EAST LYME WATER AND SEWER COMMISSION
AGENDA
April 26, 2022
7:00 PM

Regular Meeting
East Lyme Town Hall
(Upstairs Main Meeting Room)

1. **Call to Order / Pledge of Allegiance**

2. **Approval of Minutes**
   a. **Regular Meeting Minutes – March 22, 2022**
   b. **Special Meeting Minutes – April 12, 2022**

3. **Delegations**

4. **Billing Adjustments/Disputes**

   a. **155 Main St**
   b. **9 Billow Rd**

FILED
April 20 2022 AT 8:10 AM/PM
EAST LYME TOWN CLERK

5. **Approval of Bills – None**

6. **Finance Director Report**

7. **Set Public Hearing Date for Sewer Benefit Assessments**

8. **Proposed Water Operating Budget for FY2023**

9. **Proposed Sewer Operating Budget for FY2023**

10. **Project Updates**
    a. **Meter Replacement Project – Discussion**
    b. **Update on Well 5 Rehabilitation Project**
    c. **Update on American Rescue Projects**
    d. **Niantic Pump Station Vibration Analysis – Discussion and Possible Action**

11. **Correspondence Log**

12. **Chairman's Report**

13. **Staff Updates**
    a. **Water Department Monthly Report**
    b. **Sewer Department Monthly Report**

14. Future Agenda Items

15. Adjournment

EAST LYME WATER & SEWER COMMISSION
REGULAR MEETING
TUESDAY, MARCH 22nd, 2022
MINUTES

The East Lyme Water & Sewer Commission held a Regular Meeting on Tuesday, March 22nd, 2022. Chairman Seery called the Regular Meeting to order at 7:00 PM.

PRESENT: Kevin Seery, Chairman, Dave Bond, Steve DiGiovanna, Dave Jacques, Joe Mingo, Dave Murphy, Carol Russell, Roger Spencer, Dave Zoller

ALSO PRESENT: Joe Bragaw, Public Works Director
Ben North, Municipal Utility Engineer
Anna Johnson, Finance Director
Anne Santoro, Deputy First Selectman

ABSENT: David Jacques, Joe Mingo, Dave Zoller

EAST LYME
WATER & SEWER COMMISSION
APR 26 2022
AGENDA # 2a

1. Call to Order / Pledge of Allegiance
Chairman Seery called the Regular Meeting of the East Lyme Water & Sewer Commission to order at 7:00 PM and led the assembly in the Pledge of Allegiance.

2. Approval of Minutes
- **Regular Meeting Minutes – February 22, 2022**

Mr. Seery called for a motion or any discussion on the Regular Meeting Minutes of February 22, 2022.

****MOTION (1)**
Mr. DiGiovanna moved to approve the Regular Meeting Minutes of March 22, 2022 as presented.
Mr. Zoller seconded the motion.
Vote: 7 – 0 - 2. Motion passed.
Abstained: Mr. Zoller, Mr. Jacques

FILED
March 29, 2022 AT 10:04 AM/PM
Brooke Stearns ATC
EAST LYME TOWN CLERK

3. Delegations
Seery called for delegations.
There were none.

4. Billing Adjustments/Disputes
- **374 Main Street**

Mr. North explained that this is a mixed use restaurant with apartments where it was found that there were three (3) toilets with leaking flapper valves which created the problem. He said that the problem has been and that the owner has paid $2000 in good faith to stop the fees from mounting until this could come before them. As the problem has been corrected he suggested that the adjustment be made from the $8,289.80 billing to $2,568.83.

****MOTION (2)**
Mr. Zoller moved to approve the '1 in 10' adjustment for 374 Main Street from $8,289.80 to $2568.83 as presented.
Mr. DiGiovanna seconded the motion.
Vote: 9 - 0 – 0. Motion passed.

- **170 Flanders Rd., Unit 6**

Mr. North said that this is also a commercial facility (Weight No Longer) where the problem spanned two meter readings. The leaking toilet has been repaired and he is suggesting '1 in 10' adjustments for the both billing periods. For the May 2021 billing period the billing would go from $1290.78 to $315.10 and for the November 2021 billing period it would go from $535.83 to $249.41.

****MOTION (3)**
Mr. DiGiovanna moved to approve the '1 in 10' adjustment for 170 Flanders Rd., Unit 6 for the May 2021 billing period the billing would go from $1290.78 to $315.10 and for the November 2021 billing period it would go from $535.83 to $249.41, as presented.
Mr. DiGiovanna seconded the motion.
Vote: 9 - 0 – 0. Motion passed.

5. Approval of Bills
Mr. Seery called for a motion on the Well 1A/6 Treatment Project bill.

****MOTION (4)**
Mr. DiGiovanna moved to approve the following Well 1A/6 Treatment Project bill: US Bank Invoice #804458200 in the amount of $500.00.
Mr. Zoller seconded the motion.
Vote: 8 – 0 – 1. Motion passed.
Abstained: Mr. Bond

6. Finance Director Report
Ms. Johnson reviewed her report.
There were no questions.

7. Reclassification of PMI Invoice
Ms. Johnson explained that these PMI services for meter installation were provided prior to the complaint that resulted in the cease and desist of the installations. As the State did not approve this project, to resolve this issue, it is recommended that this expenditure be reclassified to the funding available in the Bonded Capital Projects Fund.

****MOTION (5)**
Mr. Murphy moved to reclassify the $35,834.82 PMI expenditure from account 62-70-010-500-001 (Water Meters – commercial & Residential) to account 62-70-006-300-0001 (Miscellaneous Owner Expenditures). In addition, approve a transfer in the amount of $35,834.82 from account 62-70-006-500-006 (emergency Power Generator/Well Imp) to 62-70-006-300-001 (Miscellaneous Owner Expenditures).
Mr. DiGiovanna seconded the motion.
Mr. Bond asked if that account has $35,000 more in it.
Ms. Johnson said no as it was in a holding pattern.
Vote: 9 – 0 – 0. Motion passed.

8. Discuss Sewer Assessment of Condos at 231 Boston Post Road
Mr. North recalled that condos are charged at three-fourth's of the regular $12,000 rate and that the Williamsburg Condo Association had pleaded their case before them and the discussion went to a reduction of the interest rate and/or and extension of the time in which to pay it back. As Williamsburg is not a gravity system, they had to pay to have a system installed.

Mr. Seery said that he has spoken with the Town Attorney on this.

Mr. Mingo said that he thought that there was something in the State Statute that says that we cannot do anything about this. He added that while he does not have an issue with reducing the interest rate to

Mr. Seery reported that some of the items that they are looking for ARPA funds to support are: A garbage truck for the Town; Hole in the Wall restrooms upgrade as they are totally over-run during the summer and an air handler for this building among a myriad of other items.
He noted that the Tax Sale is April 21, 2022 and that they have collected over $600,000 for that plus another $350,000 when Gateway was recently sold.

Mr. Mingo asked how much they are losing on taxes for the properties that the State has taken for the massive I-95 project.

13. Staff Updates

a. Water Department Monthly Report

Mr. North said that they have been working on their leak list and continuing to track down and take care of them. They have also sent letters to customers giving them 14 days to take care of their leaks noting that if they dl not then they can risk being shut-off.

Mr. Murphy asked if they are still pumping to New London.
Mr. North said yes.

b. Sewer Department Monthly Report

There were no comments.

14. Future Agenda Items

Mr. Bond said that he would like to see discussion on – Insurance for water and sewer lines coming into the properties on a future agenda.

Mr. Mingo said that he would like to have them do away with the '1 in 10'.
Mr. Bragaw said that they are at least a year out on that. They need to have all of the new meters installed first.

15. ADJOURNMENT

Mr. Seery called for a motion to adjourn.

****MOTION (6)**
Mr. DiGiovanna moved to adjourn this Regular Meeting of the East Lyme Water & Sewer Commission at 8 PM.
Mr. Murphy seconded the motion.
Vote: 9 – 0 – 0. Motion passed.

Respectfully submitted,

Karen Zmitruk,
Recording Secretary

3.75% that he does not think that we could do anything more than that. He also said that there should be a 'due on sale' clause so that if the unit is sold, it is paid.

Mr. Bond questioned the 'due on sale' item.
Mr. Seery said that he would ask the Town Attorney to draft a motion with the lesser rate and/or longer term and also with regard to the 'due on sale' item for them to review.

9. Discuss Water & Sewer Budgets
Mr. Bragaw noted that he had provided them with the budget materials for review. He provided a brief review of where they stood noting that this was a much harder budget and that they would need to have a special meeting to go over it. As proposed it is showing a 13% increase but with all other logistics considered it would come to a 3.5% increase.
He noted that he had budgeted for a 10% increase from New London but has yet to hear on that. There are also contract negotiations with regard to wages.

Mr. Mingo asked if the meter installers are being paid benefits.
Mr. Bragaw said no, adding that they are hourly employees and would be evaluated at six months.
Mr. Bond noted the wage inequities with our Water & sewer employees vs. other similar Towns.
Mr. Bragaw agreed noting that they are trying to work on that issue.

After discussion, it was decided that there would be a Special Budget Meeting on Tuesday, April 12, 2022 commencing at 6:30 PM.

10. Project Updates
- **Meter Replacement Project**

Mr. North reported that in February they changed out 184 meters and hired two 2) new people to replace the person who is leaving. He also reported that they are fixing the troubled accounts as they go as it is more than just replacing a meter at this point.

Mr. Bragaw added that this project is proceeding well.
Mr. Mingo asked if any of our regular employees change meters so that when the temps are done they know what to do.
Mr. Bragaw said yes noting that it was our permanent people who actually trained the temporary workers.

- **Update on Well 5 Rehabilitation Project**

Mr. North reported that this is going well and that they are waiting on the screen. In the meantime a lot of interior work is being done.

Mr. Murphy asked about the budget.
Mr. North said that they are doing really well budget wise; they are on-track as they spent the extra time up front to get good numbers for the project.

- **American Rescue Plan Discussion on Upcoming Projects**

Mr. Seery noted that the Niantic Pump Station project at $600,000 and the Water Tank Project at $750,000 have been sent to the BOS fro review at their April 6 meeting as ARPA projects. If passed there, it would then go before the BOF for their April 13 meeting and if passed there - to Town Meeting for final approval. He noted that of the $5.4M that a bit over 40% would be allocated to substantial Water & Sewer projects.

11. Correspondence Log
There was no discussion.

12. Chairman's Report

EAST LYME WATER & SEWER COMMISSION
SPECIAL BUDGET MEETING
TUESDAY, APRIL 12th, 2021
MINUTES

The East Lyme Water & Sewer Commission held a Special Meeting on Tuesday, April 12, 2022. Acting Chairperson Santoro called the Special Meeting to order at 6:32 PM.

PRESENT: Anne Santoro, Acting Chairman, Steve DiGiovanna, Dave Murphy, Carol Russell, Dave Zoller

ALSO PRESENT: Joe Bragaw, Public Works Director
Ben North, Municipal Utility Engineer
Matt Garneau, Asst. Municipal Utility Engineer
Anna Johnson, Finance Director

ABSENT: Kevin Seery, Chairman, Dave Bond, Dave Jacques, Joe Mingo, Roger Spencer

1. Call to Order / Pledge of Allegiance
Acting Chairman Santoro called the Special Meeting of the East Lyme Water & Sewer Commission to order at 6:32 PM and led the assembly in the Pledge.

2. Discussion on Water and Sewer Budgets FY2023
Mr. Bragaw cited some general factors with regard to the proposed budgets:
He said that he is proposing these budgets while still not having the revenues from the last six (6) months. He said that he should have those figures by early next week. Also, inflation has a very real impact on both of these budgets. The impact on the rates will be a fall issue and they should be 60%-70% done with the new meters by the fall which will help with the trends.
He said that he would start with the Sewer budget because to minimize the impact to the sewer budget, he had to make some changes to the water budget and he also has better Sewer numbers from New London.

- **Sewer**
- **Expenditures**

Mr. Bragaw cited the following points driving the budget:

- The Treatment Line item is way up as our flows are steadily increasing while the plant flows are going down; the 'true up's' are hitting hard
- Maintenance, wet wells, fuel, chemicals are all up due to inflation
- Salaries (Admin) is down because in this past FY, we were carrying the payout for our retiring sewer admin
- Legal & accounting are less because we are done with Tri-Town negotiations and the slow down in Landmark legal fees
- Dropped sewer payment back to water in half to make the numbers work
- Expenditures are up by 7.68%

- **Revenues**
  - He said that one thing to note is that he is increasing the amount that sewer assessment pays for the Sewer Admin from 50-75% of the expenses (includes benefits)

- **Other points**
  - With this, he said that he is projecting a 7% rate increase come the fall.

- The current balance on the sewer assessment is $3,766,501 and –
- With the vehicle acquisition, he said that he is proposing to get a service truck to replace the #39 truck for the water and sewer mechanic for $150k; and to take it out of Sewer Assessment. He said that they did this a few years ago with the mini- excavator. He said that he is proposing this to minimize the operating budget increases which ultimately affect the rate increases.

Mr. DiGiovanna suggested that with the idea of funding the vehicle acquisition from Sewer Assessment – how about looking at other items that could be drawn from Sewer Assessment also such as the maintenance of systems to offset the 7%+ increase.

Mr. Bragaw said that the maintenance of the pump systems usually involves capital work.

Ms. Santoro asked Ms. Johnson if she could explain the parameters of the sewer assessment fund.
Ms. Johnson said that items are supposed to meet the needs of the sewer equipment.

Mr. Bragaw asked what they would suppose that the percentage increase would be on the sewer side.

Mr. DiGiovanna said that he would be comfortable with a 3% increase especially when everyone is being hit with increases on everything.
Mr. Zoller said no more than 5%.

Mr. Murphy asked about the new truck and how many years he proposed getting out of it.
Mr. Bragaw said that he would propose 15 years and noted that the truck would be extremely useful.

He then synopsized that there would be an operating transfer in of $100,000 from the sewer assessment to supplement capital costs and that this would bring the increase down to 3%. He added that they would also look for what other items would qualify.

- **Water**
- **Expenditures**

Mr. Bragaw went over the following items:

- There is a huge debt spike from Well1A/6 project in this year. We expected this and that is why we spent $826,200 less the last two fiscal years than what we took in (the debt reserve)
- Ms. Johnson has been repeating in her monthly Director's reports that the cash flows have been very healthy in the water account. The reason is that we have saved money over the last two years. Now, we are going to need to dip into these funds to get over the debt spike.
- Vehicle Acquisition program – we are proposing one new utility body truck in the vehicle acquisition program
- The Line Items that are way down are:
  - Meter replacement project – in current FY, we had to pay the balloon payment of 1/20 of the loan as the first payment. Also, the payment amount is about 30% less than originally anticipated because it didn't include the labor. However; instead of spreading the labor out over the 20-year loan period, we are forcing it thru the operating budget in about 1-½ years time; hence the strain on the current budget
  - Meter Deposit reimbursement - we are almost done with paying back the meter deposits. As of this May bill, we will only have a little left plus the interest, so this line was taken out of the budget as Ms. Johnson has been taking it out of the meter deposit account
  - Capital Projects – Since we are getting ARPA funding, we were able to scale this line item back for the present time
- Temporary meter installers – this is for 4 installers for the whole year
- Expenditures are up by 12.99%

- **Revenues**

- The prison billing is decreasing
- They had to put in $526,645 for use of retained earnings to balance the budget (water has banked $800,000 but has the ability to use it to stabilize the rates)
- The projected rate increase is around 4% but he said that he would like to look at the rates this fall and find a better way to structure them

Mr. DiGiovanna asked about the meter replacement and if that is considered a capital improvement project. Mr. Bragaw said that yes, it is.

Mr. Bragaw said that Mr. Gameau would present a brief 2019 Water Rate Analysis (10 year study from 1999 to 2019 of select areas rate increases). This showed increasing and decreasing block structures and is something to be considered once they change over to quarterly billing with the new meters.

Mr. Bragaw noted that the Sewer Assessment fund has roughly $3.7M in it and while they can use some of it for capital projects; he suggested that they look into and think about ways to invest it for greater returns.

3. ADJOURNMENT
Ms. Santoro called for a motion to adjourn.

****MOTION (1)**
Mr. DiGiovanna moved to adjourn this Special Budget Meeting of the East Lyme Water & Sewer Commission at 8:00 PM.
Mr. Zoller seconded the motion.
Vote: 5 – 0 – 0. Motion passed.

Respectfully submitted,

Karen Zmitruk,
Recording Secretary
(Attachments on Web Minutes)

EAST LYME WATER DEPARTMENT

1 IN 10 WATER LEAK ADJUSTMENT APPLICATION

Date of Request Nov. 12. 2021

Property Owner Joseph A. Katzbek Jr. **RESIDENTIAL (up to 3 units/meter)**

Daytime Phone # 860-841-2003

Property Address 9 Billow Rd. Niantic CT

Email Address JKATSEA@AOL.COM

Type of Property _____ Single Family/Multi-family/Duplex

REASON THE CUSTOMER IS REQUESTING AN ADJUSTMENT *

Upon Receipt of my 11/01/21 Bill of # 3,917.77 for a family of 2, I compared it to my last 2 Bills of #125.59 (2020) & #643.94 (2019) This is an increase of over 600%. I was given a sheet of paper showing water usage & it shows a use of "257,100" gal's for 1 Billing Period I cannot accept these Numbers and have included additional info re water flow possible thru a 3/4" Pipe in GPM rates. Please see my additional info. Please look at amount used 10/19/21 & 2 days later on 10/21/21. Not possible!

* Be as detailed as possible as to the reason of the request

RECEIVED
NOV 12 2021
EAST LYME
WATER & SEWER COMMISSION

Have you provided written proof that the excessive water use has been corrected? (yes/no)
Have you been given an leak adjustment to your water bill over the last 10 years? (yes/no)
Has there been a change of use of the property during the disputed bill period? (yes/no)
Has there been an increase in occupants at the disputed bill address? (yes/no)

ANY ADDITIONAL INFORMATION

I believe No Leak has taken place nor can one be found.

I Look Forward for the opportunity to meet & discuss this request.

Think You

By signing this application below, I am certifying that all of the information that I have provided is true, that I am the owner of the property and that I have read the East Lyme Water Department's Bill Dispute Resolution policy.

Joseph A. Katzbek Jr. 11/12/2021

Signature **Date**

If you have any questions on how to fill out this application, please contact the Water Department at (860) 691-4104.

STAFF USE

Approved Denied _____ 12/7/2021

Decision (Approve/Deny) **Staff Member** **Date**

2 year old info

Reason

EAST LYME
WATER & SEWER COMMISSION
APR 26 2022
AGENDA # 46

Flow of Water thru a 3/4" Pipe
@ 20-100 PSI with Loss & Noise.

23 GPM

23 GPM x 60 Min = 1380 / Hours 60 = 33120. GPM/24 HRS

1380 GPH x 60 Min x 24 HRS =>

1380 x 24 HRS

33120 = 24 HRS x 7 = 168 HRS x 33120

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1 HR = 23 GPM x 60 Min = 1380 HR Flow x 24 HRS = 33,120. GPM Flow
1380 GPH

1380 Gal/Hour x 24 HRS = 33,120. Gal/1 Day.

1 DAY 24 Hours = 33,120. Gal Flow x 7.763 = 257,110.56 GAL'S
7 DAYS

240275

NIANTIC PLUMBING & APPLIANCE CO. INC.

P. O. BOX 508 • 40 PENN AVENUE • TEL. 739-5032 • NIANTIC, CONN. 06357

BILLS DUE & PAYABLE 10 DAYS AFTER DATE OF STMT.

INTEREST RATE OF 1% PER MONTH (12% PER ANNUM) WILL BE ADDED TO ALL ACCOUNTS 30 DAYS PAST DUE.

Customer's Order No. ______ Date 11.24.21

Name J. Kalzbeck

Address Billin Rd

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
Tom			✓			

QUAN.	DESCRIPTION	PRICE	AMOUNT
	Check for water leaks		
*	Found nothing leaking		
	Checked toilets, ETC		
	Min Service (115)		
	Charge only		~~95.00~~
			69.00
	SALES TAX		
	TOTAL		

All claims and returned goods **MUST** be accompanied by this bill.

P1-200447
S1-300568
E9-105292

Rec'd By ______

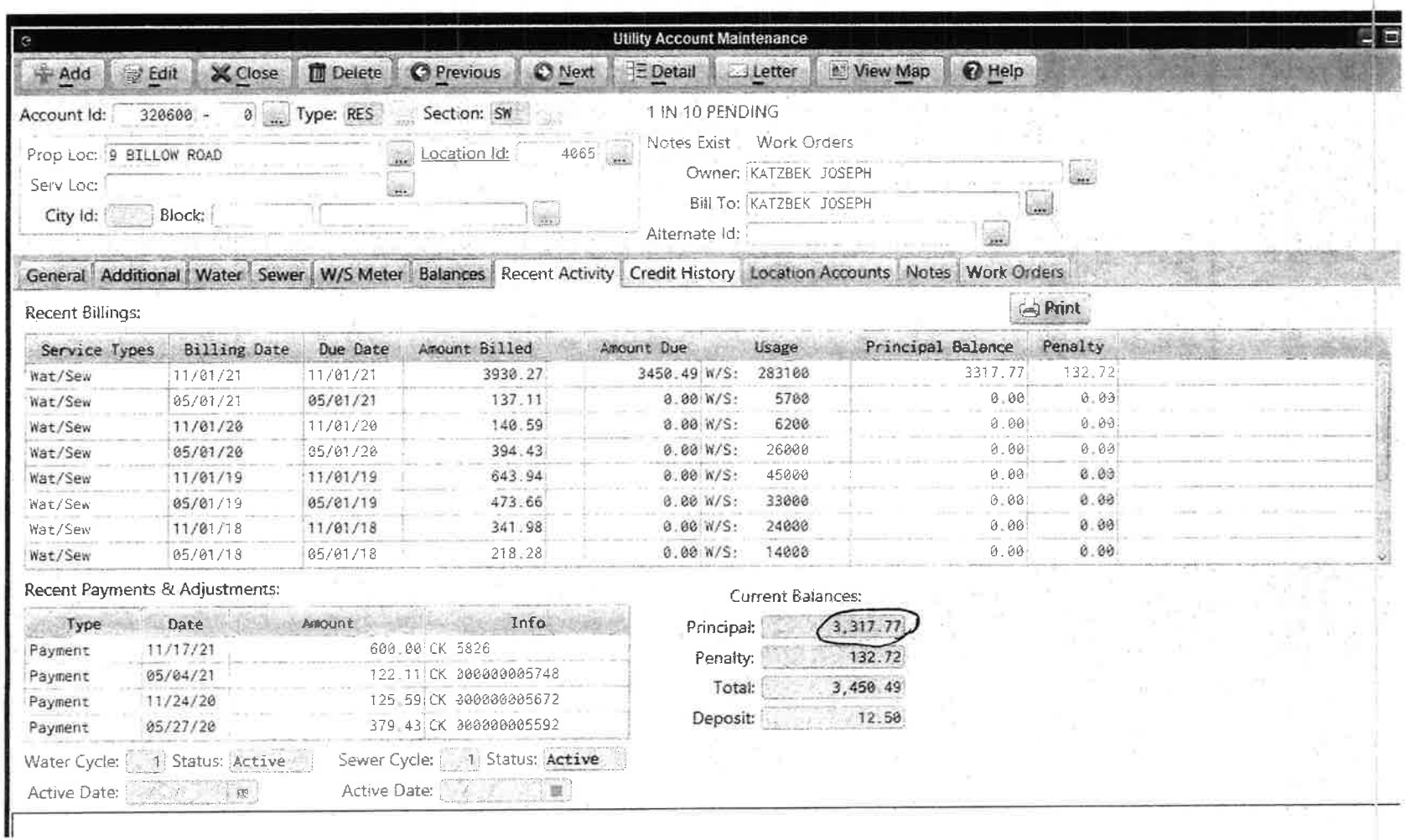
Range: 320600-0 to 320600-0 Order By: Date
Year: First to Last Account Type: First to Last Report Type: Detail
Period: 1 to 12 Include Prior Year/Prd in Bal: Y Print Block/Lot/Qual: N
Date: First to 06/30/22 Include Zero Bal: Y Name to Print: Bill To
Cycle: First to Last Exclude Non-NSF Reversed Payments: N Location to Print: Property
Section: First to Last Status: Active/Inactive
Print Service Debit/Credit Only:
Include Service Type: Water: Y Sewer: Y

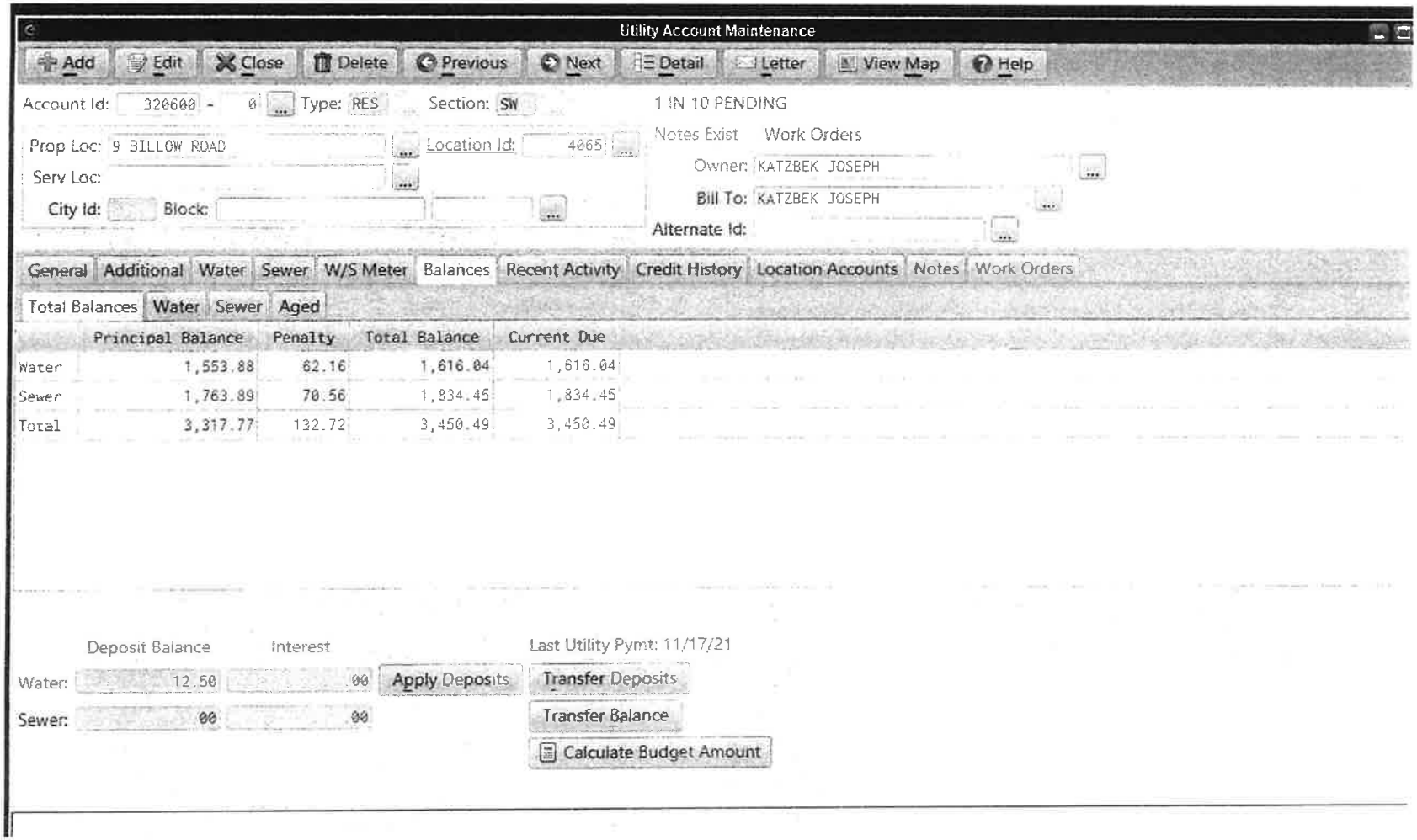
* Overpayment amount applied to periods outside the range is not displayed

Account Id / Bill To Name / Cycle	Type	Section	Property Location / Address						
Date	Type	Yr/Prd	Code	Meth	Check No	Description	Apply To	Principal	Penalty	Balance
320600-0	RES	SW	9 BILLOW ROAD							
KATZBEK JOSEPH			9 BILLOW ROAD			NIANTIC CT		06357		
Water: 1 Sewer: 1										
03/09/22	Penalty	22 1 Sewer						0.00	17.64	3,483.67
03/09/22	Penalty	22 1 Water						0.00	15.54	3,466.03
02/09/22	Penalty	22 1 Sewer				FEBRUARY PENALTY		0.00	17.64	3,450.49
02/09/22	Penalty	22 1 Water				FEBRUARY PENALTY		0.00	15.54	3,432.85
01/11/22	Penalty	22 1 Sewer				JANUARY PENALTY		0.00	17.64	3,417.31
01/11/22	Penalty	22 1 Water				JANUARY PENALTY		0.00	15.54	3,399.67
12/14/21	Penalty	22 1 Sewer				DECEMBER PENALTY		0.00	17.64	3,384.13
12/14/21	Penalty	22 1 Sewer				NOVEMBER PENALTY		0.00	17.64	3,366.49
12/14/21	Penalty	22 1 Water				DECEMBER PENALTY		0.00	15.54	3,348.85
12/14/21	Penalty	22 1 Water				OCTOBER WTR PENALTY		0.00	15.54	3,333.31
11/17/21	Payment	22 1 Sewer	S01	CK	5826			600.00-	0.00	3,317.77
11/01/21	Appl Dep	22 1 Water	W21			FR Water	03/05/12	12.50-	0.00	3,917.77
11/01/21	Bill	22 1 Sewer	S01			87629118		2,363.89		3,930.27
11/01/21	Bill	22 1 Water	MFW					12.50		1,566.38
11/01/21	Bill	22 1 Water	SAF					1.00		1,553.88
11/01/21	Bill	22 1 Water	W01			87629118		1,552.88		1,552.88
05/04/21	Payment	21 2 Water	W01	CK	000000005748	LOCKBOX		74.51-	0.00	0.00
05/04/21	Payment	21 2 Sewer	S01	CK	000000005748	LOCKBOX		47.60-	0.00	74.51
05/01/21	Appl Dep	21 2 Water	W21			FR Water	03/05/12	1.50-	0.00	122.11
05/01/21	Appl Dep	21 2 Water	W21			FR Water	03/05/12	13.50-	0.00	123.61
05/01/21	Bill	21 2 Sewer	S01			42145718		47.60		137.11
05/01/21	Bill	21 2 Water	MFW					12.50		89.51
05/01/21	Bill	21 2 Water	SAF					1.00		77.01
05/01/21	Bill	21 2 Water	W01			42145718		76.01		76.01
11/24/20	Payment	21 1 Water	W01	CK	000000005672	LOCKBOX		75.37-	0.00	0.00
11/24/20	Payment	21 1 Sewer	S01	CK	000000005672	LOCKBOX		50.22-	0.00	75.37
11/01/20	Appl Dep	21 1 Water	W21			FR Water	03/05/12	1.50-	0.00	125.59
11/01/20	Appl Dep	21 1 Water	W21			FR Water	03/05/12	13.50-	0.00	127.09
11/01/20	Bill	21 1 Sewer	S01			42145718		50.22		140.59
11/01/20	Bill	21 1 Water	MFW					12.50		90.37
11/01/20	Bill	21 1 Water	SAF					1.00		77.87
11/01/20	Bill	21 1 Water	W01			42145718		76.87		76.87
05/27/20	Payment	20 2 Water	W01	CK	000000005592	LOCKBOX		168.83-	0.00	0.00
05/27/20	Payment	20 2 Sewer	S01	CK	000000005592	LOCKBOX		210.60-	0.00	168.83
05/01/20	Appl Dep	20 2 Water	W21			FR Water	03/05/12	1.50-	0.00	379.43
05/01/20	Appl Dep	20 2 Water	W21			FR Water	03/05/12	13.50-	0.00	380.93
05/01/20	Bill	20 2 Sewer	S01			42145718		210.60		394.43
05/01/20	Bill	20 2 Water	MFW					12.50		183.83

Range of Accounts: 320600-0 to 320600-0 Status: Both
Range of Dates: First to 06/30/22 Service Type: All Reading Type Includes:
Range of Years: First to Last Name to Print: Bill To Standard: Y Final: Y Prorated Final: Y
Range of Periods: First to Last Location to Print: Property Reset: Y Interim: Y Consumption: Y
Range of Cycles: First to Last Minimum Usage: -99999999999 Max Usage: 99999999999
Range of Acct Types: First to Last Range of City Ids: First to Last Estimate Flag Includes:
Range of Sections: First to Last Range of Bill Group Ids: First to Last Actual: Y Estimate: Y Customer Reads: Y
Read: Y Do Not Read: Y Retired: Y

Account Id / Type / Section / Cycle / Bill Group	Location Name / Meter Num	Mult	Size	Book	Page	Units	Code	Year	Prd	Date	Type	Est Flag	Readings	Usage	Roll Flag	Ref Num
320600-0	9 BILLOW ROAD					1.00	S01	Water/Sewer Standard Meter: 2 Meter Group: 1 Status: Read								
RES SW	KATZBEK JOSEPH					1.00	W01	Meter Num: B87629118					Serial Num: 87629118			
W: 1 S: 1	B87629118	1	10	FLEX		1.00	SAF	2022	2	04/20/22	S		26110	26110		14878
	B00520501	1000	7	10	3300	1.00	MFW	2022	1	10/22/21	S		0	0		13274
								2022	1	10/21/21	R		0	0		13270
														26110		
								Water/Sewer Standard Meter: 1 Meter Group: 1 Status: Retired								
								Meter Num: B00520501					Serial Num: 42145718			
								2022	1	10/21/21	I		1078000	26000		13270
								2022	1	10/19/21	I		1052000	0		13259
								2022	1	09/08/21	S		1052000	257100		13066
								2021	2	03/22/21	S		794900	5700		12554
								2021	1	09/09/20	S		789200	6200		11963
								2020	2	03/05/20	S		783000	9000		11142
								2020	2	01/14/20	I	C	774000	2000		10964
								2020	2	12/18/19	I	C	772000	1000		10964
								2020	2	12/09/19	I	C	771000	1000		10964
								2020	2	12/02/19	I	C	770000	1000		10964
								2020	2	11/25/19	I	C	769000	1000		10964
								2020	2	11/18/19	I		768000	11000		10932
								2020	1	09/03/19	S		757000	45000		10752
								2019	2	02/20/19	S		712000	33000		10303
								2019	1	08/28/18	S		679000	24000		9856
								2018	2	03/05/18	S		655000	14000		9501
								2018	1	08/17/17	S		641000	21000		8969
								2017	2	03/21/17	S		620000	11000		8625
								2017	1	08/22/16	S		609000	26000		8224
								2016	2	02/25/16	S		583000	17000		7959
								2016	1	08/17/15	S		566000	18000		7709
								2015	2	03/26/15	S		548000	14000		7491
								2015	1	08/27/14	S		534000	24000		7135
								2014	2	03/20/14	S		510000	8000		6817
								2014	1	09/09/13	S		502000	18000		6509
								2013	2	03/06/13	S		484000	10000		6186
								2013	1	08/20/12	S		474000	14000		5917
								2012	2	02/22/12	S		460000	3000		5650
								2012	1	09/20/11	S		457000	19000		5454
								2011	2	02/24/11	S		438000	3000		5196
								2011	1	09/10/10	S		435000	23000		4965
								2010	2	03/05/10	S		412000	5000		4699


Utility Account Maintenance
Add
Edit
Close
Delete
Previous
Next
Detail
Letter
View Map
Help
Account Id: 320600 - 0
Type: RES
Section: SW
1 IN 10 PENDING
Prop Loc: 9 BILLOW ROAD
Location Id: 4065
Notes Exist
Work Orders
Serv Loc:
Owner: KATZBEK JOSEPH
City Id:
Block:
Bill To: KATZBEK JOSEPH
Alternate Id:
General
Additional
Water
Sewer
W/S Meter
Balances
Recent Activity
Credit History
Location Accounts
Notes
Work Orders
Recent Billings:
Print
Service Types | Billing Date | Due Date | Amount Billed | Amount Due | Usage | Principal Balance | Penalty
Wat/Sew | 11/01/21 | 11/01/21 | 3930.27 | 3450.49 W/S: 283100 | 3317.77 | 132.72
Wat/Sew | 05/01/21 | 05/01/21 | 137.11 | 0.00 W/S: 5700 | 0.00 | 0.00
Wat/Sew | 11/01/20 | 11/01/20 | 140.59 | 0.00 W/S: 6200 | 0.00 | 0.00
Wat/Sew | 05/01/20 | 05/01/20 | 394.43 | 0.00 W/S: 26000 | 0.00 | 0.00
Wat/Sew | 11/01/19 | 11/01/19 | 643.94 | 0.00 W/S: 45000 | 0.00 | 0.00
Wat/Sew | 05/01/19 | 05/01/19 | 473.66 | 0.00 W/S: 33000 | 0.00 | 0.00
Wat/Sew | 11/01/18 | 11/01/18 | 341.98 | 0.00 W/S: 24000 | 0.00 | 0.00
Wat/Sew | 05/01/18 | 05/01/18 | 218.28 | 0.00 W/S: 14000 | 0.00 | 0.00
Recent Payments & Adjustments:
Type | Date | Amount | Info
Payment | 11/17/21 | 600.00 | CK 5826
Payment | 05/04/21 | 122.11 | CK 300000005748
Payment | 11/24/20 | 125.59 | CK 300000005672
Payment | 05/27/20 | 379.43 | CK 300000005592
Current Balances:
Principal: 3,317.77
Penalty: 132.72
Total: 3,450.49
Deposit: 12.50
Water Cycle: 1 Status: Active
Active Date:
Sewer Cycle: 1 Status: Active
Active Date: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City Id:
Block:
Bill To: KATZBEK JOSEPH
Alternate Id:
General
Additional
Water
Sewer
W/S Meter
Balances
Recent Activity
Credit History
Location Accounts
Notes
Work Orders
Total Balances
Water
Sewer
Aged
Principal Balance
Penalty
Total Balance
Current Due
Water 1,553.88 62.16 1,616.04 1,616.04
Sewer 1,763.89 70.56 1,834.45 1,834.45
Total 3,317.77 132.72 3,450.49 3,450.49
Deposit Balance
Interest
Last Utility Pymt: 11/17/21
Water: 12.50 .00
Apply Deposits
Transfer Deposits
Sewer: .00 .00
Transfer Balance
Calculate Budget Amount

WATER LEAK ADJUSTMENT REQUEST
April 2022
(for November 2021 Billing Period)

ADDRESS	UNADJUSTED BILL				EXPLANATION	EXCEEDS PREVIOUS TWO BILLS BY 33%	AVERAGE OF PREVIOUS TWO COMPARABLE BILLS				RECALCULATED PER "1 in 10"				
	GALLONS	$ WATER	$ SEWER	$ TOTAL			GALLONS	$ WATER	$ SEWER	$ TOTAL	"EXCESSIVE WATER USED"	ADJUSTED CONSUMPTION (unadjusted gallons less excessive water used)	$ WATER	$ SEWER	$ TOTAL
9 Billow Rd. (Account #320600-0)	283,100	1,552.88	2,363.89	3,916.77	New Irrigation System	yes	26,600	171.93	213.76	385.69	128,750	154,350	792.51	1,288.82	2,081.33

The calculation for adjustment to the water bill is based on the historical average of the last two comparable billing periods.

The water bill adjustment for excessive use shall be calculated by taking the average amount of water used during the preceding two comparable billing periods and then subtracting that amount from the amount of water used during the excessive billing period. One-half of the resulting figure shall be the "excessive water" used. The "excessive water" used is subtracted from the unadjusted water use to get the adjusted consumption.

2020-2021	Water Rate	$65.41	+	$4.82	per 1000 gallons	or	$5.32	per 1000 gallons if over 40,000 gallons in six-month period							
2020-2021	Sewer Rate			$8.35	per 1000 gallons										

WATER LEAK ADJUSTMENT REQUEST
April 2022
(for November 2021 Billing Period)

ADDRESS	UNADJUSTED BILL				EXPLANATION	EXCEEDS PREVIOUS TWO BILLS BY 33%	AVERAGE OF PREVIOUS TWO COMPARABLE BILLS				RECALCULATED PER "1 in 10"				
	GALLONS	$ WATER	$ SEWER	$ TOTAL			GALLONS	$ WATER	$ SEWER	$ TOTAL	"EXCESSIVE WATER USED"	ADJUSTED CONSUMPTION (unadjusted gallons less excessive water used)	$ WATER	$ SEWER	$ TOTAL
9 Billow Rd. (Account #320600-0)	283,100	1,552.88	2,363.89	3,916.77	New Irrigation System	yes	25,600		213.76	213.76			1,552.88	213.76	1,766.64

The calculation for adjustment to the sewer bill is based on the historical average of the last two comparable billing periods. Water usage reflects the total consumption for the period.

The water bill adjustment for excessive use is calculated here to reflect the customer's request to reflect the full amount of water used during the period but with the last two comparible billing periods of sewer usage using the logic that the excess water was used for irrigation purposes and did not enter the sewer collection system.

2020-2021	Water Rate	$65.41	+	$4.82	per 1000 gallons	or	$5.32	per 1000 gallons if over 40,000 gallons in six-month period							
2020-2021	Sewer Rate			$8.35	per 1000 gallons										

Department of Finance

Memo

To: Kevin A. Seery, First Selectman
Water & Sewer Commission
Benjamin M. North, Utility Engineer
Joe Bragaw, Public Works Director

From: Anna M. Johnson, Finance Director

Date: April 20, 2022

Re: Month End Reports – March 31, 2022

EAST LYME
WATER & SEWER COMMISSION
APR 26 2022
AGENDA # 6

Water

The available cash balance in Water Operations at month end March 2022 was $1,783,921 compared to $1,488,227 in 2021. Please note $189,640 of the current cash balance is Meter Deposit funds and $42,826 is due to Sewer Operations.

During the month of March, we received $35,620 in revenues for a total fiscal year to date of $1,991,476 or 54.62% of the budgeted amount compared to $41,332 and $2,073,280 or 60.3% for fiscal year ended June 30, 2021. In March we billed $14,919 for Prison use compared to $27,377 in March 2021.

Total water operating expenditures for the month of March were $329,218 of the amount budgeted compared to $133,955 for fiscal year ended June 30, 2021. The percent of budget expended is 64% compared to 66% for 2021. During the month of March we paid $53,483 for electricity, $38,426 for chemicals, $17,675 for Maintenance of Transmission and Distribution, and $41,423 for Interconnection.

Sewer

The available cash balance in Sewer Operations at month end March 2022 was $716,034 compared to $79,335 in March 2021. During the month of March, we received $32,558 in revenues for a total fiscal year to date of $1,321,133 or 58.40% of the budgeted amount compared to $32,770 and $1,270,246 or 58.60% for fiscal year ended June 30, 2021. In March we billed $30,401 for Prison use compared to $31,986 in March 2021.

Total sewer operating expenditures for the month of March were $146,495 of the amount budgeted compared to $432,338 for fiscal year ended June 30, 2021. The percent of budget expended is 63% compared to 81% for 2021. During the month we expended $35,845 to the Town of Waterford for treatment plant fees, $15,194 for utilities and $16,870 for chemicals.

Sewer Assessment

The available cash balance in Sewer Assessment Fund at month end March 31, 2022 was $3,740,936 compared to $2,519,566 in March 2021. During the month we received $131,580 in Assessments and there were no cash outlays.

AMJ/nb

Town of East Lyme
Water & Sewer Operations
March 2022 Budget Highlights

Description	3/31/2022	3/31/2021	Increase (Decrease)
WATER			
Total Revenues (month only)	35,620	41,332	(5,712)
Prison Billing (month only)	14,919	27,377	(12,457)
Delinquent Interest YTD	9,025	11,266	(2,241)
Benefit Charges YTD	49,350	38,250	11,100
Assessment Charges YTD	4,800	7,623	(2,823)
Connection Charges YTD	25,500	14,000	11,500
Misc/Turn On-Off Fees YTD	11,641	8,534	3,107
Lease Rental YTD	45,090	53,930	(8,840)
Private Hydrant Fees YTD	37,750	30,375	7,375
Total Expenditures YTD	2,153,570	2,021,677	131,893
SEWER			
Total Revenues (month only)	32,558	32,770	(212)
Prison Billing (month only)	30,401	31,986	(1,585)
Total Expenditures	1,277,077	1,731,598	(454,521)
Treatment Plant/System	448,413	770,824	(322,411)
Utilities	116,148	106,969	9,179
Chemicals	78,170	86,905	(8,735)

TOWN OF EAST LYME WATER DEPT

PROPOSED FY 22-23 OPERATING BUDGET - EXPENDITURES

Account Description	Acct #	Actual FY 19-20	Actual FY 20-21	Adptd Bdgt FY 21-22	Proj EOY FY 21-22	Prop Bdgt FY 22-23	Diff from FY 21-22 Amount	Diff from FY 21-22 %	NOTES/COMMENTS
FICA/Medicare	114-100-121	$ 59,940	$ 65,400	$ 71,700	$ 75,844	$ 88,548	$ 16,848	23.50%	
Bonds/Principal	300-200-201	$ 312,564	$ 258,749	$ 252,957	$ 252,957	$ 765,127	$ 512,170	202.47%	see debt schedule
Meter Rep Project	300-200-202	$ 14,670	$ 11,648	$ 249,410	$ 237,988	$ 105,000	$ (144,410)	-57.90%	payments $95k, extra $10k
State Assessment Fee	300-300-301	$ 11,198	$ 11,200	$ 11,424	$ -	$ -	$ (11,424)		
New Services	300-340-345	$ 7,125	$ 3,999	$ 7,700	$ 11,200	$ 8,000	$ 300	3.90%	
New Meters	300-340-346	$ 5,000	$ 3,103	$ 5,100	$ 5,680	$ 2,500	$ (2,600)	-50.98%	
Tools & Equip	300-390-394	$ 9,951	$ 7,061	$ 8,200	$ 10,664	$ 9,000	$ 800	9.76%	
Communications Equip	300-390-397	$ 5,141	$ 6,604	$ 4,700	$ 7,298	$ 8,500	$ 3,800	80.85%	
Bonds Interest	300-400-427	$ 63,110	$ 212,852	$ 141,805	$ 141,805	$ 254,449	$ 112,644	79.44%	see debt schedule
OperatingTransfers Out	300-500-520	$ 59,002	$ 60,477	$ 62,500	$ 62,500	$ 67,329	$ 4,829	7.73%	
Payment to SAF	300-500-521	$ 40,000	$ 50,000	$ 35,000	$ 71,294	$ 35,000	$ -	0.00%	
Meter Deposits Reimb.	300-600-610	$ 89,999	$ -	$ 152,000	$ 107,300	$ -	$ (152,000)		
Maintenance of Wells	300-610-614	$ 59,828	$ 92,183	$ 61,800	$ 87,678	$ 84,300	$ 22,500	36.41%	ded maint of tr equip
Fuels	300-620-622	$ 32,408	$ 28,027	$ 34,900	$ 34,900	$ 38,900	$ 4,000	11.46%	
Power	300-620-623	$ 282,198	$ 299,687	$ 290,700	$ 308,382	$ 310,000	$ 19,300	6.64%	
Maint. Of BPS	300-630-631	$ 19,451	$ 17,038	$ 17,500	$ 17,500	$ 40,000	$ 22,500	128.57%	elim. MP equp
Maint of Pumping Equip	300-630-633	$ 11,761	$ 4,926	$ 17,500	$ 29,165	$ -	$ (17,500)		
Chemicals	300-640-641	$ 240,590	$ 229,198	$ 267,800	$ 301,319	$ 293,000	$ 25,200	9.41%	
Maint. Of Tr. Equip	300-650-652	$ 17,000	$ 15,373	$ 17,500	$ 19,627	$ -	$ (17,500)		
Misc Maps & Records	300-660-665	$ 672	$ 4,260	$ 2,900	$ 2,900	$ 2,900	$ -	0.00%	
Safety Equip & Training	300-660-666	$ 11,625	$ 15,000	$ 15,000	$ 15,000	$ 17,500	$ 2,500	16.67%	
Maint of O&M	300-670-671	$ 12,197	$ 10,051	$ 14,140	$ 15,804	$ 15,140	$ 1,000	7.07%	
Maint of Storage Tank	300-670-672	$ 1,908	$ 5,000	$ 5,000	$ 90	$ -	$ (5,000)		elim - inc Maint T&D
Maint of Trans. & Dist	300-670-673	$ 31,356	$ 51,931	$ 40,000	$ 96,673	$ 58,000	$ 18,000	45.00%	
Maint of Services	300-670-675	$ (1,783)	$ (5,658)	$ 3,000	$ 379	$ -	$ (3,000)		elim - inc Maint T&D
Maint of Meters	300-670-676	$ -	$ -	$ -	$ -	$ -	$ -		
Maint of Hydrants	300-670-677	$ 1,334	$ 1,101	$ -	$ -	$ 2,000	$ 2,000		
Customer Records & coll	300-900-903	$ 21,482	$ 27,341	$ 27,900	$ 27,900	$ 46,000	$ 18,100	64.87%	
Admin Asst(s) Salary	300-920-201	$ 64,320	$ 66,628	$ 68,300	$ 68,180	$ 71,600	$ 3,300	4.83%	
PW & Fin Dir, Util Eng	300-920-202	$ 266,769	$ 298,783	$ 232,300	$ 252,537	$ 231,800	$ (500)	-0.22%	
Field Per Salaries - Reg	300-920-204	$ 423,805	$ 428,450	$ 559,500	$ 654,231	$ 597,500	$ 38,000	6.79%	
Field Per Salaries - OT	300-920-205	$ 60,446	$ 73,300	$ 76,600	$ 76,600	$ 85,300	$ 8,700	11.36%	
Temp Meter Installers	new line item	$ -	$ -	$ -	$ -	$ 170,560	$ 170,560		
Office Supplies & Misc	300-920-210	$ 1,605	$ 1,859	$ 2,100	$ 2,100	$ 2,200	$ 100	4.76%	
Interconnection	300-920-220	$ 113,569	$ 123,150	$ 100,000	$ 41,423	$ 77,900	$ (22,100)	-22.10%	
Outside Services	300-920-230	$ 81,864	$ 77,853	$ 82,500	$ 87,810	$ 87,500	$ 5,000	6.06%	
Insurance Property	300-920-240	$ 23,370	$ 23,878	$ 25,100	$ 27,200	$ 26,400	$ 1,300	5.18%	
Empl Benefits & Pensions	300-920-260	$ 264,811	$ 275,820	$ 328,100	$ 290,706	$ 318,100	$ (10,000)	-3.05%	
Vehicle Exp	300-930-321	$ 8,434	$ 9,590	$ 8,000	$ 12,500	$ 9,000	$ 1,000	12.50%	cost of parts going up
Veh Aqu. Program	300-930-323	$ 40,864	$ 30,267	$ 59,508	$ 53,234	$ 74,028	$ 14,520	24.40%	replace 1 truck

WATER & SEWER COMMISSION

AGENDA # 8

APR 26 2022

TOWN OF EAST LYME WATER DEPT

PROPOSED FY 22-23 OPERATING BUDGET - EXPENDITURES (Cont.)

Account Description	Acct #	Actual FY 19-20	Actual FY 20-21	Adptd Bdgt FY 21-22	Proj EOY FY 21-22	Prop Bdgt FY 22-23	Diff from FY 21-22 Amount	Diff from FY 21-22 %	NOTES/COMMENTS
Capitol Projects	300-930-325	$ -	$ 13,020	$ 180,000	$ 35,805	$ 10,000	$ (170,000)	-94.44%	
Contingency	300-930-999	$ 92,677	$ 108,265	$ 100,000	$ 107,556	$ 100,000	$ -	0.00%	
TOTAL		$ 2,862,261	$ 3,017,413	$ 3,640,144	$ 3,651,727	$ 4,113,081	$ 472,937	13.0%	
Budget expenditures		$ 3,351,439	$ 3,418,468	carry over	$ (207,438)				
Diff from budgeted (under)/over		$ (489,178)	$ (401,055)	Mod Exp.	$ 3,444,289				

PROPOSED FY 22-23 OPERATING BUDGET - REVENUE

Account Description	Acct #	Actual FY 19-20	Actual FY 20-21	Adptd Bdgt FY 21-22	Proj EOY FY 21-22	Prop Bdgt FY 22-23	Diff from FY 20-21 Amount	Diff from FY 20-21 %	NOTES/COMMENTS
Metered Water Service	01-100-400	$ 3,020,899	$ 3,132,243	$ 3,181,179	$ 3,085,532	$ 3,255,042	$ 73,863	2.3%	
Inter govt rev	01-100-402	$ (176)	$ 774			$ -			
Deliq Int- Water Service	01-100-404	$ 10,240	$ 13,222	$ 13,000	$ 11,000	$ 15,000	$ 2,000	15.4%	
	Subtotal	$ 3,030,963	$ 3,146,240	$ 3,194,179	$ 3,096,532	$ 3,270,042	$ 75,863	2.4%	
Benefits Charge	02-200-401	$ 22,700	$ 49,700	$ 28,900	$ 52,000	$ 50,000	$ 21,100	73.0%	
Assessments Charge	02-200-402	$ 6,086	$ 7,053	$ 8,000	$ 6,000	$ 8,000	$ -	0.0%	
Lien Fees - Ass/Conn	02-200-403	$ 24	$ 24	$ -	$ -	$ -	$ -		
Deliq Int - Asmts/Conn	02-200-404	$ 838	$ 1,337	$ 2,000	$ 1,500	$ 2,000	$ -	0.0%	
Connection Charges	02-200-405	$ 25,000	$ 20,000	$ 22,000	$ 32,000	$ 30,000	$ 8,000	36.4%	
State Assessment Fee	02-200-406	$ -	$ -	$ -	$ -	$ -	$ -		
Sewer portion of meters	02-200-407	$ 80,500	$ -	$ 80,500	$ 20,000	$ 80,500	$ -	0.0%	
	Subtotal	$ 135,148	$ 78,114	$ 141,400	$ 111,500	$ 170,500	$ 29,100	20.6%	
Private Hydrant Fees	05-100-462	$ 27,305	$ 30,375	$ 30,983	$ 37,750	$ 39,260	$ 8,277	26.7%	
Town Fire Hydrant Fees	05-100-463	$ 43,098	$ 47,408	$ 52,149	$ 52,149	$ 57,364	$ 5,215	10.0%	
Misc/Turn of-on fees	05-100-471	$ 24,235	$ 24,851	$ 25,000	$ 25,000	$ 30,000	$ 5,000	20.0%	
Inspection Fees	05-100-472	$ -	$ -	$ -	$ -	$ -	$ -	-	
	Subtotal	$ 94,638	$ 102,634	$ 108,132	$ 114,899	$ 126,624	$ 18,492	17.1%	
Lease Rental	08-800-472	$ 49,976	$ 68,162	$ 60,219	$ 60,219	$ 60,519	$ 300	0.5%	
Use of Ret. Earnings	08-900-002	$ -		$ 136,214	$ -	$ 485,396	$ 349,182	256.3%	
	Subtotal	$ 49,976	$ 68,162	$ 196,433	$ 60,219	$ 545,915	$ 349,482	177.9%	
	TOTAL	$ 3,310,725	$ 3,395,149	$ 3,640,144	$ 3,383,150	$ 4,113,081	$ 472,937	13.0%	
Budgeted Revenue		$ 3,351,439	$ 3,418,468		$ 3,640,144				
Diff - Bud./Actual (under)/over		$ (40,714)	$ (23,319)		$ (256,994)				
Actual Exp.		$ 2,862,261	$ 3,017,413		$ 3,651,727	$ 4,113,081			
Diff - Revenue		$ (448,464)	$ (377,736)		$ 268,577	$ 0			
Cumm - Retained Earnings		$ (448,464)	$ (826,200)		$ (557,623)	$ (72,227)			

WATER DEPARTMENT - Vehicle Acquisition Plan

Line Item # 07-01-300-930-323

FINANCING

		Mark - Ch H2O Op		New Dump Bdy		100% water Vinny Foreman Tr		* split 50/50 w&s valve exc / vacuum tr	* split 50/50 w&s Ford Escape	* split 50/50 w & s Mini Exc - mid yr purchase	100% water New Utility Bdy - Repl Van (34)		100% water New Utility Bdy for CWO - hand down 38 to Asst CWO		100% water New Utility Bdy for insp - hand down 47 to RC		100% water New Utility Bdy - repl 41		100% water New Utility Bdy - repl 36	
Purch Yr		2015		2018		2020		2020	2020	2021	2022		2022		2023		2025		2026	
Plate #		EL 38		EL 48		EL 31					EL 34		EL 38		EL 40		EL 41		EL 41	
Total Cost						$ 53,000		$ 63,400	$ 23,690		$ 56,000		$ 56,000		$ 65,000		$ 60,000		$ 61,500	
Payment		$ 1,008.66		$ 629.99		$ 1,719	$ 931	$ 573	$ 215	$ 7,633.34	$ 983.00		$ 983.00		$ 1,210.00		$ 1,092		$ 1,119	
						$ 1,727	16	$ 1,146	$ 430											
Int rate						3.2%		3.2%	3.2%		2.8%		2.8%		4.5%		3.5%		3.5%	

PAYMENTS

FY	Old Payments	Mark A's Truck	# of Pymts	Dump Body	# of Pymts	All three Truck	# of Pymts	valve ex	Util Eng & Asst	Mini Exc	Replace Van - 34	# of Pymts	New truck	# of Pymts	Replace Rr 40	# of Pymts	Replace Rr 40	# of Pymts	Replace Rr 40	# of Pymts	FY	Budget Amount
16-17	$ 19,441	$ 12,104	12			Payments															16-17	$ 31,545
17-18	$ 19,441	$ 12,104	12																		17-18	$ 31,545
18-19	$ 14,793	$ 12,104	12	$ 3,150	5																18-19	$ 30,047
19-20	$ 2,296	$ 12,104	12	$ 7,560	12	$ 18,904	11														19-20	$ 40,864
20-21		$ 2,017	2	$ 7,560	12	$ 20,690	12			$ 7,633											20-21	$ 37,900
21-22				$ 7,560	12	$ 20,723	12			$ 7,633	$ 11,796	12	$ 11,796	12							21-22	$ 59,508
22-23				$ 7,560	12	$ 20,723	12			$ 7,633	$ 11,796	12	$ 11,796	12	$ 14,520	12					22-23	$ 74,028
23-24				$ 4,410	7	$ 20,723	12			$ 7,633	$ 11,796	12	$ 11,796	12	$ 14,520	12					23-24	$ 70,878
24-25				$ -		$ 1,727	1			$ 7,633	$ 11,796	12	$ 11,796	12	$ 14,520	12	$ 13,104	12			24-25	$ 60,576
25-26				$ -							$ 11,796	12	$ 11,796	12	$ 14,520	12	$ 13,104	12	$ 13,428	12	25-26	$ 64,644
26-27				$ -											$ 14,520	12	$ 13,104	12	$ 13,428	12	26-27	$ 41,052
27-28				$ -													$ 13,104	12	$ 13,428	12	27-28	$ 26,532
28-29				$ -													$ 13,104	12	$ 13,428	12	28-29	$ 26,532
29-30				$ -															$ 13,428	12	29-30	$ 13,428

EXISTING WATER DEPT VEHICLES

Plate #	Year	Make	Model	Paid Off	# Veh	Repl Year	Purpose
EL31	2019	Ford	Util Bdy	paid off	1	2031	Used by Water Foreman - Vinny McGinty
EL32?	2022	Ford	Util Bdy				Will be used by Chief Water Operator - Mark Alfieri, ordered in 7/21, should get in 8/22
old EL34	2010	Dodge	Sprinter	paid off	2	2022	Used primarily by Steve Holiday to work on wells and meter work orders - vehicle to be sold off when replaced
new EL 34	2022	Ford	Util Bdy				Will be used by Steve Holiday, ordered in 7/21, should get in 8/22
EL36	2014	GMC	Util Bdy	paid off	3	2026	Used by Al Larson
EL37	2003	Chevy	Silverado	paid off	4		Currently used by Asst Chief Water Operator, Jeff Paquet - was Mike Poola' old truck - retire if not needed by meter replacement gang
EL38	2016	GMC	Util Bdy	paid off	5	2028	Used primarily by the Chief Water Operator - Mark Alfieri - get new vehicle and hand down 38 to Asst CWO
EL40	2010	GMC	Pickup	paid off	6	2023	Used by Rob Cunningham - rob wilson's old tr - was spare
EL41	2005	Chevy	Pickup	paid off	6	2025	Used by Brian Chappell, was Pierre's old truck
EL47	2015	GMC	Sierra PU	paid off	7	2027	Used primarily by the Water Inspector - Pat Morris for work orders/inspections, got new engine in 2/22
EL48	2004	International	Dump	1/24	8	2026	Water main breaks-moving material - got new body in 2018, cab & chassis good
	2019	Valve Excer	Trailer	paid off		2035	
	2020	Mini Exc		6/24		2035	
		Backhoe					
	2019	Big Tex	Lg Trailer	1/24		2039	
	2016		Trailer				for Water Main breaks

EAST LYME SEWER DEPT

PROPOSED FY 21-22 OPERATING BUDGET - EXPENDITURES

Account Description	Acct #	Actual FY 19-20	Actual FY 20-21	Cur. Bdgt FY 21-22	Proj EOY FY 21-22	Prop Budget FY 22-23	Diff w/FY21-22 Bdgt Amt	Diff w/FY21-22 Bdgt %
FICA/Medicare	114-100-121	$ 38,400	$ 40,184	$ 42,000	$ 37,316	$ 42,500	$ 500	1.19%
Vehicle - lease Payment	200-100-006	$ 28,688	$ 28,529	$ 28,558	$ 28,558	$ 28,558	$ (0)	0.00%
Salaries - Field Personnel	300-100-101	$ 265,328	$ 239,956	$ 289,800	$ 276,404	$ 306,900	$ 17,100	5.90%
Field OT	300-100-102	$ 47,900	$ 56,245	$ 56,000	$ 51,868	$ 58,300	$ 2,300	4.11%
Personnel Benefits	300-100-122	$ 90,600	$ 45,542	$ 155,500	$ 139,366	$ 151,600	$ (3,900)	-2.51%
Treatment Plnt & Sys Fee	300-610-210	$ 601,913	$ 770,824	$ 765,944	$ 862,633	$ 955,200	$ 189,256	24.71%
Maint. of Pump St Equip	300-610-215	$ 74,659	$ 65,615	$ 74,500	$ 85,074	$ 80,000	$ 5,500	7.38%
Maint of Wet Wells	300-610-217	$ 53,000	$ 31,571	$ 50,000	$ 56,347	$ 55,000	$ 5,000	10.00%
Maint of System	300-610-220	$ 16,961	$ 32,049	$ 10,000	$ 12,688	$ 11,000	$ 1,000	10.00%
I/I Improvements	300-610-221	$ -	$ -	$ 1,000	$ 1,000	$ 1,000	$ -	0.00%
Materials & Supplies	300-610-225	$ 9,766	$ 12,226	$ 10,200	$ 12,200	$ 10,500	$ 300	2.94%
Utilities	300-610-230	$ 165,196	$ 157,605	$ 160,650	$ 160,650	$ 162,000	$ 1,350	0.84%
Telephones	300-610-231	$ 5,317	$ 6,450	$ 5,900	$ 5,963	$ 5,900	$ -	0.00%
Fuel Oil & Gas	300-610-235	$ 22,019	$ 19,379	$ 21,800	$ 17,680	$ 28,800	$ 7,000	32.11%
Chemicals	300-610-240	$ 103,578	$ 123,429	$ 118,450	$ 120,280	$ 124,400	$ 5,950	5.02%
O&M Exp	300-610-250	$ 9,583	$ 10,593	$ 14,140	$ 14,615	$ 15,140	$ 1,000	7.07%
Maint of Vehicles	300-610-260	$ 6,649	$ 8,899	$ 7,000	$ 9,000	$ 8,500	$ 1,500	21.43%
Salaries - Admin	400-100-101	$ 228,318	$ 240,083	$ 202,400	$ 215,708	$ 189,600	$ (12,800)	-6.32%
Personnel Benefits	400-100-121	$ 42,154	$ 82,465	$ -	$ -	$ -	$ -	
Legal & Accounting	400-200-140	$ 23,300	$ 24,480	$ 27,300	$ 19,300	$ 20,300	$ (7,000)	-25.64%
Outside Services	400-200-210	$ 9,656	$ 22,957	$ 17,600	$ 17,974	$ 21,600	$ 4,000	22.73%
Insurance PDL	400-200-290	$ 33,171	$ 41,979	$ 36,900	$ 36,900	$ 38,800	$ 1,900	5.15%
Prof Development	400-300-243	$ 264	$ 150	$ 1,100	$ 1,100	$ 1,200	$ 100	9.09%
Supplies & Misc	400-300-320	$ 1,887	$ 1,797	$ 2,100	$ 2,307	$ 2,200	$ 100	4.76%
New Services/Projects	500-500-330	$ 80,500	$ -	$ 80,500	$ 20,000	$ 80,500	$ -	0.00%
Contingency	600-600-400	$ 67,351	$ 95,341	$ 50,000	$ 81,727	$ 50,000	$ -	0.00%
Op Transfer Out	800-800-801	$ -	$ 25,000	$ 30,000	$ 30,000	$ 30,000	$ -	0.00%
TOTAL EXPENSES		$ 2,026,158	$ 2,183,351	$ 2,259,342	$ 2,316,658	$ 2,479,498	$ 220,156	9.74%
				Minus Carryover from FY 20-21	$ (58,302)		$ 30,900	1.37%
				Proj Spending for FY 21-22 Budget	$ 2,258,355			
				Over/(Under) Budget	$ (987)			

PROPOSED FY 21-22 OPERATING BUDGET - REVENUES

Account Description	Acct #	Actual FY 19-20	Actual FY 20-21	Cur. Bdgt FY 21-22	Proj EOY FY 21-22	Prop Budget FY 22-23	Diff FY 21-22	Diff FY 21-22
Metered Sewer Service	01-100-600	$ 465,750	$ 364,570	$ 373,744	$ 435,556	$ 451,541	$ 77,797	20.82%
Metered (Water) Sew. Serv	01-100-610	$ 1,548,074	$ 1,689,398	$ 1,753,115	$ 1,727,175	$ 1,748,470	$ (4,645)	-0.26%
Delinquent Int	01-100-621	$ 5,179	$ 7,053	$ 7,650	$ 4,500	$ 7,650	$ -	0.00%
Inspection Fees (Billed)	05-100-043	$ 7,956	$ -	$ 2,600	$ -	$ -	$ (2,600)	-100.00%
Maintenance Fees *	05-100-044	$ 6,667	$ 5,645	$ 6,200	$ 6,200	$ 6,820	$ 620	10.00%
Permits	05-100-550	$ 4,215	$ 5,780	$ 6,800	$ 4,000	$ 6,800	$ -	0.00%
Payment from SAF		$ -	$ -	$ -	$ -	$ 125,000	$ 125,000	
Operating Transfers In	08-800-810	$ 89,107	$ 81,328	$ 109,233	$ 109,233	$ 133,218	$ 23,985	21.96%
TOTAL REVENUE		$ 2,126,948	$ 2,153,773	$ 2,259,342	$ 2,286,664	$ 2,479,498	$ 220,156	9.74%
TOTAL EXPENSES		$ 2,026,158	$ 2,183,351		$ 2,258,355	$ 2,479,498		
DIFFERENCE		$ 100,790	$ (29,578)		$ 28,309	$ 0		

EL SEWER DEPT - Vehicle Acquistion Program

Line Item # 06-01-200-100-007

Desc.	Pat W		Rick		New Flatbed Tr - PJ		valve ex & vac. tr (* split 50/50 w/s)	Ford Escape (* split 50/50 w/ s)	Mech		Brian **		Vince		
Purch Yr	2015		2019		2020		2020	2020	2022		2024		2027		** new truck goes
Plate #	EL 45		EL 43		EL 35			Util Eng Veh	EL 39		EL 33		EL 45		to sewer foreman
Total Cost					$ 41,000		$ 63,400	$ 23,700	$ 150,000		$ 60,000		$ 65,000		el45 goes to brian
Payment	$ 853.89		$ 881.99		$ 750.00	$ 707	$ 571	$ 213	$ 2,500		$ 1,120.00		$ 1,230.00		
					$ 1,491	$ 1,491	$ 1,141	$ 426	*						
Int Rate					3.05%	$ 1,498	3.05%	3.05%	0.00%		4.50%		5.00%		

* pay directly from sewer assessment fund

PAYMENTS

FY	Pat W		Rick		New Flatbed Tr - PJ		valve ex & vac. tr	Ford Escape	Mech		Brian **		Vince		FY	Budgeted Amount
15-16	$ 10,247	12													15-16	$ 10,247
16-17	$ 10,247	12													16-17	$ 10,247
17-18	$ 10,247	12													17-18	$ 10,247
18-19	$ 10,247	12	$ 9,702	11											18-19	$ 19,949
19-20	$ 1,708	2	$ 10,584	12	$ 16,397	11									19-20	$ 28,688
20-21			$ 10,584	12	$ 17,945	12									20-21	$ 28,529
21-22			$ 10,584	12	$ 17,974	12									21-22	$ 28,558
22-23			$ 10,584	12	$ 17,974	12			$ -	12					22-23	$ 28,558
23-24			$ 882	1	$ 17,974	12			$ -	12					23-24	$ 18,856
24-25					$ 1,498	1			$ -	12	$ 13,440	12			24-25	$ 14,938
25-26									$ -	12	$ 13,440	12			25-26	$ 13,440
26-27									$ -	12	$ 13,440	12			26-27	$ 13,440
27-28											$ 13,440	12	$ 14,760	12	27-28	$ 28,200
28-29											$ 13,440	12	$ 14,760	12	28-29	$ 28,200
	$ 42,695	50	$ 52,919	60	$ 89,762	60			$ -	60	$ 67,200	60	$ 29,520	24		$ 282,096

EXISTING SEWER DEPARTMENT VEHICLES

Plate #	Year	Make	Model	Veh #	Paid Off	Repl Yr	Purpose
EL33	2006	Chevy	Util Bdy	1	paid off	2024	Primarily used by Brian Webster
EL 35	2020	Ford	Util Bdy	2	2025	2032	Primarily used by PJ Levanti
EL39	2006	Chevy	Pickup	3	paid off	2022	Primarily used by Tim K. - looking to replace with a service truck
EL42	1994	Int.	Jetter	4	paid off		Used sporadically to clean out sewer lines
EL43	2019	Ford	F350 PU	5	2024	2031	Used by Utility Superintendent - Rick Pape
EL45	2015	GMC	Sierra	6	paid off	2027	Primarily used by Vince Bartelli - assuming Vince moves into Pat's current truck

Mechanical Solutions, Inc.
Test • Analyze • Solve • Design • Products

MSI TR-220431 Rev. 0
East Lyme CT - Vibration Troubleshooting on Two Sulzer Dry Pit Non-Clog Pumps

Field Testing Conducted on March 8th and 9th, 2022

Prepared By: Dan P. Owens & Erik A. Fillebrown
Reviewed by: Maki M. Onari & Paul A. Boyadjis

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Table of Contents

Mechanical Solutions, Inc.

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Scope of Work

Mechanical Solutions, Inc.

- Identify the root cause of the high vibration of two non-clog submersible pumps in dry pit sewer application for East Lyme Water and Sewer installed at Niantic Pumping Station in East Lyme, CT. Provide potential solution(s) to reduce the overall vibration and extend the life of the pumps via testing and possibly via FEA analysis.
- Identify the best approach to detune the structural resonance of the pumps that have been detected by previous consultants. Provide additional solution(s) with testing and design a modification via FEA analysis.

3

3

Background

Mechanical Solutions, Inc.

- MSI was contracted to perform vibration analysis and troubleshooting on two Sulzer Dry Pit Non-clog Pumps installed at Niantic Pumping Station in East Lyme, CT due to known vibration issues with the pumps since their installation 4 years ago. The pumps were installed on an emergency upgrade basis to replace the former pumps, which were driven by motors mounted on a separate floor through a long driveshaft without major modifications to the suction and discharge piping.
- MSI reviewed the preliminary information provided by the End User and determined that the following testing would be performed by MSI personnel: Experimental Modal Analysis (EMA, aka Impact Testing), Operating Deflection Shape (ODS) Testing, Motion Magnification Video Testing (VibVue®), and Continuous Monitoring (CM) Testing.

4

4

Background

Mechanical Solutions, Inc.

- Sulzer Model XFP 155J CV2 T860/4J
- Motor Power: 100 HP
- Discharge Pressure: 155 psig
- Pump Tested Operating Range: 1515 - 1785 rpm
- VDF Speed: 50.9 Hz to 60 Hz
- Impeller Diameter: 13.6 inches with a 2-Vane Impeller
- The suction piping has been modified to accommodate the suction elbow of the pumps using eccentric reducers from 14" to 8" and mirrored 45° discharges.
- The ½" thick steel baseplate (pump pedestal) is secured to the foundation by four anchor bolts at the midspans and not at the corners, and site personnel have identified that there are significant voids in the grout underneath the pump pedestal.
- Once the vibration issue of these two pumps is resolved, the construction company will continue with the replacement of the second set of pumps.

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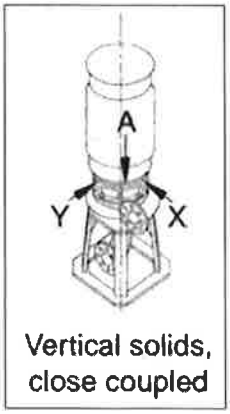
Background

Mechanical Solutions, Inc.

- *ANSI/HI 9.6.4-2016 Rotordynamic Pumps for Vibration Measurements and Allowable Values* requires that the maximum amplitude at the base of the motor should not exceed 0.34 in/s RMS.



Vertical solids, close coupled

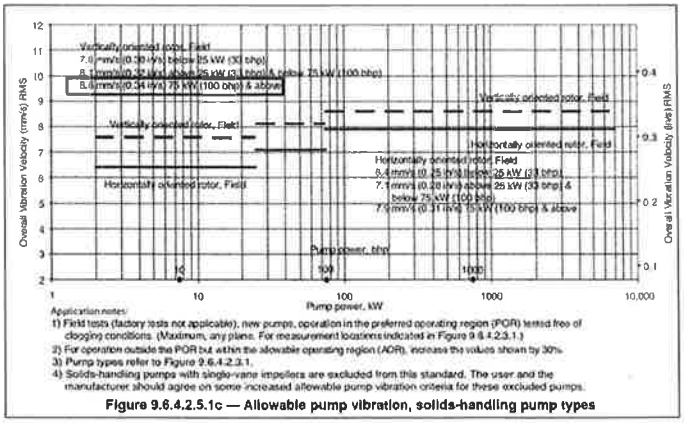


Figure 9.6.4.2.5.1c — Allowable pump vibration, solids-handling pump types

6

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Background

Mechanical Solutions, Inc.

Relationship between pump speed frequency, pump speed in rpm, and VFD frequency for Niantic Pumping Station in East Lyme, CT pumps:

Electric VFD (Hz)	51	52	53	54	55	56	57	58	59	60
Pump Speed (RPM)	1517	1547	1577	1607	1636	1666	1696	1726	1755	1785
Pump Speed in Frequency (Hz)	25.3	25.8	26.3	26.8	27.3	27.8	28.3	28.8	29.3	29.8

	Min Speed (RPM)	Max Speed (RPM)
Pump 2	1515	1785
Pump 3	1515	1785
Speed (Hz)	25.25	29.75
VFD Hz	50.92	60.00
VPF (2x rpm in Hz)	50.50	59.50

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Test Protocol

Mechanical Solutions, Inc.

- *Experimental Modal Analysis (EMA)*, i.e. impact testing, was performed on the motor/pump assembly structure in order to measure the system structural natural frequencies in two orthogonal directions (parallel and perpendicular to the suction piping as well as in the torsional direction). This testing was performed while the pumps were not operating.
- *Motion Magnification Video (MMV)* testing was performed using MSI's VibVue® high speed video camera system to magnify the motion of the video, supplement the accelerometer data, and allow engineers (and managers) to better visualize the actual deflection, vibration, and deformation of the rotating equipment.
- *Operating Deflection Shape (ODS)* testing was conducted on both pumps, when the pumps were operating at a steady speed (independently).
- *Continuous Monitoring (CM)* testing was performed to record vibration data during the start-up, steady operation, speed sweep, and shut-down on Pumps 2 and 3.

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Niantic Pumping Station in East Lyme, CT - Upgrade Project

Mechanical Solutions, Inc.

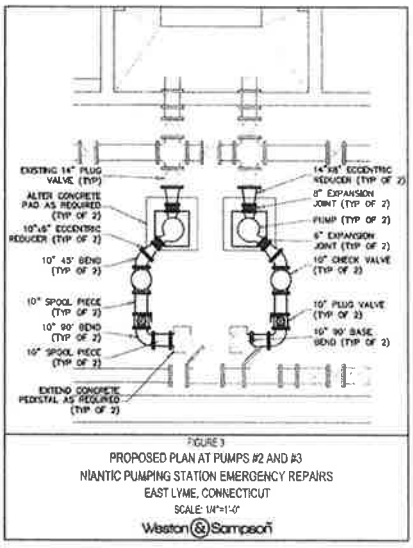

FIGURE 3
PROPOSED PLAN AT PUMPS #2 AND #3
NIANTIC PUMPING STATION EMERGENCY REPAIRS
EAST LYME, CONNECTICUT
SCALE: 1/4"=1'-0"
Weston & Sampson

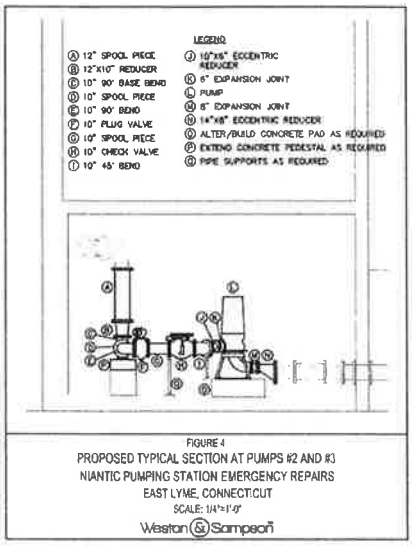

FIGURE 4
PROPOSED TYPICAL SECTION AT PUMPS #2 AND #3
NIANTIC PUMPING STATION EMERGENCY REPAIRS
EAST LYME, CONNECTICUT
SCALE: 1/4"=1'-0"
Weston & Sampson

9

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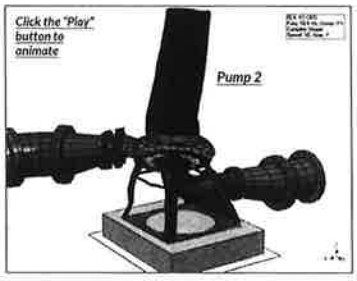
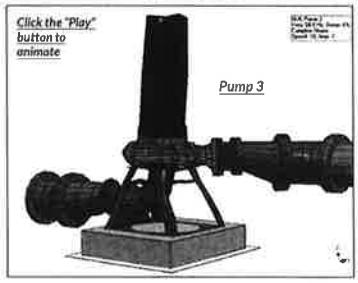
Conclusions

Mechanical Solutions, Inc.

1. Overall vibration measurements gathered at the base of the motor were measured to be well above the ANSI/ HI 9.6.4 standards (0.34 in/s RMS), while operating in the intended operating speed range (Slides 22, 67, 72, 77, 85, 88 & 91).
2. The root cause of the high vibration of the pumps is due to a resonance of one or two structural natural frequencies. The structural resonance describes side-to-side twisting motion of the pump volute due to excessive flexibility of the pump supporting pedestal. The motion at the top of the motors is reacting out-of-phase from the volute motion as a rigid body. These natural frequencies are excited by the vane pass frequency (VPF) forcing function at 2x rpm towards the upper end of the running speed range (Slides 22-25). Reference Slides 94 & 95 about Natural Frequencies, Resonance, and Critical Speed.





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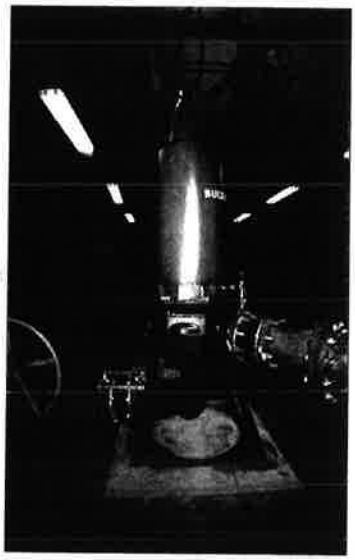
Conclusions

Mechanical Solutions, Inc.

3. The excessive flexibility of the pump support structure is evident based on MSI's VibVue® Motion Magnification Video (MMV) testing videos (Slides 26-35) and Operating Deflection Shape (ODS) testing animations (Slides 36-51).
4. The structural natural frequencies of the pumps shifted downwards during operation due to a change in the cinch effect between pedestal and the foundation. At rest conditions, there is more stiffness due to friction between parts. During operation this connection breaks (non linear phenomenon). See Slides 23-25 for comparison purposes.
5. The highest overall vibration recorded at the top of the motor was 1.38 in/s RMS (Pump 2) in the direction perpendicular to the piping followed by Pump 3 with 1.26 in/s RMS in the same direction (Slide 22). The overall vibration was dominated by 2x rpm discrete component or VPF (Slides 66-93). The discrete vibration at 1x rpm was recorded to be negligible.



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Conclusions

Mechanical Solutions, Inc.

6. When the operating speed of Pump 2 is at or below 1525 rpm (51.3 VFD Hz) & when Pump 3 is at or below 1760 rpm (59.2 VFD Hz), the vibration at the base of the motor falls just at the HI spec of 0.34 in/s RMS (Slides 77 & 91). However, the overall vibration at the top of the motor is still elevated for Pump 2 and Pump 3 (0.45 & 1.2 in/s RMS) as shown in Slides 72 & 88.
7. High pressure pulsations were detected at the discharge of Pump 2 (varied from ±18 down to ±7 psig) as shown in Slide 82 during the speed sweep from high to low speed, which could be due to the following reasons:
   a. Tight "B-gap" between the impeller trailing edge and the volute tongue.
   b. "B-gap" affected or reduced by the rocking motion of the motor frame due to the resonance conditions. The magnitude of pressure pulsation was high during elevated vibration events (structural resonance) and the opposite when the vibration was low.
8. MSI did not identify cavitation issues on these pumps.

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Recommendations

Mechanical Solutions, Inc.

1. Since the primary offending structural natural frequencies of the motors are the rocking modes in resonance with the 2x rpm excitation forcing function (from 50.5 Hz and 59.5 Hz), due to excessive flexibility of the supporting pedestal, efforts should be made to shift these natural frequencies away from the excitation source.
2. The offending structural natural frequencies should be shifted above the VPF range by stiffening the supporting pedestal. This could be accomplished by installing concrete piers and a soleplate to support the volute pump designed and provided by the pump OEM. The necessity of flexible joints at the suction and discharge nozzles should also be evaluated.
3. These modifications should be evaluated through a detailed finite element analysis (FEA) of the structure. Once this model is carefully "calibrated", based on the current field vibration data, several "*what if*" scenarios can be explored on the computer model to predict adequate separation margins, avoiding expensive on-site trial and error approaches to eliminate the structural resonance issues. The new natural frequencies should be at least 10% above the maximum speed (measured in the field or 15% based on FEA assumptions).

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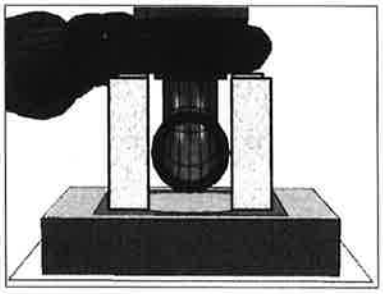
Recommendations – Pump Bearing Tower

Mechanical Solutions, Inc.

4. Since the structural natural frequencies of the pump (from 58 Hz to 62 Hz) are closer to the upper end of the VPF range, these modes should be shifted upward, well above the 2x rpm range of 50.5 Hz to 59.5 Hz, with enough separation margin to avoid resonance (see Recommendation 3).



5. The Pump Station should consider performing additional thorough testing after implementing the modifications of the pump support in order to confirm that the resonance issue has been addressed.
4. Gap B Modifications to be confirmed with the pump OEM. Any resulting reduction in the TDH of each pump should be evaluated:
   a. Increase the "B-gap" between the impeller vane trailing edge and the volute tongue by at least 10% (straight cut).
   b. V-cut of the trailing edge of the impeller.
   c. Machine the cut-water or volute tongue to minimize the interaction or pressure pulsation at the VPF.

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Maximum Overall Vibration – Structure

Mechanical Solutions, Inc.

	Position	Max. Overall (in/sec RMS) with Respect to the Suction Pipe		
		Parallel	Perpendicular	Vertical
Pump 2	Top Motor	0.80	1.38	0.65
	Base of Motor	0.95	0.73	0.33
Pump 3	Top Motor	0.62	1.26	0.40
	Base of Motor	0.30	0.55	0.25

The overall vibration at the base of the motor exceeded the ANSI/HI 9.6.4 Vibration Acceptance Criteria of 0.34 in/s RMS, and the overall vibration at the top of the motor was recorded to be excessive (over 1.0 in/s RMS), which is excessive.

22

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Summary Table Main Structural Natural Frequencies Pump 2 at Rest Conditions

Mechanical Solutions, Inc.

	Min Speed (RPM)	Max Speed (RPM)
Pump 2	1515	1785
Pump 3	1515	1785
Speed (Hz)	25.25	29.75
VFD Hz	50.92	60.00
VPF (2x rpm in Hz)	50.50	59.50

Pump	Natural Frequency (Hz)	Direction (Hz)	Mode Shape	Separation Margin with respect to:	
				1x rpm	2x rpm (VPF)
Pump 2	10.75	Perpendicular	1st Bending to Disch	-57%	-79%
	17.25	Parallel	1st Bending	-32%	-66%
	22.00	Perpendicular	1st Bending ro Suct.	-13%	-57%
	26.50	Perpendicular	1st Bending to Disch.	**0%**	-48%
	33.00	Perpendicular	2nd Bending to Disch.	11%	-35%
	42.50	Torsional	2nd Bending / Twist	43%	-17%
	43.50	Parallel	Volute Orbiting	46%	-15%
	61.25	Perpendicular	2nd Bending to Suct.	106%	**2%**
	62.25	Parallel	Bending along Discharge	109%	4%
	78.50	Perpendicular	2nd Bending	164%	31%
	78.75	Parallel	Motor Top Orbitting	165%	31%
	86.50	Parallel	2nd Bending along Suct.	191%	44%
P2 Impeller	88.00	Parallel	1st Rotor Bending	196%	47%
	100.00	Perpendicular	1st Rotor Bending	236%	67%
	206.00	Torsional	1st Torsional Shafting	592%	243%

Red figures represent structural natural frequencies with less than the recommended 10% separation margin with respect to the main excitation sources (1x rpm or 2x rpm / VPF) or within the excitation source range. See EMA frequency response function (FRF) plots on Slide 52-59.

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Summary Table Main Structural Natural Frequencies Pump 3 at Rest Conditions

Mechanical Solutions, Inc.

	Min Speed (RPM)	Max Speed (RPM)
Pump 2	1515	1785
Pump 3	1515	1785
Speed (Hz)	25.25	29.75
VFD Hz	50.92	60.00
VPF (2x rpm in Hz)	50.50	59.50

Pump	Natural Frequency (Hz)	Direction (Hz)	Mode Shape	Separation Margin with respect to:	
				1x rpm	2x rpm (VPF)
Pump 3	12.25	Perpendicular	1st Bending to Disch.	-51%	-76%
	23.75	Parallel	1st Bending to Discharge	-6%	-53%
	34.50	Perpendicular	2nd Bending to Disch.	16%	-32%
	36.50	Perpendicular	2nd Bending to Disch.	23%	-28%
	45.25	Parallel	Motor Top Orbitting	52%	-11%
	48.25	Parallel	Motor Top Orbitting	62%	-5%
	59.00	Parallel	Orbiting and volute side	98%	-2%
	64.50	Parallel	Trampoline and volute side	117%	8%
	66.00	Parallel	Trampoline and Orbiting	122%	10%
	66.70	Perpendicular	2nd Bending	124%	11%
	71.25	Perpendicular	2nd Bending	139%	19%
	74.00	Perpendicular	2nd Bending	149%	23%
	79.30	Perpendicular	2nd Bending	167%	32%
	84.90	Torsional	2nd Bending / Twist	185%	**42%**

Red figures represent structural natural frequencies with less than the recommended 10% separation margin with respect to the main excitation sources (1x rpm or 2x rpm / VPF) or within the excitation source range. See EMA frequency response function (FRF) plots on Slide 60-63.

24

24

Summary Table Main Structural Natural Frequencies Pumps 2 & 3 During Operation

Mechanical Solutions, Inc.

	Min Speed (RPM)	Max Speed (RPM)
Pump 2	1515	1785
Pump 3	1515	1785
Speed (Hz)	25.25	29.75
VFD Hz	50.92	60.00
VPF (2x rpm in Hz)	50.50	59.50

Pump	Natural Frequency During Operation (Hz)	Direction (Hz)	Mode Shape	Separation Margin with respect to:	
				1x rpm	2x rpm (VPF)
Pump 2	6.10	Perpendicular	1st Bending to Suction	-76%	-88%
	8.40	Parallel	1st Bending	-67%	-84%
	40.50	Perpendicular	Pedestal Twisting	36%	-20%
	59.60	Parallel	Pedestal Bending to Discharge	100%	**0%**
	81.40	Perpendicular	Pump Volute Orbiting	174%	36%
Pump 3	11.90	Perpendicular	1st Bending to Discharge	-53%	-77%
	22.80	Parallel	1st Bending to Discharge	-10%	-55%
	35.60	Perpendicular	2nd Bending to Disch.	20%	-30%
	42.40	Perpendicular	2nd Bending to Disch.	43%	-17%
	58.00	Perpendicular	2nd Bending to Disch.	95%	**0%**
	62.00	Perpendicular	2nd Bending and Trampoline	108%	**3%**
	72.50	Parallel	Trampoline and volute side	144%	21%
	84.00	Perpendicular	Pump Volute Orbiting	182%	40%

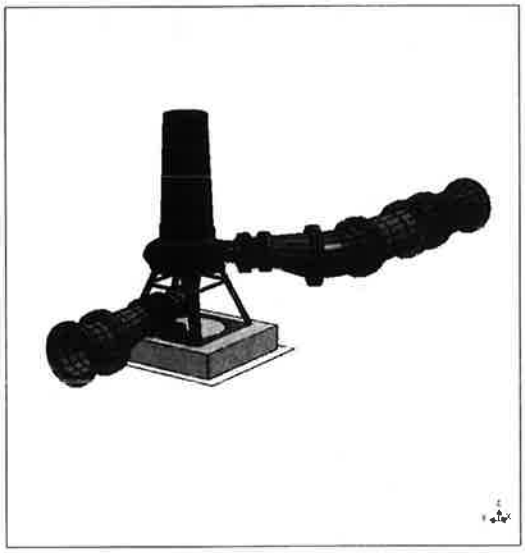
Red figures represent structural natural frequencies with less than the recommended 10% separation margin with respect to the main excitation sources (1x rpm or 2x rpm / VPF) or within the excitation source range.

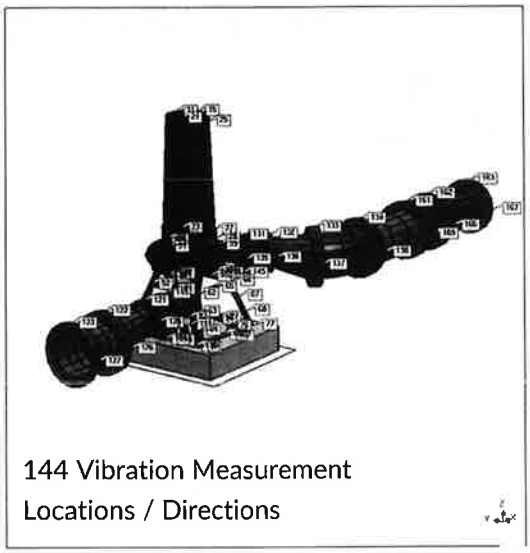
25

25

ODS Model and Measurement Point Location (Triax Accelerometers)

Mechanical Solutions, Inc.





144 Vibration Measurement Locations / Directions

37

37

Pump 2 ODS @ 6.0 Hz Natural Frequency 1st Bending Perpendicular To Suction

Mechanical Solutions, Inc.

Motor rocking in the direction perpendicular to the suction line. Note the flexibility of the pump pedestal.

Click the "Play" button to animate

38

38

Pump 2 ODS @ 8.4 Hz Natural Frequency
1st Bending Parallel To Suction

Mechanical Solutions, Inc.

Motor rocking in the direction parallel to the suction line. Note the flexibility of the pump pedestal.

Click the "Play" button to animate

39

39

Pump 2 ODS @ 29.89 Hz at 1x rpm

Mechanical Solutions, Inc.

Motor orbiting motion at 1x rpm.

Click the "Play" button to animate

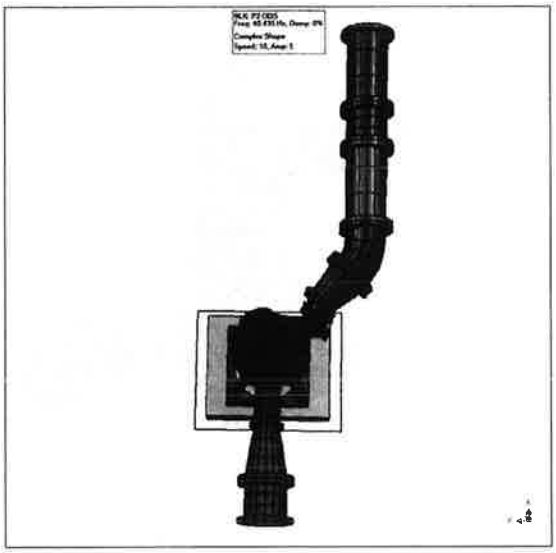
40

40

Pump 2 ODS @ 40.4 Hz Natural Frequency 1st Twist

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the perpendicular direction.



Click the "Play" button to animate

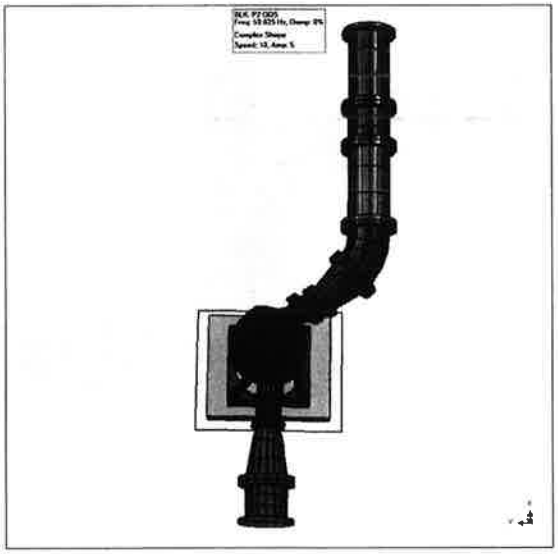
41

41

Pump 2 ODS @ 59.6 Hz (2x rpm or VPF) Twist

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the parallel direction.



Click the "Play" button to animate

42

42

Pump 2 ODS @ 59.6 Hz (2x rpm or VPF)

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the parallel direction.

Click the "Play" button to animate

43

43

Pump 2 ODS @ 81.7 Hz Natural Frequency 2nd Bending Parallel To Suction

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the parallel direction.

Click the "Play" button to animate

44

44

Mechanical Solutions, Inc.

Operating Deflection Shape (ODS)
Pump 3 Operating at 1788 rpm (29.75 Hz)
or 60 VDF Hz

45

45

Pump 3 ODS @ 11.9 Hz Natural Frequency
1st Bending Perpendicular To Discharge

Mechanical Solutions, Inc.

Motor rocking in the direction perpendicular to the discharge nozzle. Note the flexibility of the pump pedestal.

Click the "Play" button to animate

46

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Pump 3 ODS @ 22.8 Hz Natural Frequency 1st Bending Parallel To Discharge

Mechanical Solutions, Inc.

Motor rocking in the direction parallel to the discharge nozzle. Note the flexibility of the pump pedestal.

Click the "Play" button to animate

47

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Pump 3 ODS @ 29.8 Hz at 1x rpm

Mechanical Solutions, Inc.

Pump volute orbiting motion at 1x rpm.

Click the "Play" button to animate

48

48

Pump 3 ODS @ 35.6 Hz Natural Frequency Perpendicular To Discharge

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the perpendicular direction.

Click the "Play" button to animate

49

49

Pump 3 ODS @ 42.4 Hz Natural Frequency 2nd Bending Parallel To Discharge

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the parallel direction.

Click the "Play" button to animate

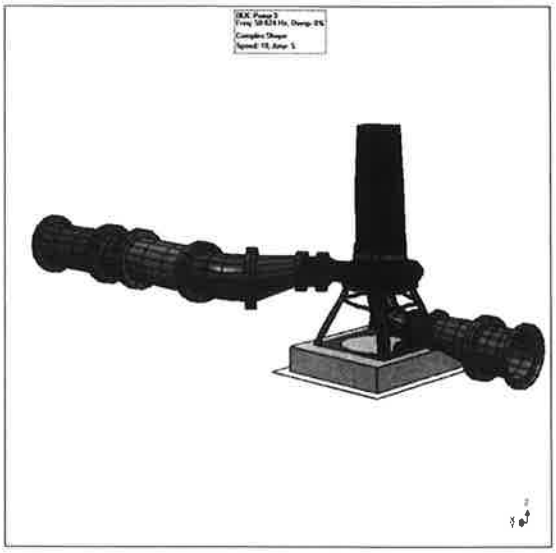
50

50

Pump 3 ODS @ 59.6 Hz at 2x rpm or VPF

Mechanical Solutions, Inc.

Pump volute lateral motion twisting and the motor top out-of-phase in the perpendicular direction to the discharge nozzle.



Click the "Play" button to animate

51

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Mechanical Solutions, Inc.

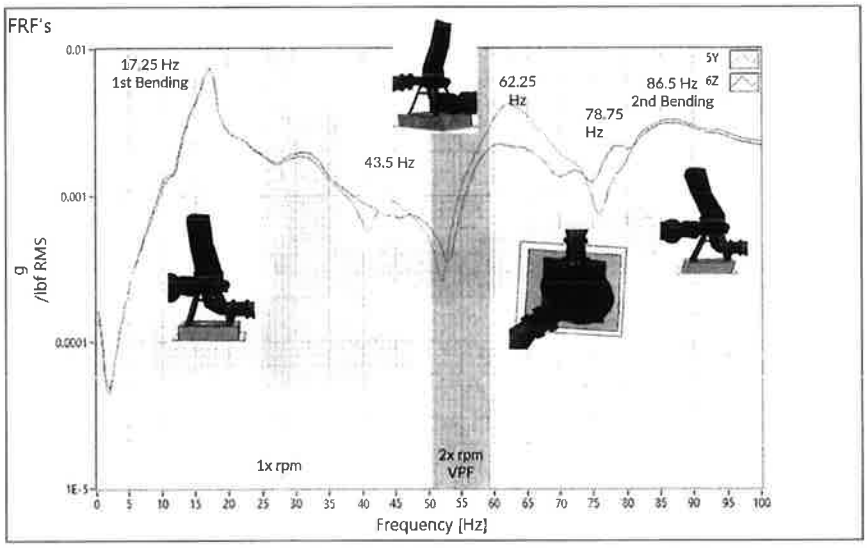
Experimental Modal Analysis (EMA) Pump 2

52

52

Pump 2 Parallel Impact - Parallel Response

Mechanical Solutions, Inc.

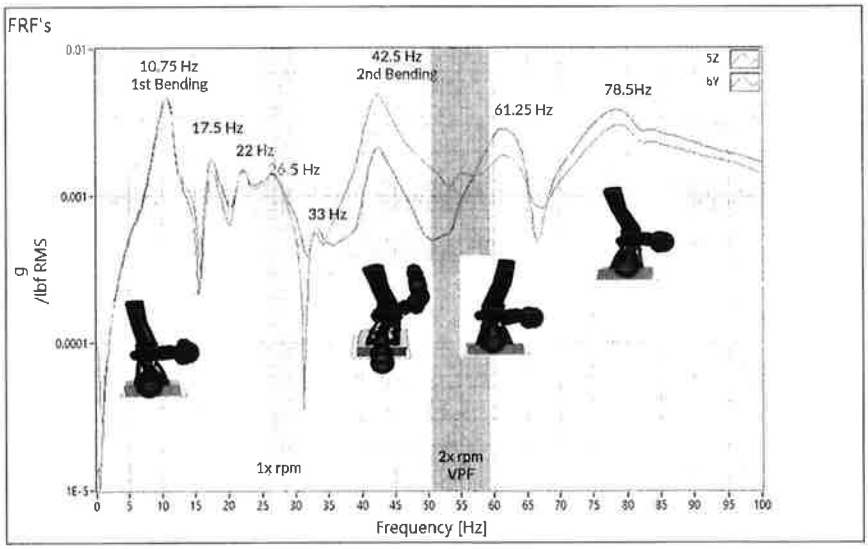


53

53

Pump 2 Perpendicular Impact - Perpendicular Response

Mechanical Solutions, Inc.



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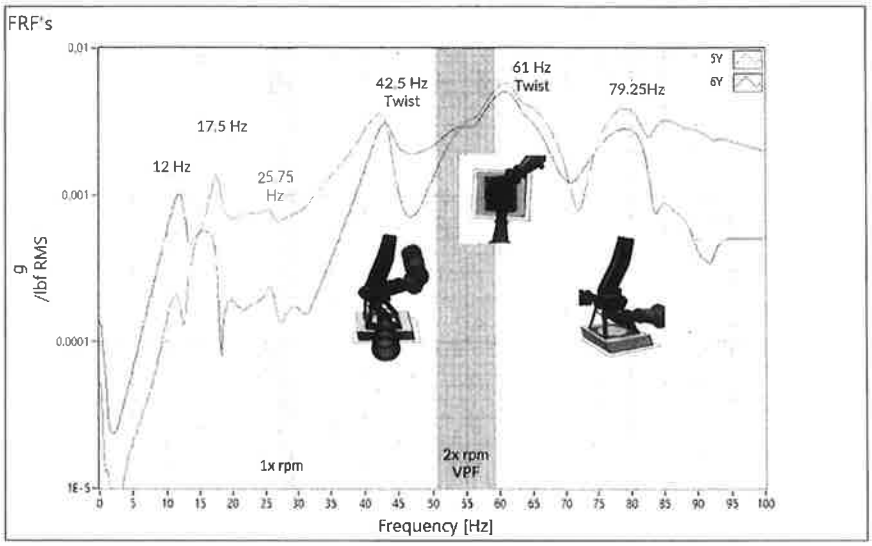
Pump 2 Torsional Impact - Torsional Response

Mechanical Solutions, Inc.



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Mechanical Solutions, Inc.

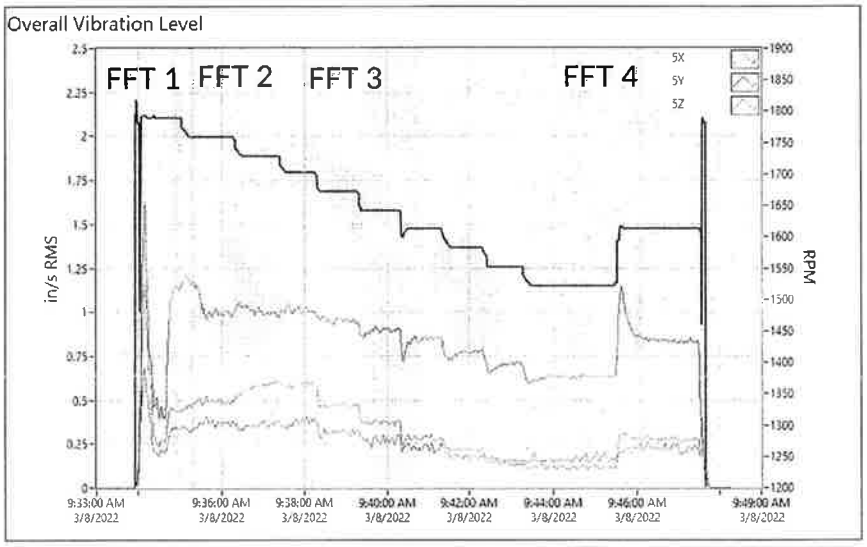
Continuous Monitoring (CM) Test
Pump 2

66

66

Pump 2 Top of Motor Speed Sweep

Mechanical Solutions, Inc.

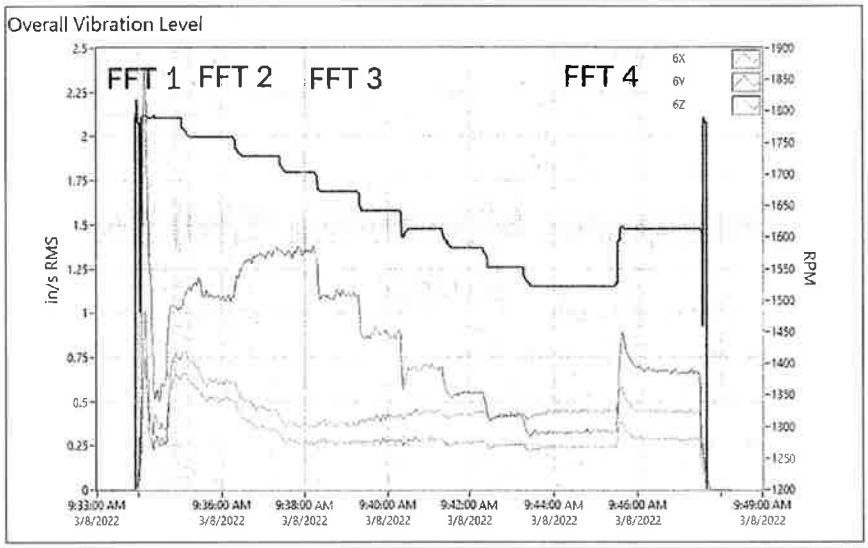


67

67

Pump 2 Top of Motor Speed Sweep

Mechanical Solutions, Inc.



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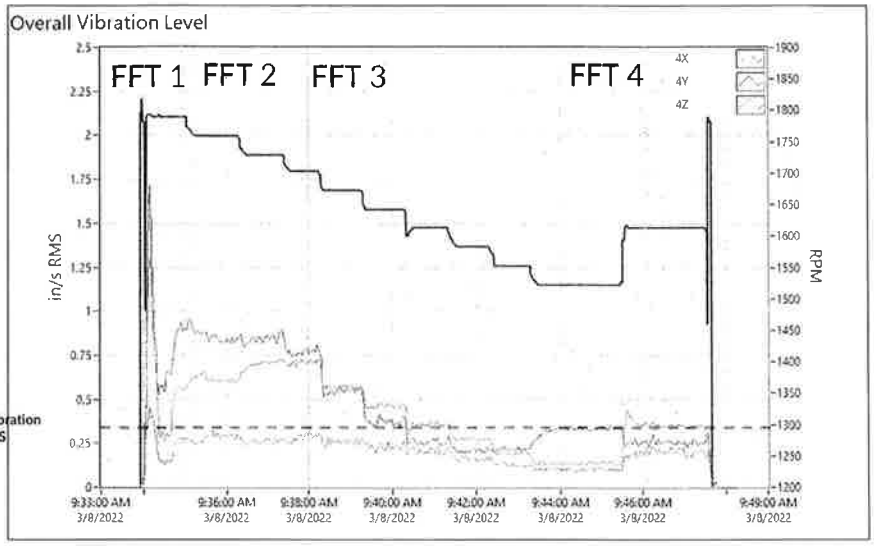
72

Pump 2 Bottom of Motor Speed Sweep

Mechanical Solutions, Inc.



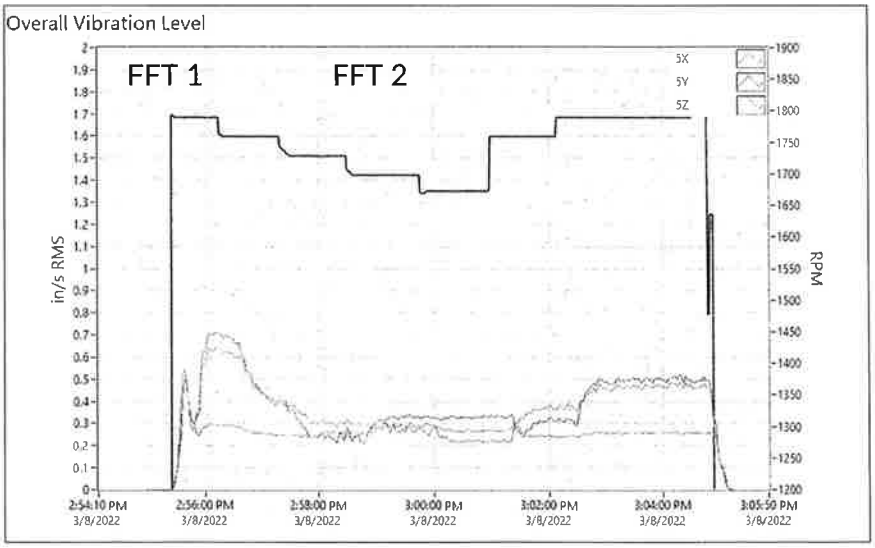
HI 9.6.4 allowable vibration limit of 0.34 in/s RMS

77

77

Pump 3 Top of Motor Speed Sweep – Loc. 5

Mechanical Solutions, Inc.

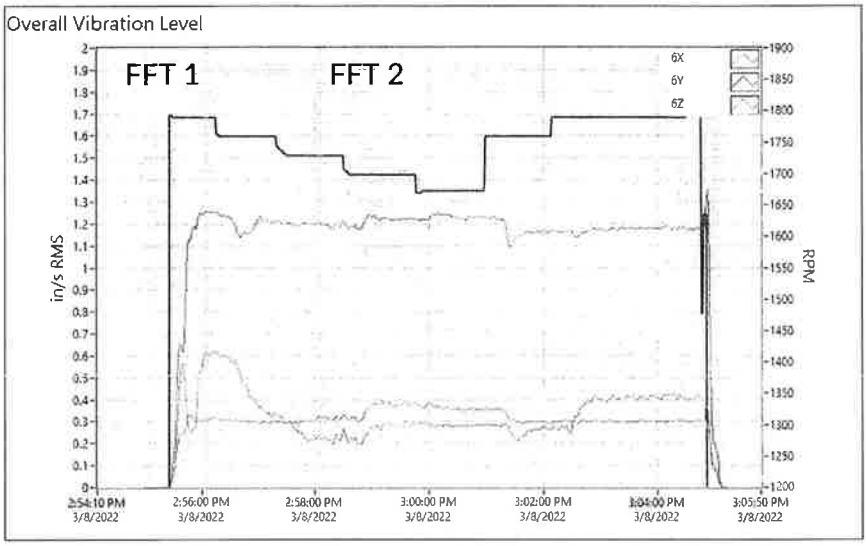


85

85

Pump 3 Top of Motor Speed Sweep – Loc. 6

Mechanical Solutions, Inc.

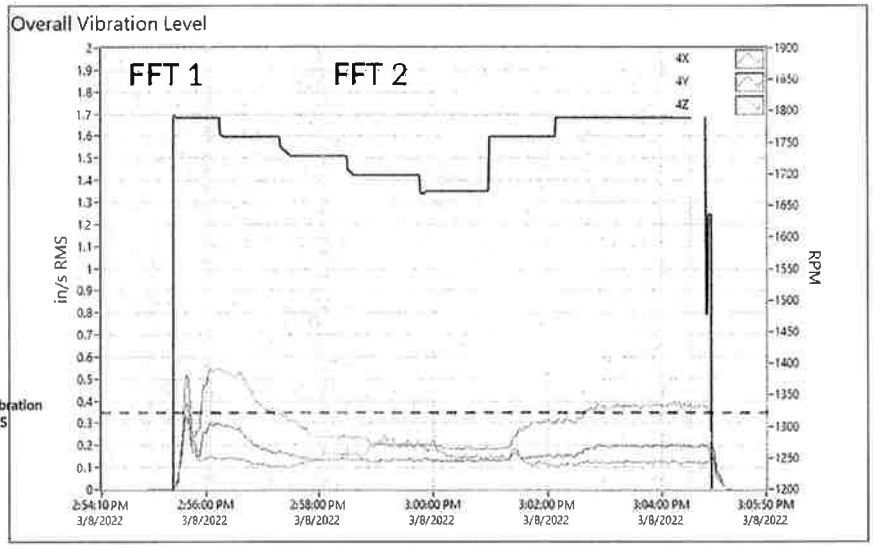


88

88

Pump 3 Bottom of Motor Speed Sweep - Loc. 4

Mechanical Solutions, Inc.



HI 9.6.4 allowable vibration limit of 0.34 in/s RMS

91

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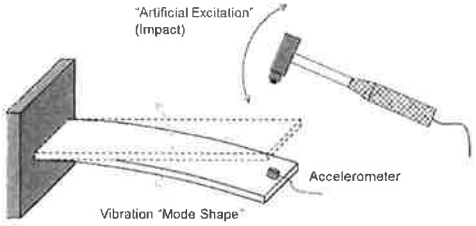
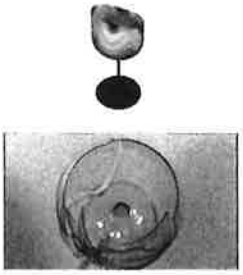
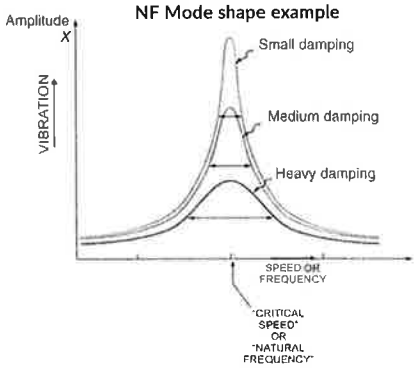
Natural Frequencies, Resonance, and Critical Speed

Mechanical Solutions, Inc.







Natural Frequency (Nf) - Frequencies where a rotor or structural system will vibrate if excited.

1. Machinery systems – Excitation provided by even acceptable levels of unbalance, misalignment, flow induced vibration, etc.
2. An infinite number of NFs but usually only worried about those up to about 1x rpm Vane Pass Frequency (VPF).
3. Predicted and avoided by properly performed Finite Element Analysis (FEA) using valid assumptions.
4. Determined by specialized vibration testing after installation.

Amplification Factor (AF) ~ steepness ratio of the mode shape.

AF = 10 or more is not unusual for a resonance

With an AF of 10 an acceptable vibration amplitude of 0.10 in/s RMS becomes *1.0 in/s if there is enough excitation and not enough damping* ***= a budget and schedule killing problem.***

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Natural Frequencies, Resonance, and Critical Speed

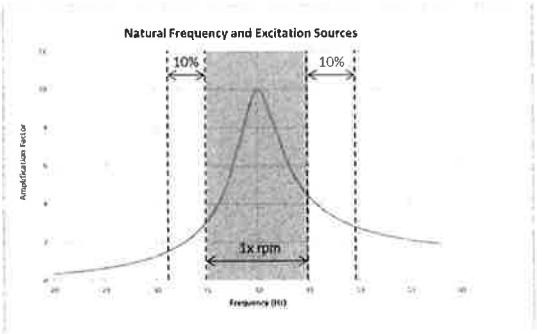
Mechanical Solutions, Inc.

Resonance:

1. A Natural Frequency (Nf) being excited.
2. Happens if there is not enough: damping and or separation margin
3. Damping – Effects (frictional energy or viscous) that dissipate energy
4. Separation Margin – Difference in frequency between an excitation source (i.e. running speed) and the Nf. Expressed as a percent.
5. Nfs can change over time – an aging plant issue.

Typically it is recommended that the separation margin be 10% or more between field-measured natural frequencies and potential sources of excitation (i.e. 1x rpm or VPF).

$$f(Hz) = \frac{\sqrt{(k/m)}}{2\pi}$$



Resonance can be avoided by:

1. Not operating near the Nf.
2. Reducing the excitation force
3. Changing the number of impeller vanes
4. Reducing hydraulic excitation issues
5. Changing the mass
6. Changing the "spring coefficient" – stiffening or de-stiffening the structure or rotor system

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CORRESPONDENCE
LOG -APRIL 2022

DATE	TO	FROM	SUBJECT
3/24/2022	EAST LYME WATER & SEWER COMMISSIOI	CITY OF NEW LONDON-W&WPCA	REGULAR MEETING MINUTES - MARCH 24, 2022
3/16/2022	EAST LYME WATER & SEWER COMMISSIOI	CITY OF NEW LONDON-W&WPCA	SPECIAL MEETING MINUTES -MARCH 16,2022

EAST LYME
WATER & SEWER COMMISSION
APR 26 2022
AGENDA # 11

East Lyme Water Department
Monthly Report - April 2022

1. General Statistics for Mar-22

TASKS PERFORMED by WATER DEPARTMENT	February 2022	TOTAL THIS YEAR	TOTAL LAST YEAR (July 1st to June 30th)
Meters Installed (New Accounts)	2	25	22
New Meters In System	354	1,396	New / Total 2378 / 6914 or 34%
New Service Connections Installed	0	6	8
Services and Mains Repaired(1)	3 Mains Breaks, 8 Service Leaks	36	7
Gallons Pumped (x1000)	65,938	535,567	616,864

(1) Repair or replacement of service line from main to curb stop.

2. Monthly Average Day Demand (MADD)

	February	February 2021	% Difference LY
Water Produced (Millon Gallons Daily)	2.104	1.559	34.94%

MADD as a % of 3.16 MGD available water (24-hour pumping) = 66.59%
MADD as a % of 2.37 MGD available water (18-hour pumping) = 88.79%
Note: Available water based on 2005 Water Supply Plan and subsequent revisions approved February 20, 2007. Figures not adjusted for additional water available from New London during the summer months.

3. Significant Items

1. Precipitation was 2.88 inches for the month of February
2. Staff is continuing meter replacement work. 354 meters have been installed in the month of March, our most productive month to date.
3. 15.6 million gallons has been pumped to New London, with a remaining 1.8 million to be pumped to fulfill the minimum quota to withdraw 14.850 million in the summer months.
4. Distribution system flushing has just started in April, with the goal of flushing the entire system this year, something that has not been achieved in many years due to lack of water.
5. Staff repaired an inordinate number of breaks and leaks this winter, but water demand remains high. Of the 10 customer leaks that were identified due to leak detection, 8 have been repaired to date.

EAST LYME WATER DEPARTMENT

Historic Monthly Water Production Report (x1,000)

	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	% +/- (Previous Year)	Monthly Precip. 20-21 (in.)
July	75953	72074	80638	81529	67948	67364	69703	64939	62206	-4.21%	6.36
Aug.	72609	69962	71557	73078	62844	61898	65912	66044	63933	-3.20%	4.53
Sept.	61524	54918	62752	56264	48592	52642	58151	56757	55281	-2.60%	8.84
Oct.	55600	50298	56829	53767	45152	48004	51836	48088	53507	11.27%	6.12
Nov.	53195	46624	56798	51876	39400	51065	45917	40639	52801	29.93%	2.51
Dec.	61753	51289	59049	53697	45664	40675	48171	40399	56781	40.55%	1.84
Jan.	64296	53405	55502	55699	48433	44334	44334	45053	63884	41.80%	2.8
Feb.	55226	50538	58426	56887	41951	44733	47832	41912	61236	46.11%	4.99
Mar.	63206	55848	56130	55300	44903	54467	50150	48343	65938	36.40%	2.88
Apr.	58447	54891	56931	49606	46231	52493	48753	49554			
May	65790	68621	65388	58395	51915	57692	55327	57411			
Jun.	71966	64086	74172	64325	57332	58021	64665	57685			
Total	759565	692554	754172	710423	600365	633388	650751	616824			40.87
% +/- (Previous Year)	9.99%	-8.82%	8.90%	-5.80%	-15.49%	5.50%	2.74%	-5.21%			
% +/- Running Annual Average										21.78%	

EAST LYME WATER DEPARTMENT

Historic Monthly Water Production Report (x1,000)

	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	AVG. Previous Years	21-22	% +/- (Previous Years)	Monthly Precip. 20-21 (in.)
July	75953	72074	80638	81529	67948	67364	69703	64939	72519	62206	-14.22%	6.36
Aug.	72609	69962	71557	73078	62844	61898	65912	66044	67988	63933	-5.96%	4.53
Sept.	61524	54918	62752	56264	48592	52642	58151	56757	56450	55281	-2.07%	8.84
Oct.	55600	50298	56829	53767	45152	48004	51836	48088	51197	53507	4.51%	6.12
Nov.	53195	46624	56798	51876	39400	51065	45917	40639	48189	52801	9.57%	2.51
Dec.	61753	51289	59049	53697	45664	40675	48171	40399	50087	56781	13.36%	1.84
Jan.	64296	53405	55502	55699	48433	44334	44334	45053	51382	63884	24.33%	2.8
Feb.	55226	50538	58426	56887	41951	44733	47832	41912	49688	61236	23.24%	4.99
Mar.	63206	55848	56130	55300	44903	54467	50150	48343	53543	65938	23.15%	2.88
Apr.	58447	54891	56931	49606	46231	52493	48753	49554	52113			
May	65790	68621	65388	58395	51915	57692	55327	57411	60067			
Jun.	71966	64086	74172	64325	57332	58021	64665	57685	64032			
Total	759565	692554	754172	710423	600365	633388	650751	616824	677255			40.87
% +/- (Previous Year)	9.99%	-8.82%	8.90%	-5.80%	-15.49%	5.50%	2.74%	-5.21%				
% +/- Running Annual Average											8.43%	

EAST LYME WATER DEPARTMENT
Well Production Report - March 2022

Withdrawals	Well 1A		Well 2A		Well 3A		Well 3B		Well 4A		Well 5		Well 6		Wells 3A/3B	Wells 2A/3A/3B	Daily Total (Wells)	Water From NL	Water To NL	Daily Total (Wells & NL)(3)	
	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	
Max. Reg./Perm.(1,2)	1.160		0.864		0.560		0.993		0.547		0.780		0.440		0.993	1.857	4.784	1.000	1.000	5.784	
24-hr Pumping	1.160		0.648		0.446		0.993		0.324		0.619		0.440		1.439	2.087	4.630	0.500	NA	5.130	
18-hr Pumping	0.870		0.486		0.335		0.745		0.243		0.464		0.330		1.080	1.566	3.473	0.500	NA	3.973	
SFR 24-hr Pumping(2)	1.160		0.648		0.446		0.993		0.324		0.000		0.000		0.993	1.641	3.125	0.500	NA	3.625	
SFR 18-hr Pumping	0.870		0.486		0.335		0.745		0.243		0.000		0.000		0.745	1.231	2.344	0.500	NA	2.844	
Monthly Average	0.617		0.267		0.209		0.607		0.141				0.287		0.816	1.083	2.127	0.000	0.100	2.127	Precip
Date	"Alert" Trigger	12.0		4.0		15.0		20.0		6.0		18.0		22.0							inches
3/1/2022	0.688	13.3	0.303	19.0	0.220	22.0	0.653	24.2	0.128	5.60			0.317	35.4	0.873	1.176	2.309	0.000	0.000	2.309	0.00
3/2/2022	0.638	18.9	0.273	19.0	0.212	41.0	0.643	34.5	0.133	9.90			0.294	40.8	0.855	1.128	2.193	0.000	0.145	2.193	0.00
3/3/2022	0.637	13.3	0.351	19.0	0.199	22.0	0.589	24.0	0.170	5.60			0.294	35.4	0.788	1.139	2.240	0.000	0.137	2.240	0.00
3/4/2022	0.617	13.3	0.287	18.0	0.217	22.0	0.646	24.2	0.131	5.50			0.284	35.5	0.863	1.149	2.182	0.000	0.132	2.182	0.00
3/5/2022	0.764	13.3	0.310	18.0	0.226	22.0	0.666	24.0	0.166	5.60			0.334	35.4	0.892	1.202	2.467	0.000	0.234	2.467	0.00
3/6/2022	0.591	13.3	0.311	20.0	0.244	22.0	0.716	24.1	0.150	5.50			0.291	35.7	0.960	1.271	2.303	0.000	0.000	2.303	0.00
3/7/2022	0.587	13.2	0.385	19.0	0.244	22.0	0.713	23.8	0.155	5.50			0.341	35.5	0.957	1.342	2.426	0.000	0.143	2.426	0.28
3/8/2022	0.812	12.6	0.310	19.0	0.208	22.0	0.614	23.8	0.152	5.50			0.375	35.4	0.822	1.132	2.471	0.000	0.143	2.471	0.00
3/9/2022	0.516	12.6	0.319	19.0	0.223	22.0	0.670	24.0	0.155	5.50			0.237	35.4	0.893	1.212	2.119	0.000	0.144	2.119	0.00
3/10/2022	0.762	12.5	0.224	19.0	0.205	22.0	0.636	23.7	0.161	5.50			0.352	35.5	0.841	1.065	2.340	0.000	0.140	2.340	0.37
3/11/2022	0.503	12.4	0.276	19.0	0.186	22.0	0.501	23.9	0.126	5.50			0.231	35.4	0.687	0.964	1.824	0.000	0.000	1.824	0.00
3/12/2022	0.620	12.3	0.251	19.0	0.182	21.0	0.557	24.3	0.149	5.50			0.286	35.4	0.739	0.990	2.044	0.000	0.000	2.044	0.00
3/13/2022	0.616	12.6	0.338	19.0	0.264	21.0	0.775	24.6	0.160	5.50			0.284	35.6	1.039	1.377	2.437	0.000	0.203	2.437	0.42
3/14/2022	0.625	12.5	0.285	19.0	0.154	21.0	0.458	23.7	0.127	5.50			0.288	35.5	0.612	0.897	1.937	0.000	0.000	1.937	0.00
3/15/2022	0.591	12.5	0.265	20.0	0.214	21.0	0.628	24.3	0.148	5.40			0.272	35.4	0.842	1.107	2.118	0.000	0.141	2.118	0.00
3/16/2022	0.685	12.5	0.252	20.0	0.201	22.0	0.590	24.1	0.119	5.40			0.316	35.6	0.791	1.043	2.162	0.000	0.000	2.162	0.00
3/17/2022	0.519	12.5	0.234	20.0	0.208	22.0	0.618	24.1	0.129	5.40			0.239	35.4	0.826	1.060	1.947	0.000	0.000	1.947	0.00
3/18/2022	0.699	12.6	0.290	20.0	0.199	21.0	0.576	24.1	0.177	5.40			0.322	35.5	0.775	1.065	2.263	0.000	0.134	2.263	0.05
3/19/2022	0.595	12.4	0.282	20.0	0.234	21.0	0.691	24.2	0.146	5.50			0.274	35.5	0.925	1.207	2.222	0.000	0.213	2.222	0.00
3/20/2022	0.743	12.4	0.319	20.0	0.226	21.0	0.674	24.0	0.162	5.50			0.343	35.6	0.900	1.218	2.466	0.000	0.204	2.466	0.04
3/21/2022	0.589	12.2	0.307	21.0	0.220	21.0	0.659	24.3	0.122	5.40			0.272	35.3	0.879	1.186	2.169	0.000	0.144	2.169	0.00
3/22/2022	0.585	12.3	0.206	20.0	0.174	21.0	0.479	23.7	0.137	5.50			0.269	35.5	0.653	0.860	1.850	0.000	0.000	1.850	0.00
3/23/2022	0.688	18.0	0.301	20.0	0.202	41.0	0.594	35.1	0.134	9.90			0.317	40.9	0.796	1.097	2.235	0.000	0.133	2.235	0.00
3/24/2022	0.482	12.2	0.261	20.0	0.217	21.0	0.620	24.1	0.138	5.40			0.223	35.3	0.837	1.098	1.942	0.000	0.132	1.942	0.70
3/25/2022	0.499	12.2	0.165	21.0	0.202	21.0	0.589	34.5	0.115	5.50			0.229	35.5	0.791	0.956	1.799	0.000	0.001	1.799	0.59
3/26/2022	0.585	12.5	0.214	20.0	0.154	21.0	0.406	24.1	0.123	5.60			0.269	35.7	0.560	0.774	1.752	0.000	0.000	1.752	0.00
3/27/2022	0.578	12.9	0.251	21.0	0.214	42.0	0.610	35.8	0.124	5.50			0.267	35.8	0.824	1.075	2.044	0.000	0.000	2.044	0.43
3/28/2022	0.506	18.8	0.273	22.0	0.183	21.0	0.536	21.2	0.134	10.00			0.233	41.2	0.719	0.992	1.865	0.000	0.152	1.865	0.00
3/29/2022	0.619	13.0	0.217	21.0	0.245	20.0	0.621	24.5	0.115	5.60			0.287	35.7	0.866	1.083	2.104	0.000	0.141	2.104	0.00
3/30/2022	0.693	13.0	0.007	21.0	0.238	20.0	0.641	24.1	0.161	5.60			0.320	35.6	0.879	0.886	2.060	0.000	0.148	2.060	0.00
3/31/2022	0.482	18.6	0.202	21.0	0.173	20.0	0.449	24.5	0.122	5.60			0.222	41.2	0.622	0.824	1.650	0.000	0.137	1.650	0.00
Average	0.617	13.4	0.267	19.8	0.209	23.3	0.607	25.4	0.141	5.93			0.287	36.2	0.816	1.083	2.127	0.000	0.100	2.127	0.10
Minimum	0.482	12.2	0.007	18.0	0.154	20.0	0.406	21.2	0.115	5.40			0.222	35.3	0.560	0.774	1.650	0.000	0.000	1.650	0.00
Maximum	0.812	18.9	0.385	22.0	0.264	42.0	0.775	35.8	0.177	10.00			0.375	41.2	1.039	1.377	2.471	0.000	0.234	2.471	0.70
Total	19.114		8.270		6.488		18.817		4.367				8.882		25.305	33.575	65.938	0.000	3.101	65.938	2.88

% Recvd. of Total Monthly Demand		0.00	Total Monthly Demand
% of Total Sent to NL (Wells)			4.70	65.938
Running Total (water received 2022)		0.000	
Goal		14.850	
% of Goal		0.00	
Running Total (water sent to NL2022)			15.607
Goal			17.471
% of Goal			89.33

Notes:

MGD = Million Gallons Per Day

WL = Water (in feet) above the airline or pressure transducer (set approximately 4 ft above the pump suction for each well; 17 ft above suction for Well 4A).

SFR = stream flow restrictions (Wells 5 and 6 not operating).

NR = No Reading Available

(1) A condition of the Well 3A diversion permit limits the combined maximum withdrawal from Wells 2A, 3A, and 3B to 1.857 mgd.

(2) Another condition of the Well 3A permit restricts the combined maximum withdrawal from Wells 3A and 3B to 0.864 mgd during "low" stream flow. If Well 3A is not pumped, Well 3B alone can be pumped at 0.993 mgd during "low" stream flow.

(3) Totals represent well production plus water from New London. Does not include water to New London.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION
TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID: CT0450011

PWS Name: East Lyme Water & Sewer Commission

City/Town: East Lyme

2. Compliance Information:

Water System Facility ID: 00703

Month: 03 Year: 2022

Certified Operator: Mark Alfieri

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.71	7.22		0.62	17		0.61	7.10		0.59
2		0.70	7.23		0.65	18		0.50	7.30		0.90
3		0.53	7.63		0.62	19		0.59	7.41		0.92
4		0.62	7.31		0.63	20		0.69	7.45		0.87
5		0.94	7.35		0.62	21		0.60	7.43		0.88
6		0.82	7.14		0.61	22		0.71	7.50		0.65
7		0.97	7.51		0.82	23		0.47	7.36		0.62
8		0.78	7.42		0.58	24		0.71	7.24		0.68
9		0.84	7.31		0.61	25		0.70	7.60		0.79
10		0.86	7.33		0.86	26		0.70	7.60		0.72
11		0.77	7.37		0.63	27		0.73	7.40		0.60
12		0.93	7.50		0.90	28		0.92	7.70	1.30	0.81
13		0.75	7.40		0.79	29		0.97	7.70	1.28	0.98
14		0.57	7.51		0.90	30		0.71	7.31		0.69
15		0.89	7.72	0.57	0.98	31		0.67	7.22		0.66
16		0.60	7.12		0.74						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type		Treatment Summary Name	Monitoring Requirements: Number of Days Required 2	Monitoring Requirements: Number of Days Completed	Compliance (Y/N) 3	Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
☑	CHLR	Monthly Chlorine Log	31	31	Y	0.97	0.73	0.47	Y
☑	PHRD	Monthly pH Log	31	31	Y	7.72	7.40	7.10	Y
☑	PHOS	Monthly Phosphate Log	2	3	Y	1.30	1.05	0.57	Y
☑	FLRD	Monthly Fluoride Log	31	31	Y	0.98	0.74	0.58	Y

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.

2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.

3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.

4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION
TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID: CT0450011

PWS Name: East Lyme Water & Sewer Commission

City/Town: East Lyme

2. Compliance Information:

Water System Facility ID: 00704

Month: 03 Year: 2022

Certified Operator: Mark Alfieri

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.94	7.25		0.56	17		0.76	7.22		0.69
2		1.00	7.13		0.43	18		0.79	7.21		0.66
3		0.97	7.41		0.70	19		0.81	7.19		0.65
4		1.00	7.20		0.63	20		0.68	7.15		0.63
5		0.86	7.27		0.61	21		0.95	7.24		0.57
6		0.76	7.14		0.53	22		0.74	7.29		0.63
7		0.90	7.09		0.73	23		0.33	7.27		0.64
8		0.78	7.21		0.73	24		0.91	7.23		0.56
9		0.74	7.26		0.70	25		0.22	7.15		0.52
10		0.91	7.28		0.53	26		0.86	7.40		0.68
11		0.82	7.29		0.66	27		0.85	7.40		0.69
12		0.83	7.50		0.66	28		0.86	7.16		0.61
13		0.67	7.60		0.67	29		0.94	7.30		0.64
14		0.87	7.54		0.60	30		0.92	7.17		0.63
15		0.77	7.10		0.53	31		0.87	7.20		0.73
16		0.71	7.11		0.48						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type		Treatment Summary Name	Monitoring Requirements: Number of Days Required 2	Monitoring Requirements: Number of Days Completed	Compliance (Y/N) 3	Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
☑	CHLR	Monthly Chlorine Log	31	31	Y	1.00	0.81	0.22	Y
☑	PHRD	Monthly pH Log	31	31	Y	7.60	7.26	7.09	Y
☐	PHOS	Monthly Phosphate Log							
☑	FLRD	Monthly Fluoride Log	31	31	Y	0.73	0.62	0.43	Y

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.

2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.

3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.

4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION
TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID: CT0450011

PWS Name: East Lyme Water & Sewer Commission

City/Town: East Lyme

2. Compliance Information:

Water System Facility ID: 00705

Month: 03 Year: 2022

Certified Operator: Mark Alfieri

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.29	7.14		0.62	17		0.87	7.35		0.97
2		0.23	7.23		0.60	18		0.51	7.19		0.86
3		0.24	7.09		0.83	19		0.42	7.21		0.96
4		0.22	7.08		0.66	20		0.37	7.37		0.86
5		0.30	7.13		0.78	21		0.46	7.34		0.84
6		0.20	7.08		0.64	22		0.41	7.27		0.74
7		0.20	7.07		0.59	23		0.33	7.31		0.75
8		0.23	7.15		0.63	24		0.45	7.25		0.76
9		0.33	7.23		0.70	25		0.37	7.17		0.72
10		0.50	7.21		0.70	26		0.31	7.30		0.79
11		0.58	7.24		0.77	27		0.35	7.20		0.73
12		0.64	7.30		0.88	28		0.22	7.17		0.68
13		0.74	7.20		0.79	29		0.23	7.30		0.77
14		0.76	7.10		0.85	30		0.29	7.10		0.71
15		0.83	7.32		0.89	31		0.28	7.37		0.73
16		0.77	7.33		0.94						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type		Treatment Summary Name	Monitoring Requirements: Number of Days Required 2	Monitoring Requirements: Number of Days Completed	Compliance (Y/N) 3	Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
☑	CHLR	Monthly Chlorine Log	31	31	Y	0.87	0.42	0.20	Y
☑	PHRD	Monthly pH Log	31	31	Y	7.37	7.22	7.07	Y
☐	PHOS	Monthly Phosphate Log							
☑	FLRD	Monthly Fluoride Log	31	31	Y	0.97	0.77	0.59	Y

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2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.

3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.

4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION
TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID: CT0450011

PWS Name: East Lyme Water & Sewer Commission

City/Town: East Lyme

2. Compliance Information:

Water System Facility ID: 00706

Month: 03 Year: 2022

Certified Operator: Mark Alfieri

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1	offline					17	offline				
2	offline					18	offline				
3	offline					19	offline				
4	offline					20	offline				
5	offline					21	offline				
6	offline					22	offline				
7	offline					23	offline				
8	offline					24	offline				
9	offline					25	offline				
10	offline					26	offline				
11	offline					27	offline				
12	offline					28	offline				
13	offline					29	offline				
14	offline					30	offline				
15	offline					31	offline				
16	offline										

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type	Treatment Summary Name	Monitoring Requirements			Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
		Number of Days		Compliance (Y/N) 3				
		Required 2	Completed					
☑ CHLR	Monthly Chlorine Log	0	0	Y				Y
☑ PHRD	Monthly pH Log	0	0	Y				Y
☐ PHOS	Monthly Phosphate Log							
☑ FLRD	Monthly Fluoride Log	0	0	Y				Y

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.

2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.

3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.

4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION
TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID: CT0450011

PWS Name: East Lyme Water & Sewer Commission

City/Town: East Lyme

2. Compliance Information:

Water System Facility ID: 00707

Month: 03 Year: 2022

Certified Operator: Mark Alfieri

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.86	7.41		0.55	17		0.30	7.29		0.57
2		0.82	7.43		0.97	18		0.59	7.10		0.70
3		0.66	7.65		0.70	19		0.64	7.31		0.98
4		0.93	7.68		0.73	20		0.66	7.29		0.85
5		0.84	7.18		0.65	21		0.89	7.30		0.63
6		0.61	7.11		0.55	22		0.74	7.12		0.64
7		0.84	7.32		0.61	23		0.88	7.20		0.61
8		0.86	7.41		0.55	24		0.64	7.16		0.67
9		0.82	7.43		0.97	25		0.99	7.20		0.85
10		0.66	7.65		0.70	26		1.04	7.05		0.80
11		0.93	7.68		0.73	27		1.08	7.30		0.76
12		0.84	7.18		0.65	28		0.89	7.20		0.66
13		0.61	7.11		0.55	29		1.06	7.30		0.62
14		0.85	7.30		0.85	30		0.84	7.40		0.51
15		0.72	7.32		0.71	31		0.63	7.14		0.65
16		0.68	7.35		0.63						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type		Treatment Summary Name	Monitoring Requirements: Number of Days Required 2	Monitoring Requirements: Number of Days Completed	Compliance (Y/N) 3	Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
☑	CHLR	Monthly Chlorine Log	31	31	Y	1.08	0.79	0.30	Y
☑	PHRD	Monthly pH Log	31	31	Y	7.68	7.31	7.05	Y
☐	PHOS	Monthly Phosphate Log							
☑	FLRD	Monthly Fluoride Log	31	31	Y	0.98	0.70	0.51	Y

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.

2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.

3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.

4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

April 2022

East Lyme Sewer Maintenance Report for March 2022

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1. Sewer tie-ins, inspections and CBYDs at various locations
2. Daily chemical machine checks and maintenance
3. Monthly alarm tests and meter readings
4. Daily station maintenance checks
5. General Sewer Pump Station Maintenance
6. Old Black Point RD, East Shore Dr Pump Station, Replace Pump Station Controls
7. General equipment maintenance
8. Monitor Odor Control System 31 Arbor Xing for H2s
9. Monitor Oder Control System. 170 Giants Neck Rd for H2S
10. Monitor H2S (Point O Woods)
11. Replace Rotating Assembly and Air Release line, Bride Brook Pump Station

Sewer Department Monthly Report

April 26 2022

Mar-22	Monthly Running Avg:	960,055 GPD
	Daily Avg:	948,873 GPD
	Daily Max:	1,273,024 GPD
	Daily Min:	734,624 GPD

Daily Average as a Percent of Monthly Running Average:	98.84%
Daily Average as a Percent of 1.5 MGD Allotment at NLWWTP:	63.26%

State CT Flows:

	DOC	Camp Nett	Rocky Neck	POW	Total
Actual GPD AVG.	126,920	2,096	0	10,524	139,540
Design GPD AVG.	250,000	58,400	64,600	105,000	478,000
% of Design GPD	50.8%	3.59%	0	10.02%	29.19%
% of East Lyme Average Daily Flow	13.38%	0.22%	0.00%	1.11%	14.71%
% of East Lyme 1.5 MGD Allotment	8.46%	0.14%	0.00%	0.70%	9.30%

Footnotes:

EAST LYME SEWER FLOWS - HISTORY

	2014	2015	2016	2017	2018	2019	2020	2021	2022	% +/- Prev. Yr.	Precip. 2022 (in.)
JAN.	1,011,343	787,646	747,284	784,837	781,519	1,090,311	849,497	938,302	942,646	0.46%	2.80
FEB.	994,771	832,681	809,701	765,648	865,263	842,611	859,175	911,422	988,646	8.47%	4.99
MAR.	1,026,812	1,017,280	790,851	777,452	927,771	893,805	832,803	886,441	948,873	7.04%	2.88
APR.	1,126,058	938,861	796,611	897,161	778,780	918,456	885,983	962,591			
MAY	1,145,107	913,816	777,446	872,268	746,049	947,042	900,485	951,501			
JUN.	1,007,792	880,190	815,281	849,504	906,535	875,000	882,463	976,981			
JUL.	1,038,583	1,048,427	879,952	883,851	1,026,307	977,552	853,930	1,047,771			
AUG.	999,147	977,543	868,636	873,017	905,718	932,181	911,419	978,158			
SEPT.	837,706	878,563	762,544	769,493	875,918	833,237	823,590	1,051,008			
OCT.	852,281	861,521	738,247	752,273	903,915	806,576	812,506	917,384			
NOV.	787,769	803,842	709,481	732,848	871,111	815,129	786,482	937,414			
DEC.	835,260	788,121	728,649	728,437	894,050	927,335	896,694	895,121			
RUNNING AVERAGE	971,886	894,041	785,390	807,232	873,578	904,936	857,919	954,508	960,055	5.33%	3.56
										Precip. Total	10.67

EAST LYME SEWER FLOWS - HISTORY

	2014	2015	2016	2017	2018	2019	2020	2021	AVG. Prev. Years	2022	% +/- AVG. Prev. Years	Precip. 2022 (in.)
JAN.	1,011,343	787,646	747,284	784,837	781,519	1,090,311	849,497	938,302	873,842	942,646	7.9%	2.80
FEB.	994,771	832,681	809,701	765,648	865,263	842,611	859,175	911,422	860,159	988,646	14.9%	4.99
MAR.	1,026,812	1,017,280	790,851	777,452	927,771	893,805	832,803	886,441	894,152	948,873	6.1%	2.88
APR.	1,126,058	938,861	796,611	897,161	778,780	918,456	885,983	962,591	913,063			
MAY	1,145,107	913,816	777,446	872,268	746,049	947,042	900,485	951,501	906,714			
JUN.	1,007,792	880,190	815,281	849,504	906,535	875,000	882,463	976,981	899,218			
JUL.	1,038,583	1,048,427	879,952	883,851	1,026,307	977,552	853,930	1,047,771	969,547			
AUG.	999,147	977,543	868,636	873,017	905,718	932,181	911,419	978,158	930,727			
SEPT.	837,706	878,563	762,544	769,493	875,918	833,237	823,590	1,051,008	854,007			
OCT.	852,281	861,521	738,247	752,273	903,915	806,576	812,506	917,384	830,588			
NOV.	787,769	803,842	709,481	732,848	871,111	815,129	786,482	937,414	805,510			
DEC.	835,260	788,121	728,649	728,437	894,050	927,335	896,694	895,121	836,708			
AVG.	971,886	894,041	785,390	807,232	873,578	904,936	857,919	954,508	881,186	960,055	9.6%	3.56
											Precip. Total	10.67

East Lyme Sewer Department

Monthly Average Day Wastewater Flows (MGD)

Mar-22

		East Lyme Allocation (1.5 mgd)			State Allocation (0.478 mgd)								
Year	Month	Niantic PS			DOC	Camp Nett	Rocky Neck	POW	Pine Grove	State Allocation Total Used	State Allocation Remaining	East Lyme Allocation Used	East Lyme Allocation Remaining
		Daily Avg	Daily Max	Daily Min	0.250	0.058	0.025	0.105	0.040				
2022	January	0.943	1.133	0.683	0.104	0.005	0.000	0.010	0.040	0.159	0.319	1.261	0.239
	February	0.989	1.112	0.829	0.145	0.017	0.000	0.011	0.040	0.213	0.265	1.254	0.246
	March	0.949	1.273	0.735	0.127	0.002	0.000	0.011	0.040	0.180	0.298	1.247	0.253
	April												
	May												
	June												
	July												
	August												
	September												
	October												
	November												
	December												
	Annual Avg. (Jan - Dec)	0.960	1.173	0.749	0.125	0.008	0.000	0.011	0.040	0.184	0.294	1.254	0.246
	Annual Average (11 years, 3 Months)											1.152	0.348