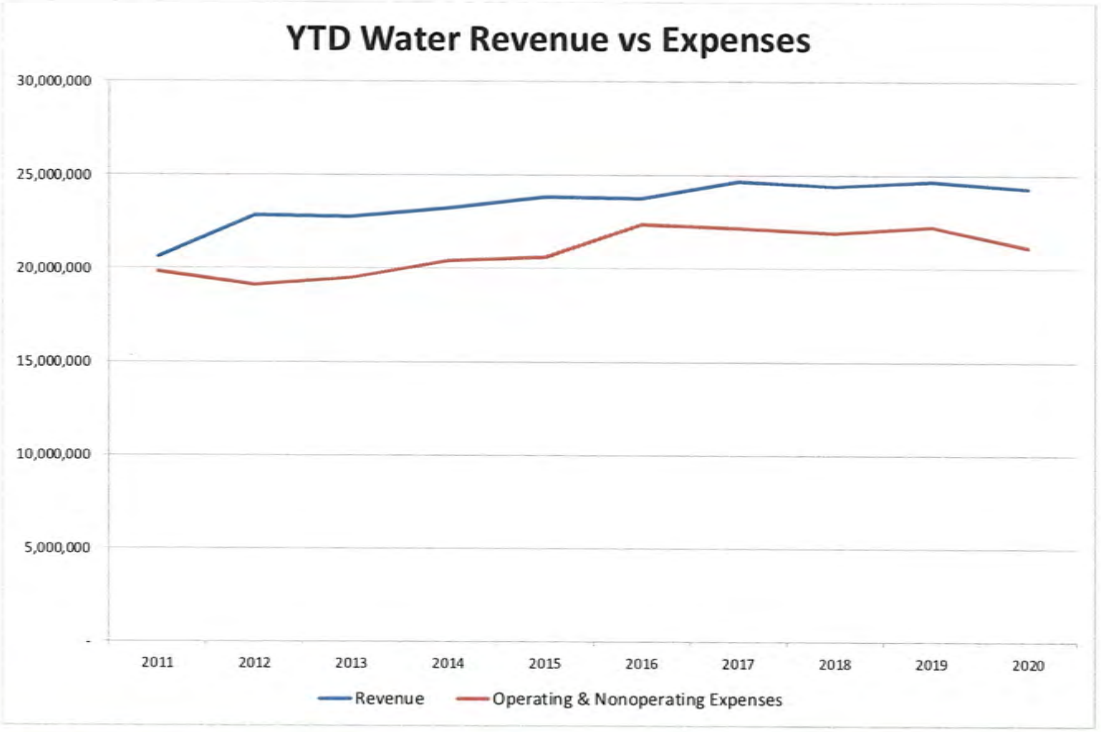
Financial Results – 10 Year Trend



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Financial Results

Cash Position

	(CY) 2020 June	(PY) 2019 June	2020 May
Combined (E&W)	$ 45.67	$ 40.61	$ 46.11
Days Cash-on-Hand	76	70	78

**Dollars in millions

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Financial Results

Balance Sheet: Notables

	(CY) 2020 June	(PY) 2019 June
Fuel Inventory	$ 4.100	$ 6.472
Bond Dollars 2016A (AQC)	$ -	$ 2.047
Bond Dollars 2016C (Elec T&D)	$ 1.541	$ 27.794

In May, 2020, we recognized a Regulatory Asset for Quindaro Units 1 and 2 in the amount of $73.6 million. The annual amortization will be around $3.6 million for 20 years and we began recognizing it in May, 2020.

**Dollars in millions

KANSAS CITY BPU
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Financial Results

Capital Spending

	(CY) 2020 YTD	(PY) 2019 YTD	2020 Budget		
Electric	$ 22.38	$ 16.60	$ 41.27		
Water	3.74	2.40	12.73		
Common	1.15	0.12	4.60		
Total YTD Capital	$ 27.26	$ 19.12	$ 58.60	Remaining	53%

**Dollars in millions

Major projects in 2020:

Rosedale Project - $10.2M
N1 Bottom Ash Handling System- $3.0M
Nearman 316B Project - $156K
Mill Liners - $555K
Water Leak, Valve, System Imp. - $956K
UG/CMIP Water Distribution - $1.4M

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Financial Results

Debt Coverage

Debt Coverage with PILOT

	(CY) 2020 June	(PY) 2019 June
Electric	2.03	2.32
Water	1.76	2.07
Combined	2.01	2.31

Debt Coverage w/o PILOT

	(CY) 2020 2nd Quarter	(PY) 2019 June
Electric	1.44	1.70
Water	1.33	1.63
Combined	1.44	1.72

Financial Guideline Target 1.6 to 2.1 times with PILOT

Moving towards Predictive Maintenance with Condition Monitoring technology

(Ultrasound and Vibration Analysis)

a work in progress

Paul Crocker: Supervisor of Maintenance at Nearman Water

Maintenance Strategies (brief overview)

- Run to Failure – use where appropriate (lights, noncritical assets)
- Preventive Maintenance – Where no suitable condition monitoring technologies are available (Chlorine and Ammonia handling assets) – typically risk and calendar or run hour based
- Proactive Maintenance – Tightening, Lubrication, Cleaning (TLC)
- Precision Maintenance – Laser Alignment, Precision greasing (Grease Meter and Ultrasound)
- Predictive Maintenance – Oil Analysis, Thermal Imaging, Ultrasonic (passive and active) technologies, Motor Current Signature Analysis, etc

Run to Failure

- Examples
  - Overhead room light bulbs - no one tests them; we wait for them to fail and we replace them
  - Television –we replace them when they quit working
  - Cell Phones – we replace them when they quit working and get a new one
  - Toilets – we repair them when they fail to flush

This is a valid maintenance strategy where the cost and impact of failure is less than the cost of preventive actions – *It's a deliberate decision based on economical effectiveness not to preform PM, but to let the asset run to fail.*

Preventive Maintenance

A strategy based on inspection, replacement and overhaul at fixed interval regardless of its actual condition at that time.

- Examples
  - Car tires - we can observe when they are sufficiently worn with our eyes and replace them (hopefully) before they would completely fail
  - Car engine oil – 4000 miles
  - Overhauling of plant Chlorine handling and feeding equipment – 1 year (Part of our Risk Management Program)

PM's sometime expose hidden problems that cause generation of follow-up work. Generally done where no technology exists to determine internal condition, or time set due to regulatory constraint.

Proactive Maintenance

Maintenance activities that are regularly taken to ensure the machine continues to provide trouble free operation

- Tighten – Check for and tighten loose connections (mechanical and electrical)
- Lubricate – Simple lubrication tasks (replacing color change desiccant breathers)
- Clean – Keep machine wiped down, and surrounding area clean and orderly (changing air filters)
- AKA - TLC

Precision Maintenance

Very specific precision maintenance done to ensure trouble free operation, minimize wear and downtime. Involves specialized tools and training.

- Laser Alignment - Motor, Coupling, Gearbox
- Laser Alignment - of Belts and Sheaves
- Precision Lubrication – Dedicated clear grease gun, Specific dedicated lubricant, Grease Meter, Structureborn Ultrasound tool
- Filtration – Filtering lubricant fluids to reduce particle contamination

Predictive / Condition Based Maintenance

- Infrared – Thermal Imager or spot radiometer
- Oil Analysis – Samples taken at interval (run hour, or calendar based)
- Ultrasound – Active (Transducer and Transceiver) – Used for thickness testing (signal is emitted from the device and received back then analyzed) – Fish Finder technology PC1
- Ultrasound – Passive (Structureborne and Airborne) – Inaudible sounds are generated by equipment heterodyned and analyzed – Can tell you something is wrong very quickly
  - Friction
  - Impacting
  - Turbulence
- Vibration Analysis – Transducer converts mechanical vibration to electrical signal for amplitude and frequency that is analyzed by an analyst

Slide 7

PC1 May remove this as its just lengthens the presentation
Paul Crocker, 8/3/2020

Sound

- Infrasound is anything below 20Hz and below the range of human hearing
- Humans hear a range of frequency's 20Hz to 20kHz
- Ultrasound ranges from 20kHz to 40kHz and is above the level we can hear
- SDT instruments listen to frequency's 36kHz to 40kHz with a sweet spot of 38.8 kHz

Why we do Condition Monitoring

Uptime® Elements

Technical Activities

REM Reliability Engineering for Maintenance

Ca criticality analysis	Rsd reliability strategy development
Re reliability engineering	Rca root cause analysis
Cp capital project management	Rcd reliability centered design

ACM Asset Condition Management

Aci asset condition information	Vib vibration analysis	Fa fluid analysis
Ut ultrasound testing	Ir infrared thermal imaging	Mt motor testing
Ab alignment and balancing	Ndt non destructive testing	Lu machinery lubrication

WEM Work Execution Management

Pm preventive maintenance	Ps planning and scheduling
Odr operator driven reliability	Mro mro-spares management
De defect elimination	Cmms computerized maintenance management system

Leadership

LER Leadership for Reliability

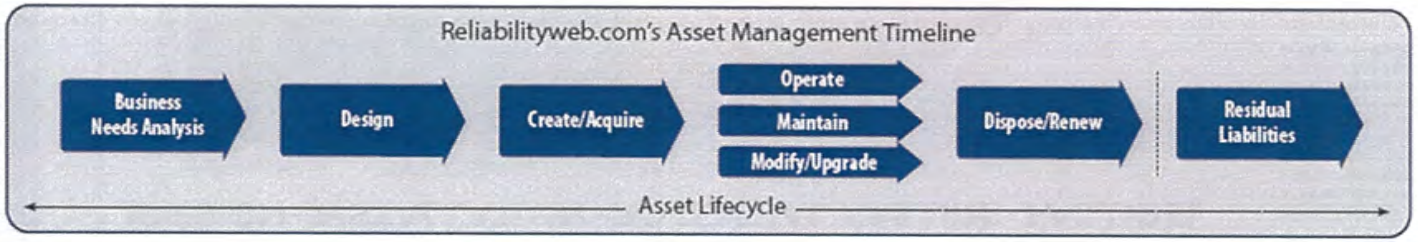
Es executive sponsorship	Opx operational excellence
Hcm human capital management	Cbl competency based learning
Int integrity	Rj reliability journey

Business Processes

AM Asset Management

Sp strategy and plans	Cr corporate responsibility	Samp strategic asset management plan
Ri risk management	Ak asset knowledge	Alm asset lifecyde management
Dm decision making	Pi performance indicators	Ci continuous improvement

A Reliability Framework and Asset Management System™



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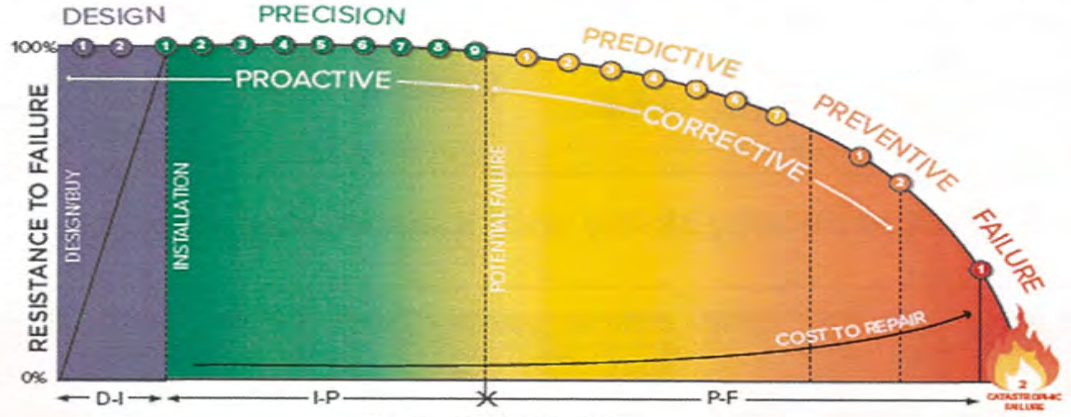
HOW FAILURE OCCURS

D-I-P-F CURVE
(DESIGN-INSTALLATION-POTENTIAL FAILURE-FAILURE)



DESIGN/BUY
1. Design for Reliability (DFR)
2. Purchase for Purpose

PRECISION
1. Precision Commissioning
2. Precision Installation
3. Defect Elimination
4. Precision Alignment and Balancing
5. Work Processes and Procedures
6. Asset Condition Management
7. Lubrication Reliability
8. Clean to Inspect (5S)
9. Operate for Reliability

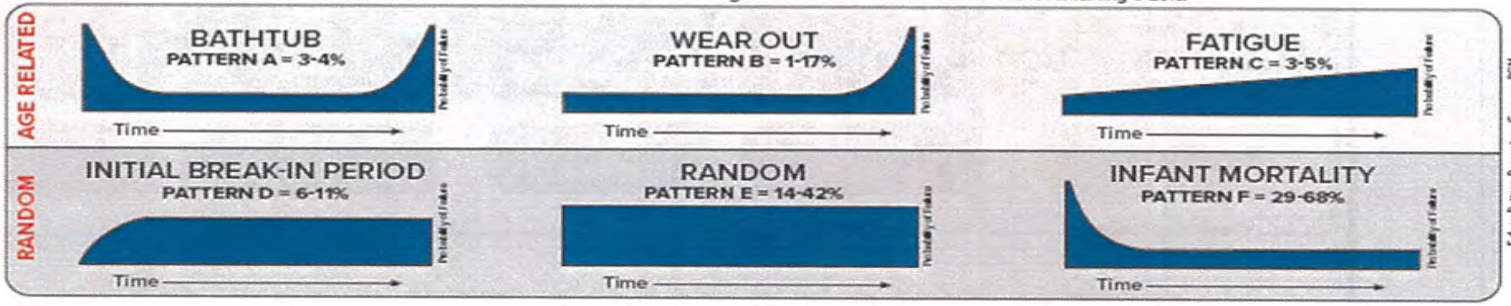
PREDICTIVE
1. Condition Directed Tasks
2. Ultrasound Testing (UT)
3. Fluid Analysis (FA)
4. Vibration Analysis (VIB)
5. Motor Testing (MT)
6. Infrared Imaging (IR)
7. Non Destructive Testing (NDT)

PREVENTIVE
1. Time-Directed Tasks
2. Human Senses (audible noise, hot to touch, smell)

FAILURE
1. Functional Failure
2. Catastrophic Failure

FAILURE PATTERNS

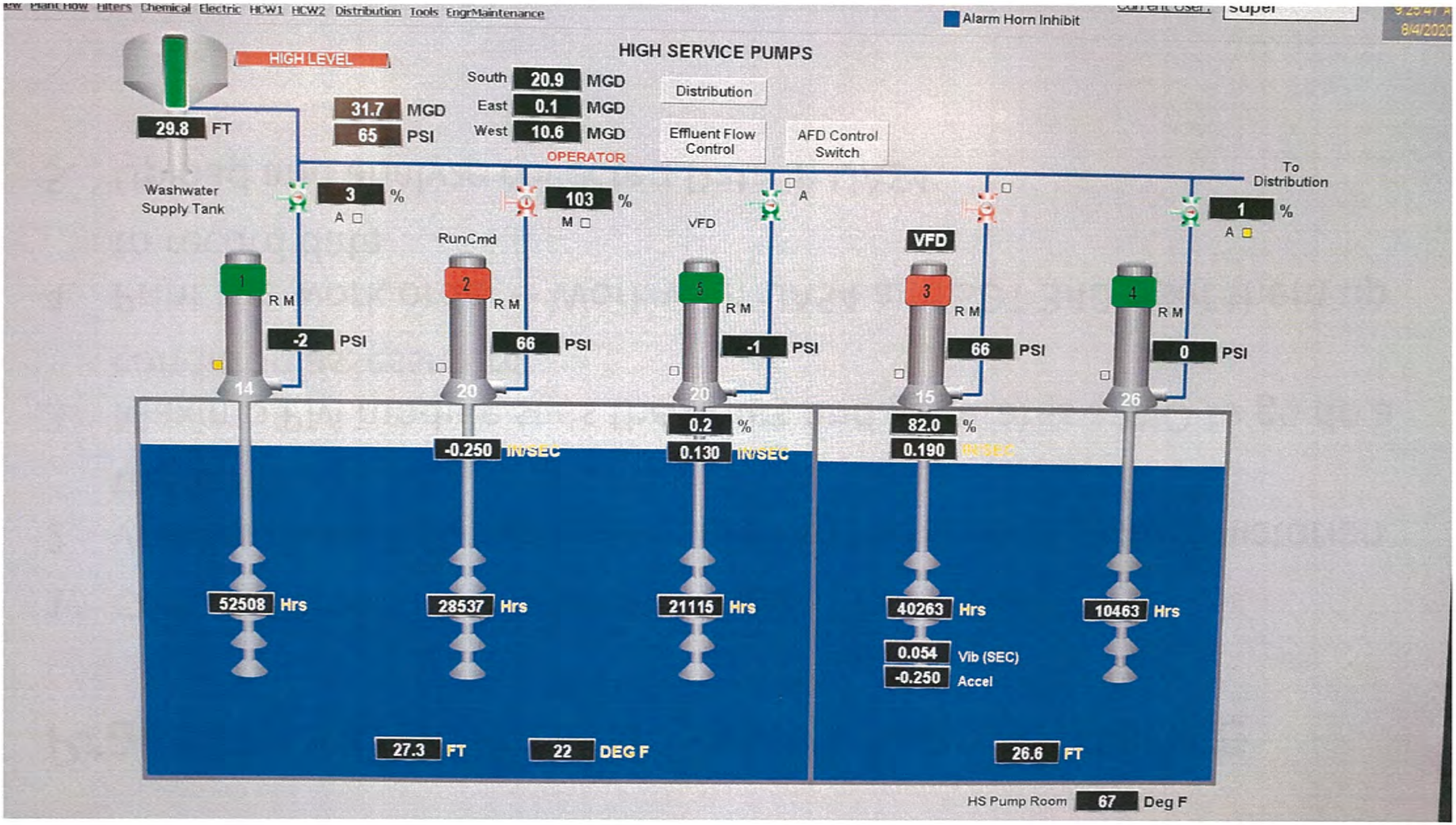
Random failures account for 77-92% of total failures and age related failure characteristics for the remaining 8-23%.

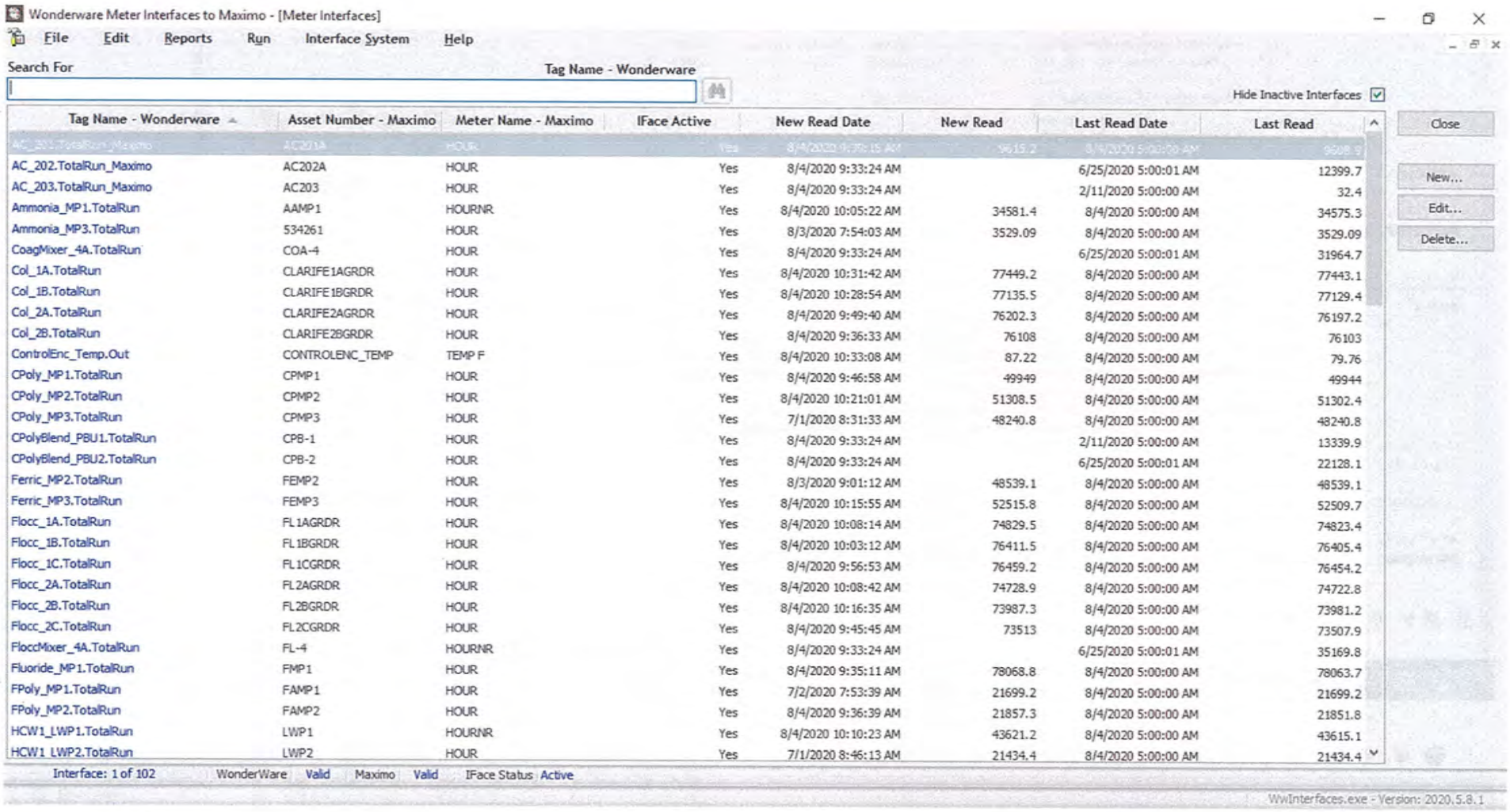


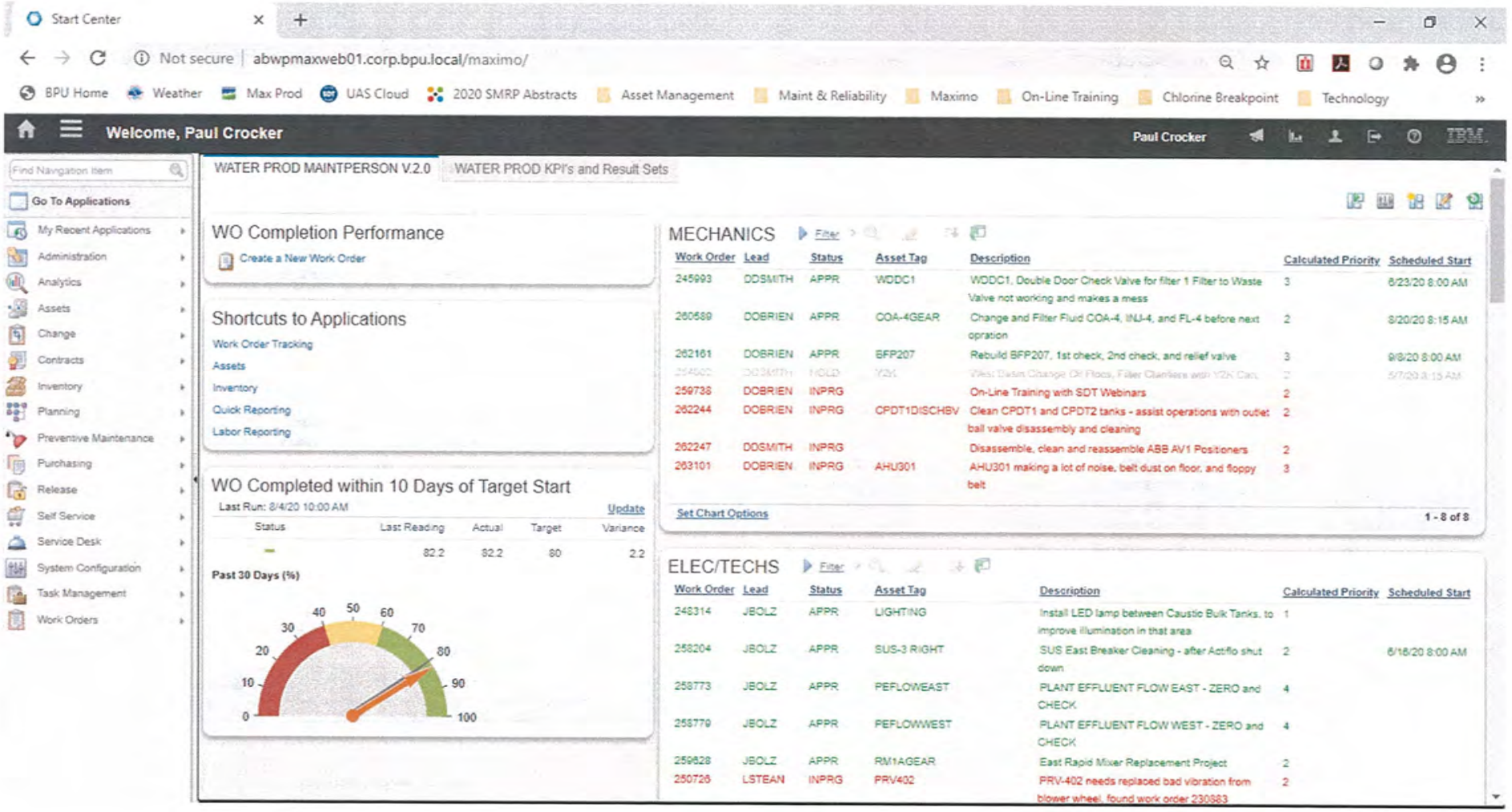
Failure Pattern Percentage Sources: RCM by Nowlan and Heap, US Navy, Bromberg

Practical - Condition Based Maintenance

1. Control System – High Service Pump 3 Run Hours
2. WwInterfaces – Sends run hours from the control system historian to Maximo
3. Maximo PM module sees the hours and generates a WO to go do a condition assessment
4. Print the work order – Work with UAS4 and SDT 340 – set them up to record data
5. Upload and analyze collected Data in UAS4


Plant How Filters Chemical Electric HCW1 HCW2 Distribution Tools EngrMaintenance
Alarm Horn Inhibit
HIGH SERVICE PUMPS
HIGH LEVEL
29.8 FT
Washwater Supply Tank
31.7 MGD
65 PSI
South 20.9 MGD
East 0.1 MGD
West 10.6 MGD
OPERATOR
Distribution
Effluent Flow Control
AFD Control Switch
To Distribution
3 %
A
103 %
M
A
1 %
A
RunCmd
VFD
VFD
1
R M
-2 PSI
14
2
R M
66 PSI
20
5
R M
-1 PSI
20
3
R M
66 PSI
15
4
R M
0 PSI
26
0.2 %
-0.250 IN/SEC
0.130 IN/SEC
82.0 %
0.190 IN/SEC
52508 Hrs
28537 Hrs
21115 Hrs
40263 Hrs
10463 Hrs
0.054 Vib (SEC)
-0.250 Accel
27.3 FT
22 DEG F
26.6 FT
HS Pump Room 67 Deg F


Wonderware Meter Interfaces to Maximo - [Meter Interfaces]
File
Edit
Reports
Run
Interface System
Help
Search For
Tag Name - Wonderware
Hide Inactive Interfaces
Close
New...
Edit...
Delete...
Tag Name - Wonderware
Asset Number - Maximo
Meter Name - Maximo
IFace Active
New Read Date
New Read
Last Read Date
Last Read
AC_202.TotalRun_Maximo AC202A HOUR Yes 8/4/2020 9:33:24 AM 6/25/2020 5:00:01 AM 12399.7
AC_203.TotalRun_Maximo AC203 HOUR Yes 8/4/2020 9:33:24 AM 2/11/2020 5:00:00 AM 32.4
Ammonia_MP1.TotalRun AAMP1 HOURNR Yes 8/4/2020 10:05:22 AM 34581.4 8/4/2020 5:00:00 AM 34575.3
Ammonia_MP3.TotalRun 534261 HOUR Yes 8/3/2020 7:54:03 AM 3529.09 8/4/2020 5:00:00 AM 3529.09
CoagMixer_4A.TotalRun COA-4 HOUR Yes 8/4/2020 9:33:24 AM 6/25/2020 5:00:01 AM 31964.7
Col_1A.TotalRun CLARIFE1AGRDR HOUR Yes 8/4/2020 10:31:42 AM 77449.2 8/4/2020 5:00:00 AM 77443.1
Col_1B.TotalRun CLARIFE1BGRDR HOUR Yes 8/4/2020 10:28:54 AM 77135.5 8/4/2020 5:00:00 AM 77129.4
Col_2A.TotalRun CLARIFE2AGRDR HOUR Yes 8/4/2020 9:49:40 AM 76202.3 8/4/2020 5:00:00 AM 76197.2
Col_2B.TotalRun CLARIFE2BGRDR HOUR Yes 8/4/2020 9:36:33 AM 76108 8/4/2020 5:00:00 AM 76103
ControlEnc_Temp.Out CONTROLENC_TEMP TEMP F Yes 8/4/2020 10:33:08 AM 87.22 8/4/2020 5:00:00 AM 79.76
CPoly_MP1.TotalRun CPMP1 HOUR Yes 8/4/2020 9:46:58 AM 49949 8/4/2020 5:00:00 AM 49944
CPoly_MP2.TotalRun CPMP2 HOUR Yes 8/4/2020 10:21:01 AM 51308.5 8/4/2020 5:00:00 AM 51302.4
CPoly_MP3.TotalRun CPMP3 HOUR Yes 7/1/2020 8:31:33 AM 48240.8 8/4/2020 5:00:00 AM 48240.8
CPolyBlend_PBU1.TotalRun CPB-1 HOUR Yes 8/4/2020 9:33:24 AM 2/11/2020 5:00:00 AM 13339.9
CPolyBlend_PBU2.TotalRun CPB-2 HOUR Yes 8/4/2020 9:33:24 AM 6/25/2020 5:00:01 AM 22128.1
Ferric_MP2.TotalRun FEMP2 HOUR Yes 8/3/2020 9:01:12 AM 48539.1 8/4/2020 5:00:00 AM 48539.1
Ferric_MP3.TotalRun FEMP3 HOUR Yes 8/4/2020 10:15:55 AM 52515.8 8/4/2020 5:00:00 AM 52509.7
Flocc_1A.TotalRun FL1AGRDR HOUR Yes 8/4/2020 10:08:14 AM 74829.5 8/4/2020 5:00:00 AM 74823.4
Flocc_1B.TotalRun FL1BGRDR HOUR Yes 8/4/2020 10:03:12 AM 76411.5 8/4/2020 5:00:00 AM 76405.4
Flocc_1C.TotalRun FL1CGRDR HOUR Yes 8/4/2020 9:56:53 AM 76459.2 8/4/2020 5:00:00 AM 76454.2
Flocc_2A.TotalRun FL2AGRDR HOUR Yes 8/4/2020 10:08:42 AM 74728.9 8/4/2020 5:00:00 AM 74722.8
Flocc_2B.TotalRun FL2BGRDR HOUR Yes 8/4/2020 10:16:35 AM 73987.3 8/4/2020 5:00:00 AM 73981.2
Flocc_2C.TotalRun FL2CGRDR HOUR Yes 8/4/2020 9:45:45 AM 73513 8/4/2020 5:00:00 AM 73507.9
FloccMixer_4A.TotalRun FL-4 HOURNR Yes 8/4/2020 9:33:24 AM 6/25/2020 5:00:01 AM 35169.8
Fluoride_MP1.TotalRun FMP1 HOUR Yes 8/4/2020 9:35:11 AM 78068.8 8/4/2020 5:00:00 AM 78063.7
FPoly_MP1.TotalRun FAMP1 HOUR Yes 7/2/2020 7:53:39 AM 21699.2 8/4/2020 5:00:00 AM 21699.2
FPoly_MP2.TotalRun FAMP2 HOUR Yes 8/4/2020 9:36:39 AM 21857.3 8/4/2020 5:00:00 AM 21851.8
HCW1_LWP1.TotalRun LWP1 HOURNR Yes 8/4/2020 10:10:23 AM 43621.2 8/4/2020 5:00:00 AM 43615.1
HCW1_LWP2.TotalRun LWP2 HOUR Yes 7/1/2020 8:46:13 AM 21434.4 8/4/2020 5:00:00 AM 21434.4
Interface: 1 of 102
WonderWare Valid
Maximo Valid
IFace Status Active
WwInterfaces.exe - Version: 2020.5.8.1


Start Center
Not secure | abwpmaxweb01.corp.bpu.local/maximo/
BPU Home
Weather
Max Prod
UAS Cloud
2020 SMRP Abstracts
Asset Management
Maint & Reliability
Maximo
On-Line Training
Chlorine Breakpoint
Technology
Welcome, Paul Crocker
Paul Crocker
IBM
Find Navigation Item
Go To Applications
My Recent Applications
Administration
Analytics
Assets
Change
Contracts
Inventory
Planning
Preventive Maintenance
Purchasing
Release
Self Service
Service Desk
System Configuration
Task Management
Work Orders
WATER PROD MAINTPERSON V.2.0
WATER PROD KPI's and Result Sets
WO Completion Performance
Create a New Work Order
Shortcuts to Applications
Work Order Tracking
Assets
Inventory
Quick Reporting
Labor Reporting
WO Completed within 10 Days of Target Start
Last Run: 8/4/20 10:00 AM
Update
Status
Last Reading
Actual
Target
Variance
82.2
82.2
80
2.2
Past 30 Days (%)
0
10
20
30
40
50
60
70
80
90
100
MECHANICS
Filter
Work Order
Lead
Status
Asset Tag
Description
Calculated Priority
Scheduled Start
245993 DDSMITH APPR WDDC1 WDDC1, Double Door Check Valve for filter 1 Filter to Waste Valve not working and makes a mess 3 8/23/20 8:00 AM
260589 DOBRIEN APPR COA-4GEAR Change and Filter Fluid COA-4, INJ-4, and FL-4 before next opration 2 8/20/20 8:15 AM
262161 DOBRIEN APPR BFP207 Rebuild BFP207, 1st check, 2nd check, and relief valve 3 9/8/20 8:00 AM
259738 DOBRIEN INPRG On-Line Training with SDT Webinars 2
262244 DOBRIEN INPRG CPDT1DISCHBV Clean CPDT1 and CPDT2 tanks - assist operations with outlet ball valve disassembly and cleaning 2
262247 DDSMITH INPRG Disassemble, clean and reassemble ABB AV1 Positioners 2
263101 DOBRIEN INPRG AHU301 AHU301 making a lot of noise, belt dust on floor, and floppy belt 3
Set Chart Options
1 - 8 of 8
ELEC/TECHS
Filter
Work Order
Lead
Status
Asset Tag
Description
Calculated Priority
Scheduled Start
248314 JBOLZ APPR LIGHTING Install LED lamp between Caustic Bulk Tanks, to improve illumination in that area 1
258204 JBOLZ APPR SUS-3 RIGHT SUS East Breaker Cleaning - after Actiflo shut down 2 6/18/20 8:00 AM
258773 JBOLZ APPR PEFLOWEAST PLANT EFFLUENT FLOW EAST - ZERO and CHECK 4
258779 JBOLZ APPR PEFLOWWEST PLANT EFFLUENT FLOW WEST - ZERO and CHECK 4
259628 JBOLZ APPR RM1AGEAR East Rapid Mixer Replacement Project 2
250726 LSTEAN INPRG PRV402 PRV-402 needs replaced bad vibration from blower wheel, found work order 230583 2

KANSAS CITY BPU

THE POWER OF COMMUNITY

Work Order Details

263125: HS3 Condition Assessment UE, Vib, Temp, RPM

Asset: HS3 HSP-3 8 MGD
BPU Tag: HS3
Location: PD_HS PUMP DATA

Sched Start:	8/4/20
Sched Finish:	8/4/20
Target Start:	8/4/20
Target Finish:	8/4/20
Actual Start:	
Actual Finish:	
Report Date:	8/4/20
Reported By:	PCROCKER

Site:	WPROC
Priority:	2
Work Type:	PM
Status:	APPR
Parent:	
Failure Class:	
Problem Code:	
GL Account:	W-3900-65200-4326

Job Plan:	SDT340
Supervisor:	
Lead:	
Vendor:	
Owner:	
Owner Group:	
Service:	
Service Group:	
Classification:	PA CD NI

Task IDs

Task ID	Description	Status	Measurement Point	Value	Date	Observations
10	Download Route with Asset to be assessed from UAS4 to SDT340	APPR		0		
20	Obtain readings in route	APPR		0		
30	Upload Readings to UAS4 then clear readings from 340	APPR		0		

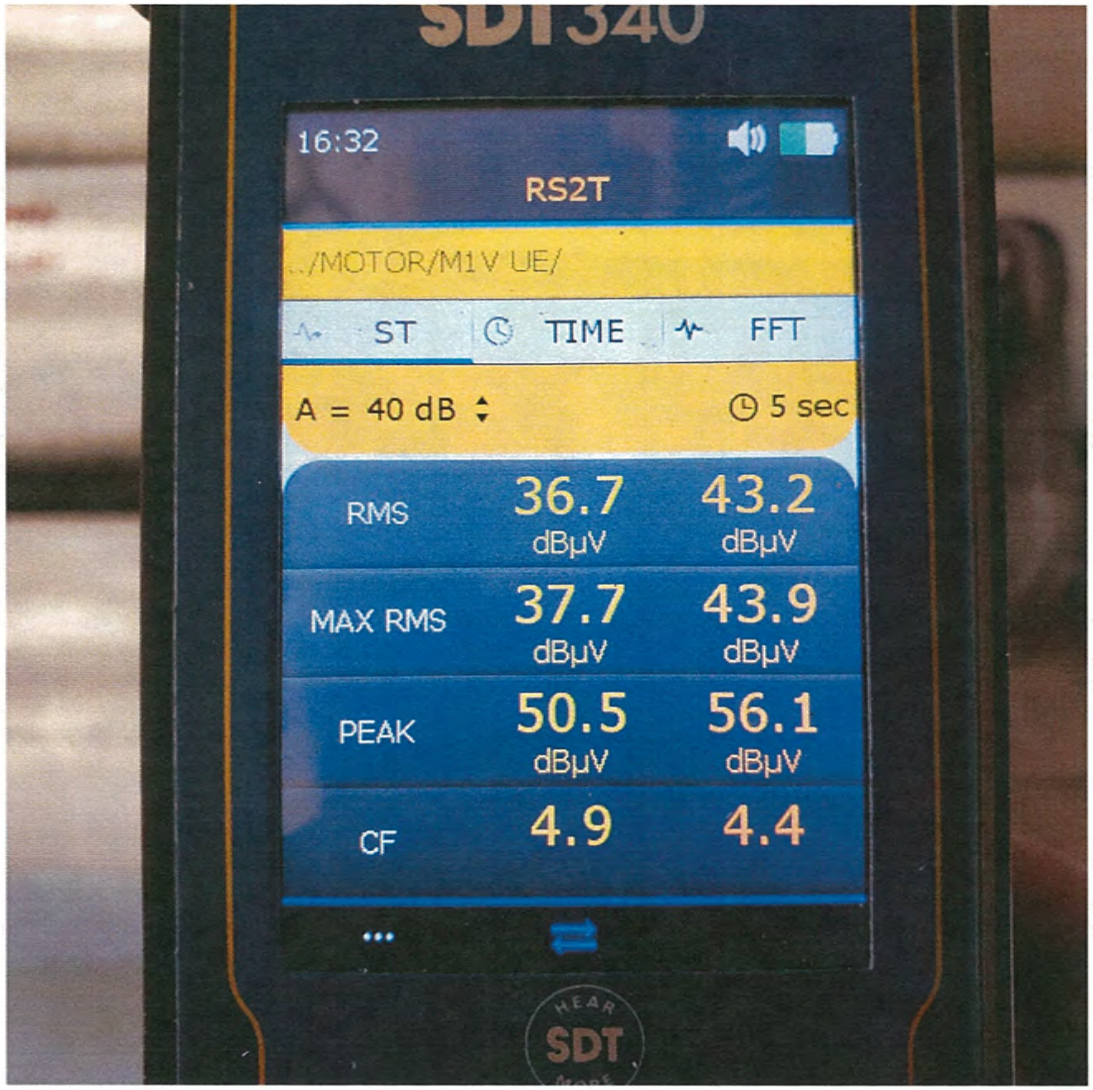
Planned Labor

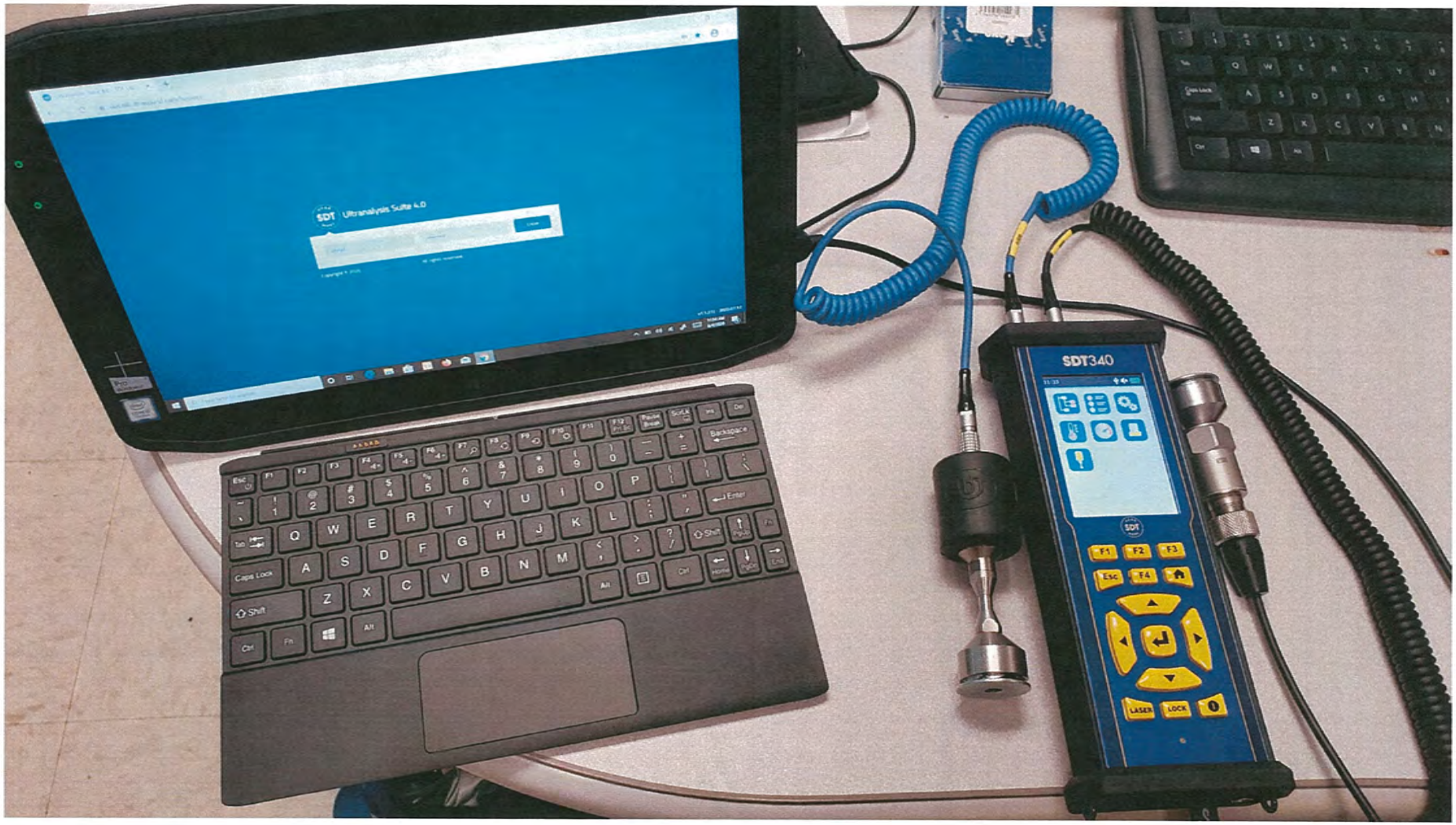
Task ID	Craft	Skill Level	Labor	Vendor	Contract	Qty	Hours	Rate	Line Cost
			PCROCKER			1	01:00	44.51	44.51
							Total Planned Labor:		44.51

SDT 340 Data Collector – 5 tools in one

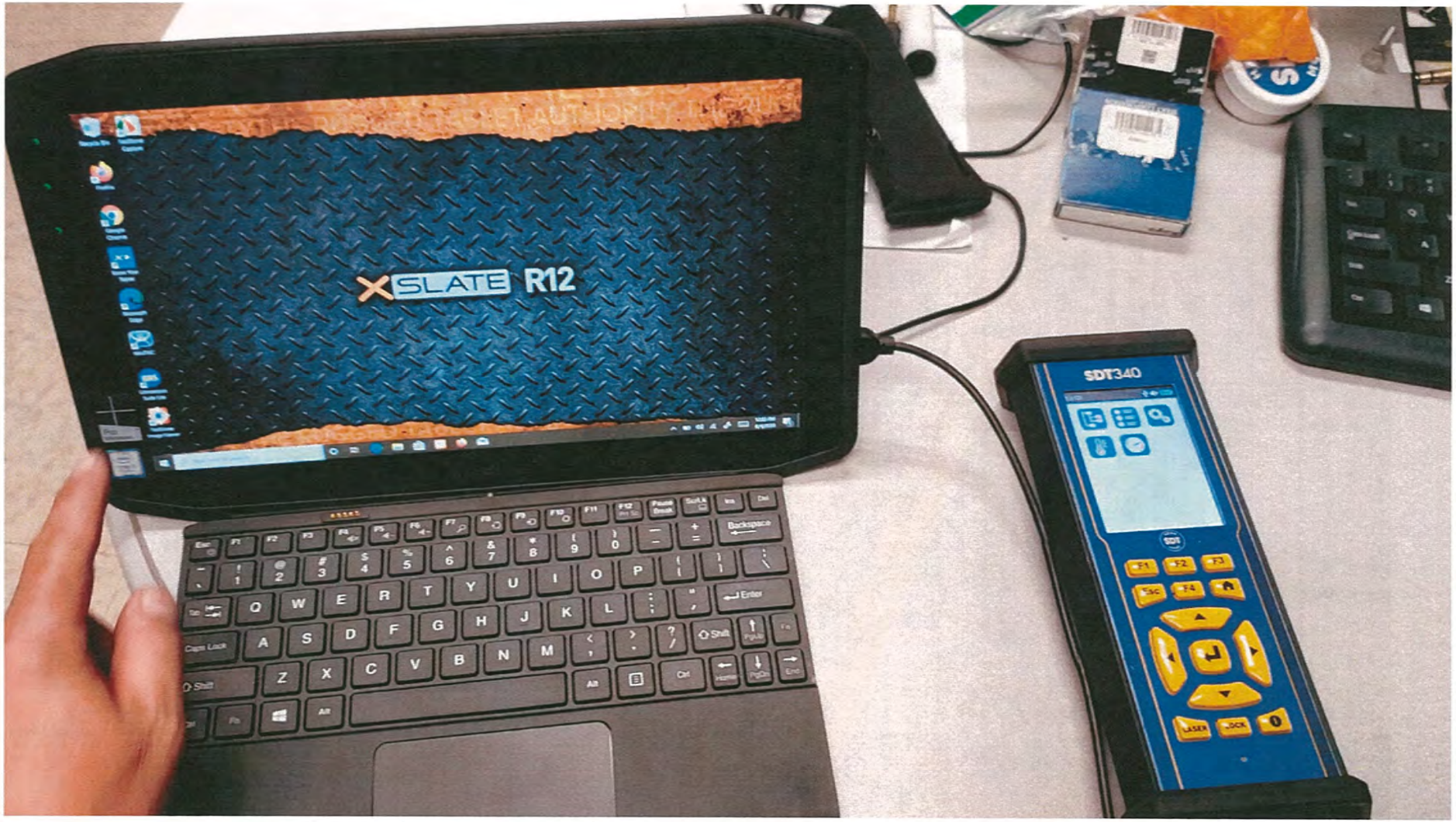
- Structure born Ultrasound Tool (Contact Probe, Magnet, and Grease zerk adapter)
- Airborne Ultrasound – Flex Wand
- Vibration - Accelerometer
- RPM - Photo tachometer
- Temperature - Radiometer


SDT340


SDT340
16:32
RS2T
../MOTOR/M1V UE/
ST
TIME
FFT
A = 40 dB
5 sec
RMS
36.7 dBµV
43.2 dBµV
MAX RMS
37.7 dBµV
43.9 dBµV
PEAK
50.5 dBµV
56.1 dBµV
CF
4.9
4.4
HEAR
SDT

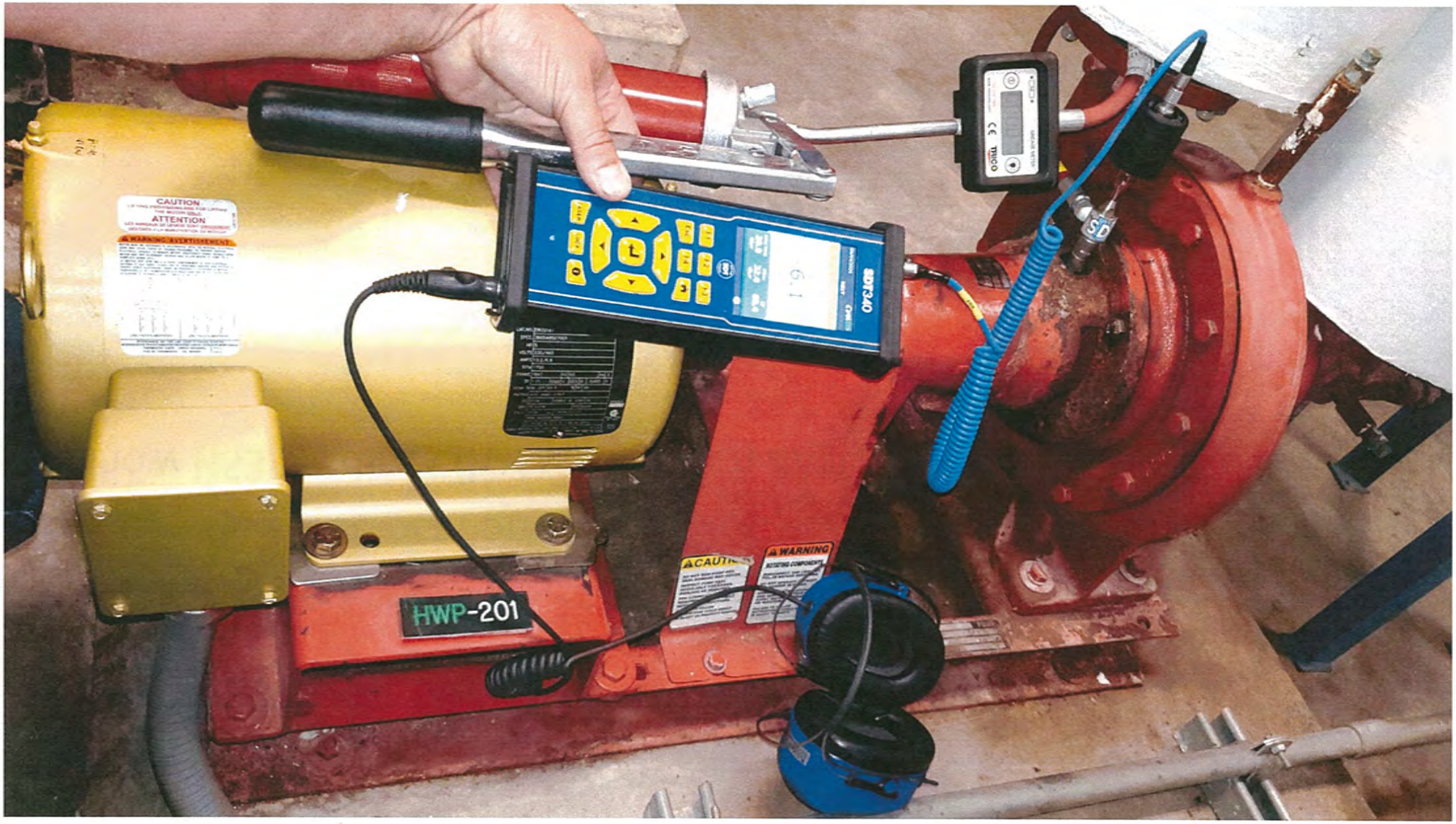

SDT Ultranalysis Suite 4.0
SDT340

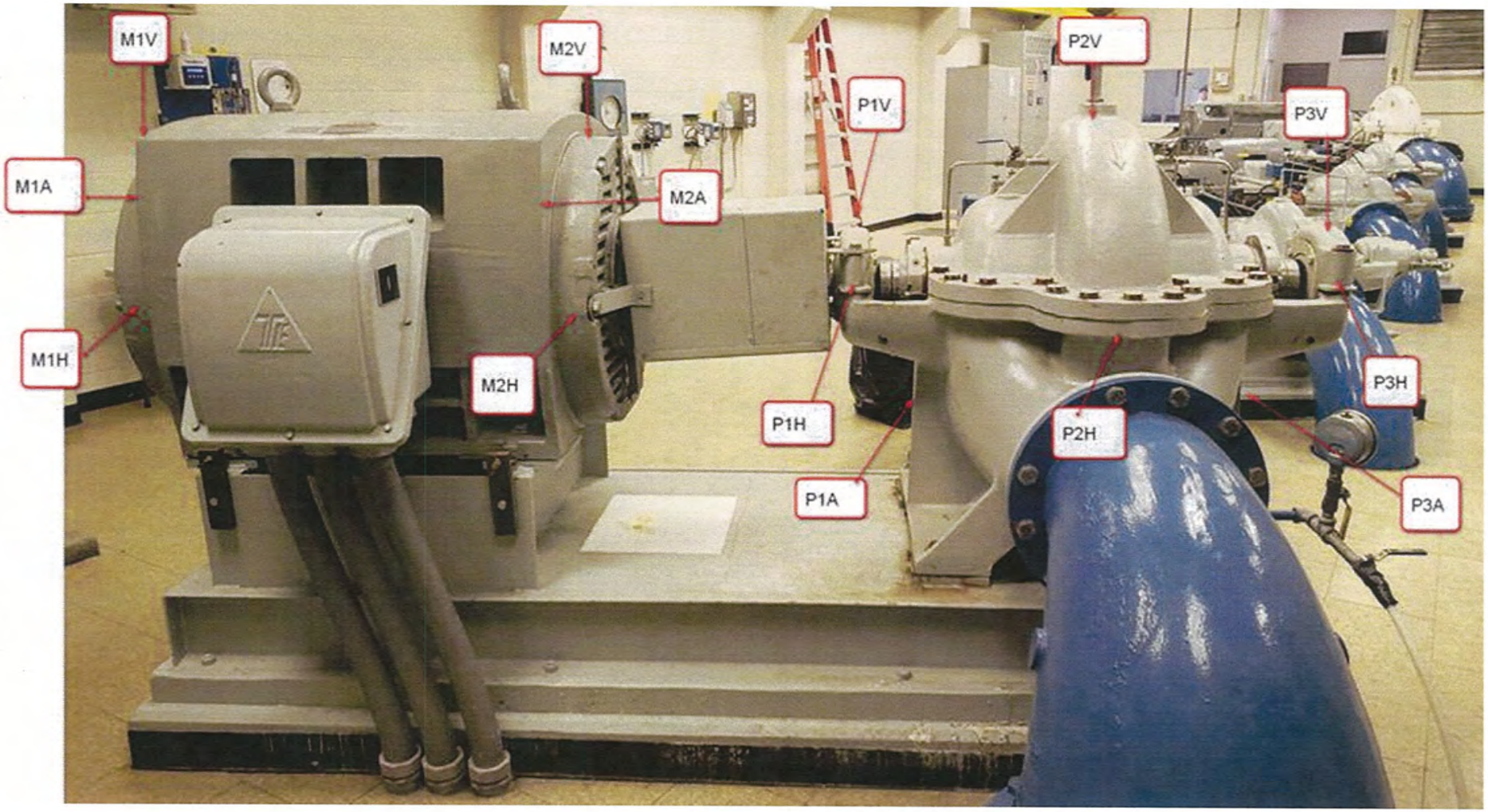

HS-5
U.S.MOTORS
WATER DEPT.

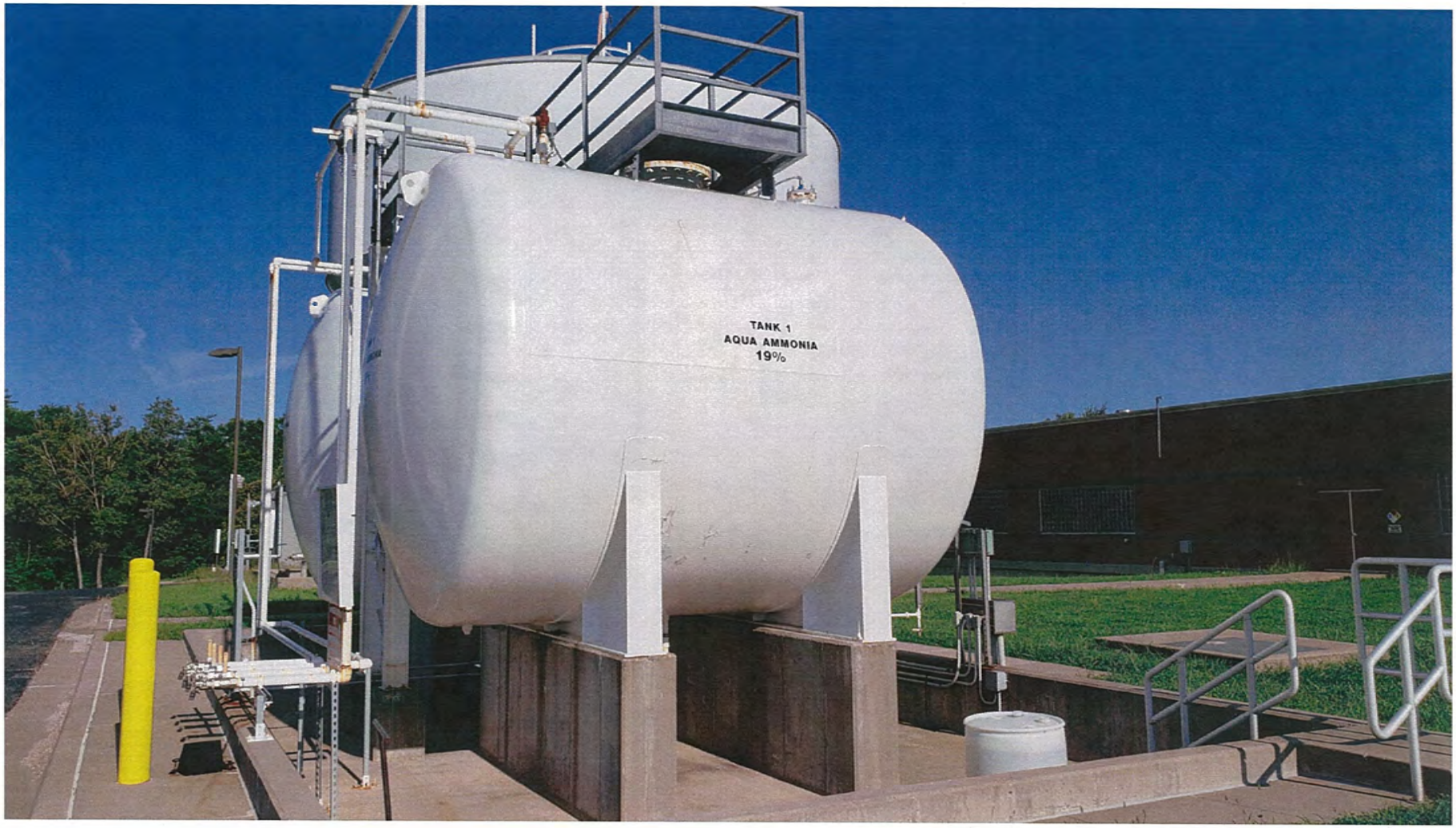

XSLATE R12
SDT340

Login to UAS4

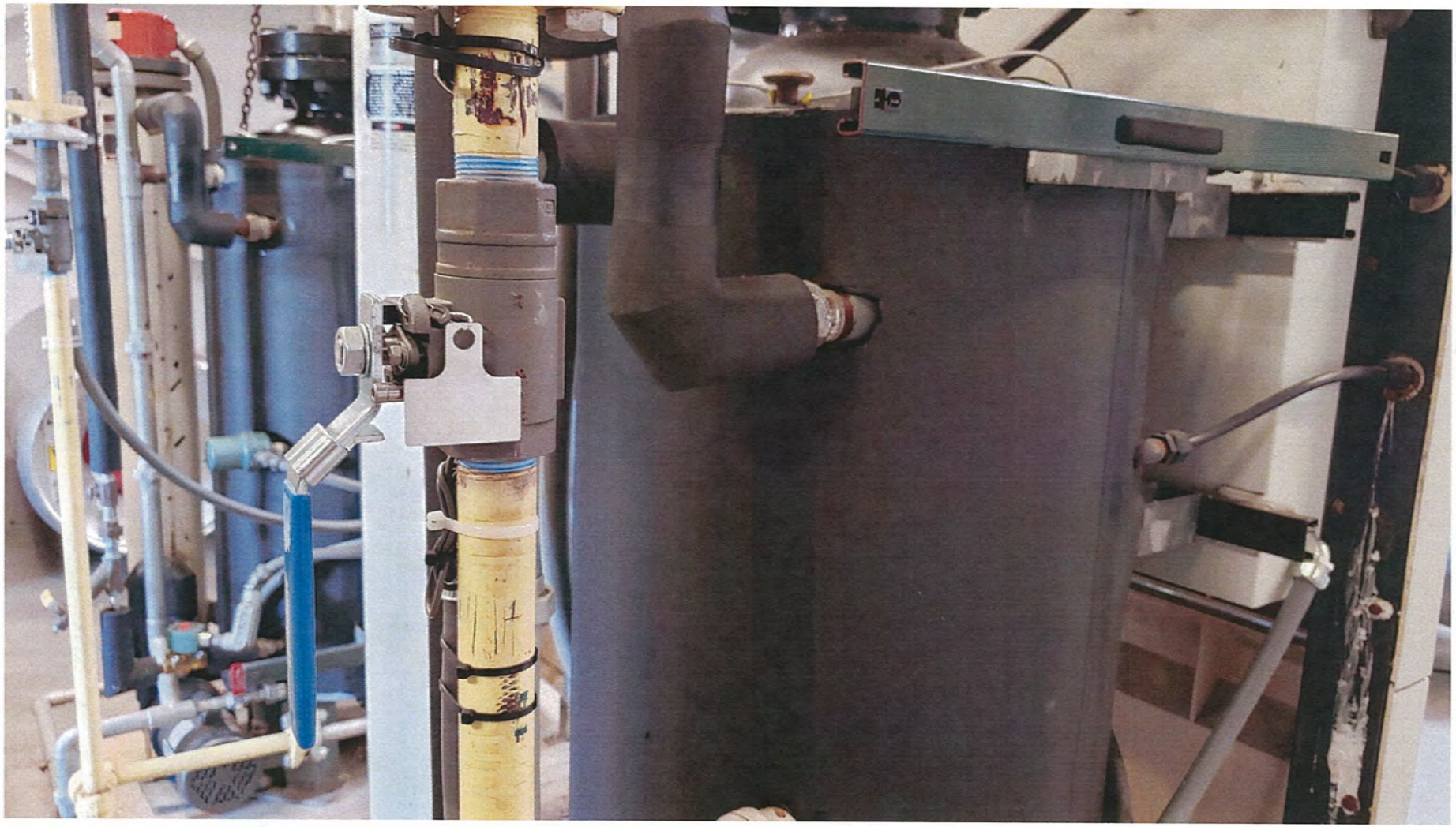
- Show the start center
- Show the asset location tree
- Show HS3 readings that were taken 8/4/20


CAUTION
ATTENTION
HWP-201
SDT340
WARNING
ROTATING COMPONENTS


M1V
M2V
P2V
P1V
P3V
M1A
M2A
M1H
M2H
P1H
P2H
P3H
P1A
P3A

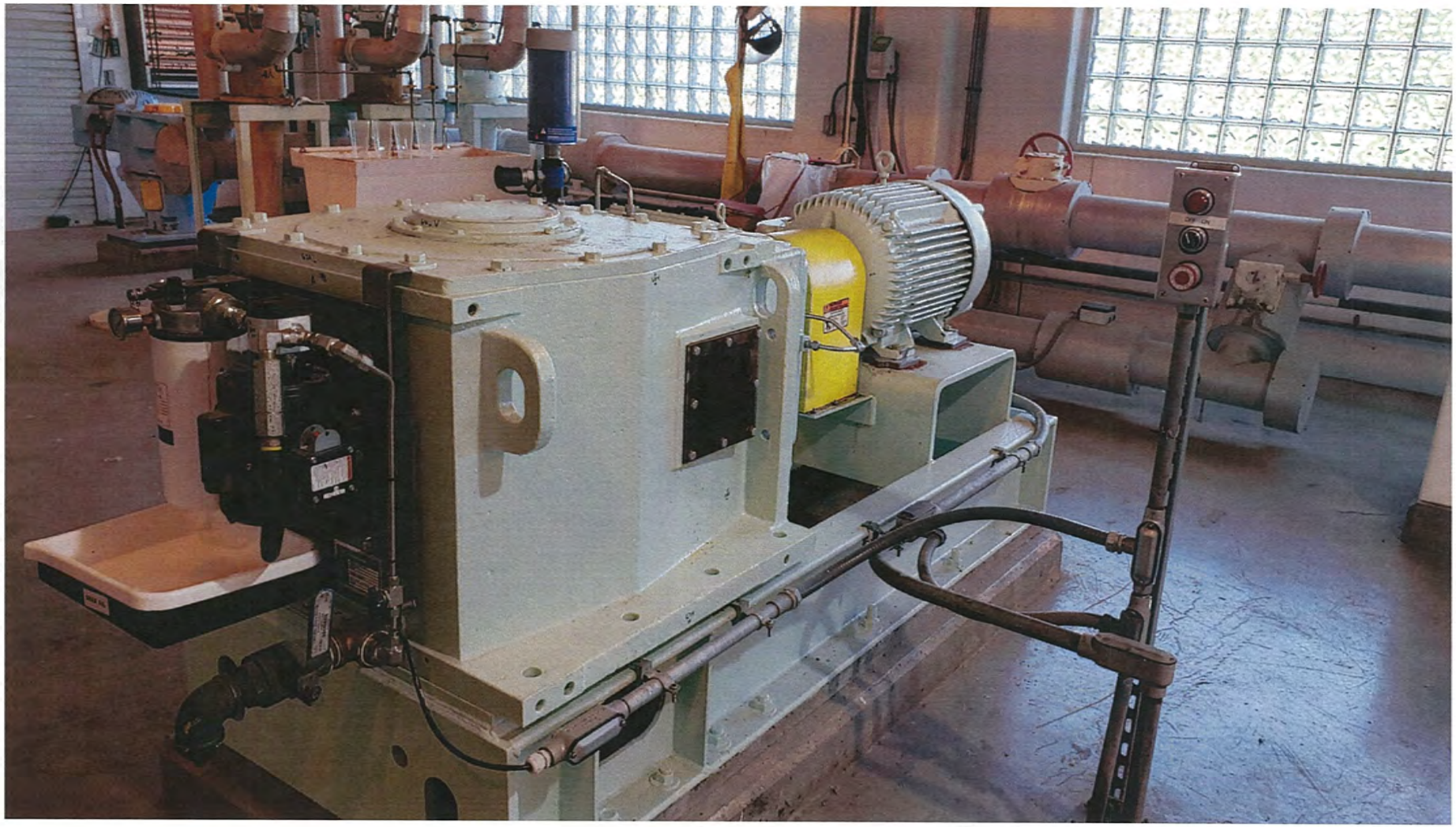

TANK 1
AQUA AMMONIA
19%

QGD-40
quincycompressor.com
asmussen
Quincy
COMPRESSOR
Quincy
QGD-40
Quincy
COMPRESSOR




WARNING
ADVERTENCIA

Found before it failed by oil analysis




LE
CLUDE
LE
Mount Vertically Only

Xamine™ Oil Analysis

Lubricant Analysis Report

North America: +1-800-537-7683

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

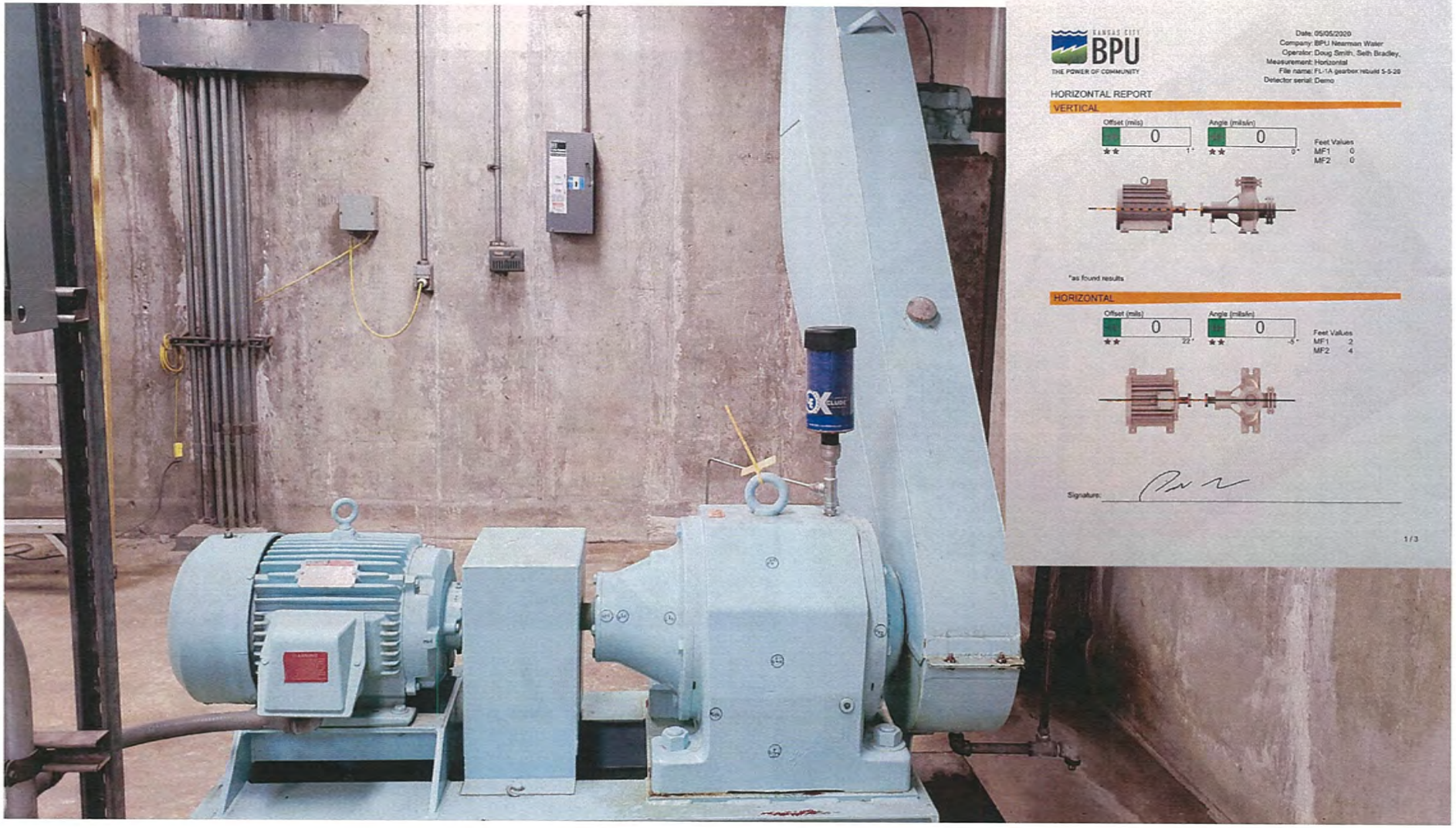
Account Information		Component Information		Sample Information	
Account Number:	593000-3020-0011	Component ID:	HS1MTRODEBRG	Tracking Number:	20010J22230
Company Name:	KANSAS CITY BOARD OF PUBLIC	Secondary ID:	HS1MTRODEBRG	Lab Number:	H-447136
Contact:	JENNIFER WIEDNER/PAUL CROCKER	Component Type:	ELECTRIC MOTOR	Lab Location:	Houston
Address:	4301 BRENNER ROAD	Manufacturer:	US MOTORS	Data Analyst:	RMF
	KANSAS CITY, KS 66104 US	Model:	6808P	Sampled:	15-Jun-2020
Phone Number:	913-573-9251 913-645-1662	Application:	PLANT/INDUSTRIAL	Submitted:	15-Jun-2020
		Sump Capacity:	70 qt	Received:	19-Jun-2020
				Completed:	29-Jun-2020

Filter Information		Miscellaneous Information		Product Information	
Filter Type:	NONE	Miscellaneous:	WO 258756	Product Manufacturer:	LUBRICATION ENGINEERS
Micron Rating:				Product Name:	4040 QUINPLEX WHITE OIL (H1)
				Viscosity Grade:	ISO 150

Comments	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. Aluminum is at a MODERATE LEVEL; Phosphorus is slightly high for this lubricant. No significant findings from micropatch report. Please refer to micropatch report.

	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	663	5
3	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	35	6
	30-May-2018	Service / PM		42766 HR							Changed from Fuchs to LE4040													
4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	674	4
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	592	4
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	577	3
7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	570	6


SheaveMaster
SHAFT
TWIST
BELT
FILE MANAGER



KANSAS CITY BPU
THE POWER OF COMMUNITY

Date: 05/05/2020
Company: BPU Nearman Water
Operator: Doug Smith, Seth Bradley,
Measurement: Horizontal
File name: FL-1A gearbox rebuild 5-5-20
Detector serial: Demo

HORIZONTAL REPORT

VERTICAL

Offset (mils)	Angle (mils/in)	Feet Values
0	0	MF1 0
★★ 1"	★★ 0"	MF2 0

*as found results

HORIZONTAL

Offset (mils)	Angle (mils/in)	Feet Values
0	0	MF1 2
★★ 22"	★★ -5"	MF2 4

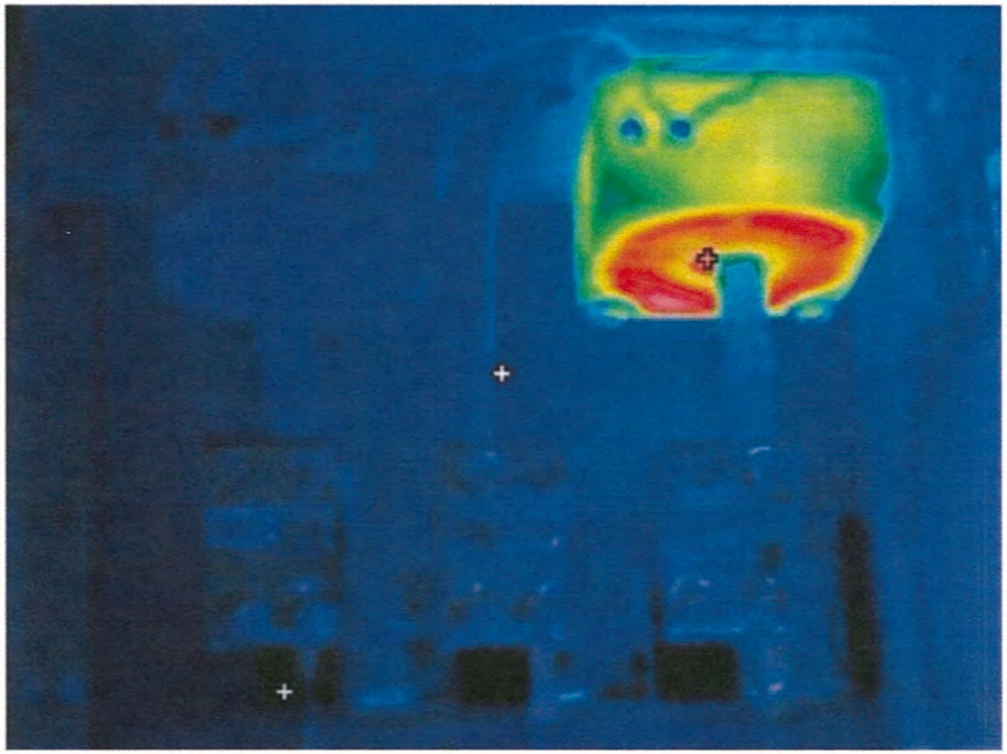
Signature:

1 / 3

Max : 127.9 °F

Min : 67.1 °F

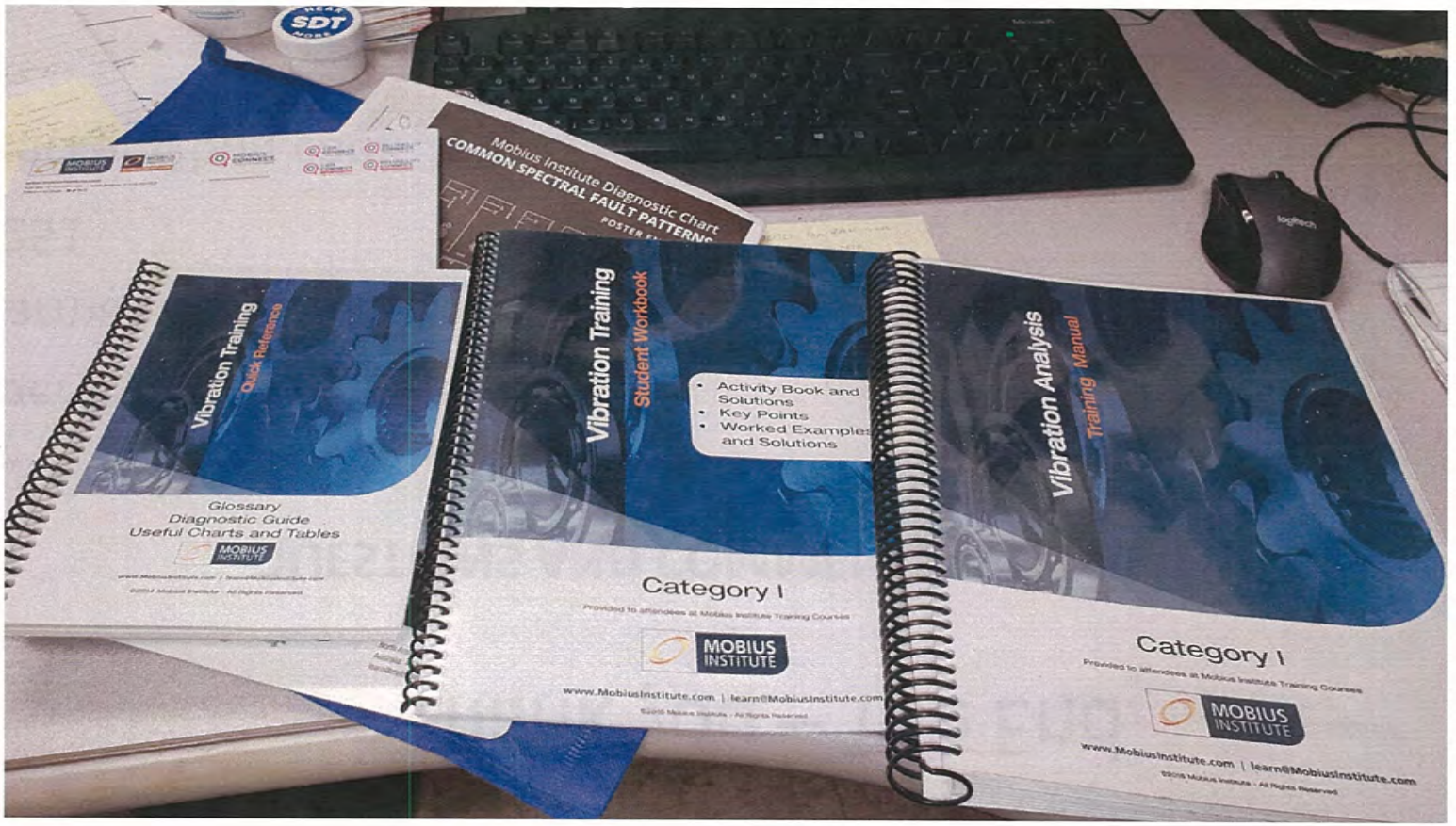
70.2 °F




CRAFTSMAN

Gearbox CDM Programs Developed

VIB Level I Training (In Progress)



Thank you – The End

QUESTIONS AND COMMENTS WELCOME!!!!

Paul Crocker

Supervisor of Maintenance

Nearman Water Treatment Plant

X9251

pcrocker@bpu.com