



**QualiTest® Diagnostics**

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October 2, 2019

Valero West Memphis Terminal  
West Memphis, AR

The following is a summary of findings from the September 2019 vibration survey at your facility. Please let us know if there are any questions or comments.

**QualiTest®** uses a four step rating system for defects.

**Class I:** Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

**Class II:** Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

**Class III:** Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

**Class IV:** Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

**Hi-Speed Industrial Service** tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

### **31-15-042 Short Horn Lateral Pump**

Motor/Pump was not in service during this survey.

### **#1 Barge Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#2 Barge Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#3 Barge Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#4 Barge Loading Pump**

Motor data is showing signs of defects in motor bearings. This issue appears to be getting worse. Motor needs to be repaired soon. Ensure motor has adequate lubrication for now as we will continue to monitor this issue closely. Rated as a **CLASS III** defect.

### **#8 LX Truck Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#12 LX Truck Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#13 XX Truck Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#14 XX Truck Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#17 LS Truck Loading Pump**

Motor/Pump was not in service during this survey.

### **#15NL Truck Loading Pump**

Pump data continues to show signs of bearing defects/wear in the pump. We will continue to monitor this closely. Rated as a **CLASS II** defect.

### **#18 NL Truck Loading Pump**

Drive end of the pump is showing some signs of possible looseness/weave in the pump fits or perhaps in the coupling/hub. We will monitor this issue closely. Rated as a **CLASS II** defect.

### **#6 Transfer Pump**

Motor/Pump was not in service during this survey.

### **#5 Truck Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#7 Truck Loading Pump**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

### **#43 Bio-Diesel Pump North**

Motor/Pump appeared to be operating at acceptable vibration levels during this survey.

#### #44 Bio-Diesel Pump Middle

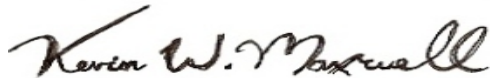
Motor data is still showing a high 1 x rpm vibration especially in the inboard axial. Pump data also indicates some possible looseness type vibration in the DE of the pump. This could be coupling related or fit looseness of the pump. Inspect unit for these issues soon. We will monitor these issues closely. Rated as a **CLASS III** defect.

#### #45 Bio-Diesel Pump South

Data of the motor still is starting to indicate bearing faults in motor bearings. We will monitor this closely. Rated as a **CLASS II** defect for now.

As always, it has been a pleasure to serve the Valero West Memphis Truck Terminal. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III



**QualiTest® Diagnostics**

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#### Abbreviated Last Measurement Summary

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Database: west memphis.rbm

Station: WEST MEMPHIS TERMINAL

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
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#1 BARGE - #1 BARGE LOADING PUMP		(02-Oct-19)
	OVERALL LEVEL	1 - 20 KHz
MOH	.205 In/Sec	.551 G-s
MOV	.082 In/Sec	.564 G-s
MIH	.103 In/Sec	.396 G-s
MIV	.066 In/Sec	.376 G-s
MIA	.063 In/Sec	.314 G-s
#2 BARGE - #2 BARGE LOADING PUMP		(02-Oct-19)
	OVERALL LEVEL	1 - 20 KHz
MOH	.088 In/Sec	.584 G-s
MOV	.089 In/Sec	1.019 G-s
MIH	.041 In/Sec	.327 G-s

MIV	.037 In/Sec	.702 G-s
MIA	.038 In/Sec	.251 G-s
#3 BARGE - #3 BARGE LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.062 In/Sec	.114 G-s
MOV	.113 In/Sec	.202 G-s
MIH	.080 In/Sec	.180 G-s
MIV	.099 In/Sec	.113 G-s
MIA	.113 In/Sec	.058 G-s
#4 BARGE - #4 BARGE LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.160 In/Sec	1.014 G-s
MOV	.139 In/Sec	1.231 G-s
MIH	.232 In/Sec	1.966 G-s
MIV	.161 In/Sec	.989 G-s
MIA	.373 In/Sec	.475 G-s
#8LX PUMP - #8 LX TRUCK LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.041 In/Sec	.341 G-s
MOV	.036 In/Sec	.548 G-s
MIH	.034 In/Sec	.409 G-s
MIV	.028 In/Sec	.307 G-s
MIA	.033 In/Sec	.308 G-s
#12LX PUMP - #12 LX TRUCK LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.200 In/Sec	.052 G-s
MOV	.139 In/Sec	.065 G-s
MIH	.116 In/Sec	.086 G-s
MIV	.071 In/Sec	.073 G-s
MIA	.076 In/Sec	.100 G-s
#13XX PUMP - #13 XX TRUCK LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.044 In/Sec	.257 G-s
MOV	.058 In/Sec	.395 G-s
MIH	.032 In/Sec	.236 G-s
MIV	.039 In/Sec	.219 G-s
MIA	.031 In/Sec	.204 G-s
#14XX PUMP - #14 XX TRUCK LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.118 In/Sec	.446 G-s
MOV	.078 In/Sec	.452 G-s
MIH	.086 In/Sec	.340 G-s
MIV	.051 In/Sec	.342 G-s
MIA	.041 In/Sec	.272 G-s
#15NL PUMP - #15 NL TRUCK LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.051 In/Sec	.552 G-s
MIH	.037 In/Sec	.094 G-s
MIA	.090 In/Sec	.062 G-s
EIH	.140 In/Sec	1.290 G-s
EIA	.050 In/Sec	.235 G-s
EOH	.109 In/Sec	.286 G-s
#18NL PUMP - #18 NL TRUCK LOADING PUMP (02-Oct-19)		
OVERALL LEVEL	1 - 20 KHz	
MOH	.054 In/Sec	.079 G-s
MIH	.103 In/Sec	.075 G-s
MIV	.331 In/Sec	.098 G-s
MIA	.103 In/Sec	.045 G-s
EIH	.456 In/Sec	.126 G-s
EIA	.208 In/Sec	.155 G-s
EOH	.082 In/Sec	.123 G-s

#5TRCKLOAD - #5 TRUCK LOADING PUMP (02-Oct-19)

	OVERALL LEVEL	1 - 20 KHz
MOH	.103 In/Sec	.481 G-s
MIH	.090 In/Sec	.529 G-s
MIA	.169 In/Sec	.156 G-s
EIH	.127 In/Sec	.023 G-s
EIA	.131 In/Sec	.175 G-s
EOH	.076 In/Sec	.012 G-s

#7TRCKLOAD - #7 TRUCK LOADING PUMP (02-Oct-19)

	OVERALL LEVEL	1 - 20 KHz
MOH	.082 In/Sec	.141 G-s
MIH	.076 In/Sec	.071 G-s
MIA	.111 In/Sec	.050 G-s
EIH	.079 In/Sec	.254 G-s
EIA	.102 In/Sec	.111 G-s
EOH	.107 In/Sec	.149 G-s

#43BOIDSLP - #43 BIO-DIESEL PUMP NORTH (02-Oct-19)

	OVERALL LEVEL	1 - 20 KHz
MOH	.058 In/Sec	.073 G-s
MIH	.035 In/Sec	.072 G-s
MIA	.046 In/Sec	.064 G-s
EIH	.213 In/Sec	.449 G-s
EIA	.111 In/Sec	.637 G-s
EOH	.103 In/Sec	.383 G-s

#44BOIDSLP - #44 BIO-DIESEL PUMP MIDDLE (02-Oct-19)

	OVERALL LEVEL	1 - 20 KHz
MOH	.243 In/Sec	1.415 G-s
MIH	.214 In/Sec	1.330 G-s
MIA	.591 In/Sec	.971 G-s
EIH	.292 In/Sec	.477 G-s
EIA	.181 In/Sec	.454 G-s
EOH	.177 In/Sec	.277 G-s

#45BOIDSLP - #45 BIO-DIESEL PUMP SOUTH (02-Oct-19)

	OVERALL LEVEL	1 - 20 KHz
MOH	.089 In/Sec	.972 G-s
MIH	.070 In/Sec	.604 G-s
MIA	.099 In/Sec	.615 G-s
EIH	.239 In/Sec	.729 G-s
EIA	.364 In/Sec	2.240 G-s
EOH	.262 In/Sec	.727 G-s

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Clarification Of Vibration Units:

Acc	-->	G-s	RMS
Vel	-->	In/Sec	PK