

NVC Utilities Committee
Trustee Meeting
Community Hall and by Zoom link
Friday, November 11, 2022
2:30 p.m.

Present: David Crofoot (by Zoom), Judy Metcalf, Jeffrey Wilt, Casey Brown (by Zoom), Richard McElhaney, Bill Paige

Absent: Brady Brim-Deforest

The October meeting of the NVC Utilities Trustees convened at 2:35. Utilities chair, Jeffrey Wilt called the meeting to order.

Approval of minutes: Judy Metcalf moved (seconded by David Crofoot) the approval September 9, 2022 and October 7, 2002 meeting minutes. The motion was adopted with yes votes from David Crofoot, Judy Metcalf, Jeffrey Wilt, Casey Brown.

Superintendent's Report: Richard McElhaney presented his report for September and October (see attachment). The report highlighted continued pattern of exceedances in our wastewater testing during the month of September. There were no exceedances in October.

Flow Metering Equipment Failure: The failure of the Programmable Logic Controller (PLC) has necessitated estimating flows using the NVC's historical data and/or 7-day averages.

Motion: Judy Metcalf moved approval of up to \$2500 to purchase and install a PLC with funds borrowed from waste water reserves to be repaid in 2023 . The motion was seconded by David Crofoot. The motion was adopted with yes votes from David Crofoot, Judy Metcalf, Jeffrey Wilt, Casey Brown.

ISCO-Glacier Refrigerated Composite Sampler Failure: The refrigeration section of the ISCO Composite Sampler has failed. As this unit and the repair parts are no longer manufactured, a new unit will be required.

Motion: Judy Metcalf moved approval of up to \$7000 to purchase a Composite Sampler with funds borrowed from Wastewater reserves to be repaid in 2023. The motion was seconded by David Crofoot. The motion was adopted with yes votes from David Crofoot, Judy Metcalf, Jeffrey Wilt, Casey Brown.

DEP Letter of Warning (LOW): The Sewer Department received a LOW because of a number of significant bacteria and Total Residual Chlorine (TRC) exceedances in September. DEP is requiring the NVC Utilities Department communicate a plan to obtain additional qualified professional help to understand recent disinfection issues as well as address potential future disinfection issues.

The group discussed engaging Dirigo Engineering to determine (1) the reason for recent exceedances and (2) plan for managing future exceedances.

Motion: Judy Metcalf moved approval of up to \$5000 to retain Dirigo Engineering. The motion was seconded by David Crofoot. The motion was adopted with yes votes from David Crofoot, Judy Metcalf, Jeffrey Wilt, Casey Brown.

Mandatory Rural Development Reserve: NVC Wastewater is required to deposit \$7,200 annually into reserves.

Motion: Judy Metcalf moved directing the Superintendent to work with the Treasurer to transfer \$7200 into wastewater reserves before December 31, 2022. Motion was seconded by Casey Brown. The motion was adopted with yes votes from David Crofoot, Judy Metcalf, Jeffrey Wilt, Casey Brown.

Wastewater Budget Update: As the budget approved in October did not include funding for a Programmable Logic Controller (PLC), ISCO-Glacier Refrigerated Composite Sampler, the engagement of Dirigo Engineering, or the potential necessity of an automated chlorine control unit ; the Trustees will convene in a special meeting December 9, 2022, 2:30 to discuss and approve an updated budget.

Utility Billing Recap: Outstanding Utility balances as of October 31, 2022 totaled \$4,668.61. This includes \$3,399,69 past due balances on 7 NVC accounts.

Motion: Judy Metcalf moved the Utility Trustees formally request NVC past due accounts be paid by December 31, 2022. The motion was seconded by Casey Brown. The motion was adopted with yes votes from David Crofoot, Judy Metcalf, Jeffrey Wilt, Casey Brown.

Other Business:

- Jeffrey Wilt ask that the Trustees consider the condition of the system used to read water meters. Is it obsolete? Should it be replaced?

The next meeting of the Trustees is a **special meeting scheduled for December 9, 2:30 p.m.**, Community Hall and on-line (<https://us02web.zoom.us/j/82961508196?pwd=ekpzTlIzcml3cnJEZmlHRmlwR3ZSZz09>).

The meeting adjourned at 4:00 p.m.

Respectfully submitted,
Jeffrey Wilt, Chairman

ATTACHMENT

November 11, 2022

**Utility Department Monthly Operating Report
Sewer Department**

September 2022 Effluent Monitoring Data

During the month of September operating period the NVC reported two (2) excursions for fecal coliform for exceeding the daily max. For enterococcus there was one (1) excursion for exceeding the daily average and four (4) excursions for exceeding daily max. For Total Residual Chlorine (TRC) there were six (6). See performance table below for further details of the regulatory monitoring data.

For October there were no exceedances to report. However, due to flow metering equipment failure, flows are being estimated.

WWTP Monthly Performance Table

Parameters	Sept	August	July	YTD Lo	YTD Hi	YTD Ave	2021 Ave	DEP Limit	YTD Exceed- acnes
Flow GPD	11,739	15174	15205	8763	30851	14943	20228	<63,000	0
Precip inches	5.39	2.87	2.57	1.43	7.95	4.12	4.96	n/a	0
TSS lbs/day	4.5	5.5	5.7	1.5	5.7	3	2.6	<76	0
TSS lbs max	7.3	5.8	8.6	2.6	8.6	4.5	5.1	report	0
TSS mg/l ave	44	43	38	7.4	44.0	25.9	26.1	<145	0
TSS mg/l max	69	56	39	8.9	69	35.1	37.5	report	0
TSS % removal	84.8	85.2	86.9	84.8	97.5	90.5	89.7	>50	0
BOD lbs/day	17.0	21.7	25.5	5.4	25.5	13.7	15.2	<107	0
BOD lbs max	28.9	28.4	43.9	8.2	43.9	22.9	26.9	report	0
BOD mg/l ave	159	172	170	62.3	172	117.8	140.1	<203	0
BOD mg/l max	200	220	200	56	220	152.5	161.6	report	0
BOD % removal	45.3	40.7	41.4	40.07	87.5	59.3	51.6	>30	0
pH low	6.7	6.5	6.5	6.4	6.7	6.5	6.5	>6.0	0
pH high	7.0	6.8	6.7	6.7	7.0	6.8	6.7	<9.0	0
St solids ml/l	0.3	0.2	0.2	0.1	0.3	0.1	0.15	report	0
TRC mg/l max	>2.2	.03	.03	0.02	>2.2	>0.27	.03	<0.3	6
Fecal cfu ave	11.4	36.4	21.38	<4	36.4	<6.01	9.58	<14	2
Fecal cfu max	1748	9680	3264	<4	9680	<24.48	19.37	<31	5
Entero cfu ave	112.79	40.13	5.26	<4	112.8	<11.65	10.8	<8	2
Entero cfu max	9680	9680	12	<4	9680	<97.58	26.9	<54	7
Hg ng/l ave	18.14	na	na	na	na	18.14	18.28	33.4	0
Hg ng/l max	14.2	na	na	na	na	14.2	7.0	50.1	0

Note: The last exceedance for flow was 195 months ago (2/2006). The last exceedance for BOD monthly average was 12 months ago (8/2021). The last exceedance for fecal coliform was 0 months ago (9/2022). The last exceedance for enterococci was 0 months ago (9/2022). For TRC the last exceedance

9/2022. For TRC the last exceedance was 9/2022. The record annual average low for flow was 12,017 gpd in 201.

Updated BOD Concentration Trend Charts

BOD weekly and monthly concentration trend charts are attached under separate cover.

Annual Effluent Low Level Mercury Test Results

The annual test result of an effluent grab sample taken on September 30, 2022 for low level mercury Hg was 14.2 parts per trillion (ppt). This compares to the daily maximum amount allowed of 50.1 ppt and a daily average for all the tests performed since the year 2004 of 18.14 ppt against a limit of 33.4 ppt.

Flow Metering Equipment Failure

Due to the failure of the Programmable Logic Controller (PLC) it has become necessary to estimate flows using the NVC's historical data and/or 7-day averages. Since the signal from the ultrasonic level transmitter runs through the PLC to the Flow Chart Recorder real time recording of the daily flow has been affected also.

Dirigo Engineering has indicated that the PLC is not a stock item and has been back ordered with an estimated delivery of mid-December at best. The expected cost for the part (PLC) and labor is \$2000. Since it seems critical parts central to the operation of the WWTP Chlorine Control Panel are not stock items, it probably makes sense for the NVC to consider stocking these critical parts going forward.

ISCO-Glacier Refrigerated Composite Sampler

The refrigeration section of the ISCO Composite Sampler of the final effluent has once again failed for the fourth time in its long history. Unfortunately, this unit and the repair parts are no longer manufactured. Efforts to use ice packs during the 24 hour compositing have been less than satisfactory. Note: **The CHILLING to 2°C – 6°C of each discreet sample collected is a standard compliance condition of the discharge permits for the test results to be considered valid.**

The cost of a new sampler (the ISCO-Blizzard) is about \$6,600. Delivery time is unknown at this juncture. Copy of the budget quote for this unit was sent to committee members for approval earlier in the month. It has been suggested that payment for the new sampler should come out of cash reserves rather than from the operating budget where this is a one-time purchase.

DEP Letter of Warning (LOW)

The Sewer Department received a LOW as a result of a number of significant bacteria and Total Residual Chlorine (TRC) exceedances in September. The Sewer Department has proffered to DEP several potential root causes of the disinfection and de-chlorination problem during September, however the Sewer Department cannot say with any assurity which root cause or causes created the chlorination/de-chlorination problems.

The Sewer Department's best guess in retrospect is that it was first theorized that the plant received a weak batch of hypochlorite solution delivered on August 30, and then secondly a late month discovery of a most likely accidental movement of the sampling suction line on September 7 into a "dead zone" of the 8,000 gallon chlorine contact chamber when all the tanks were being de-sludged. The combination of these two events the Department believes caused its one per day measurements of free available

chlorine residuals (FAC) to vacillate between being inadequate, adequate and more than adequate for the majority of the month. Moreover, the consequence of this overfeeding and underfeeding of chemical was creating confusion with process control operations until these issues were corrected.

Once the next batch of hypochlorite was delivered, the suction line was repositioned later in month and with the additional few weeks into the learning curve of the spare operator under his belt, the WWTP came back into compliance with both the bacteria testing and Total Chlorine Residual (TRC) test results. Accordingly, through the first two weeks of October and with the regular operator returning to work in mid-October from his medical leave of absence, there has been no license exceedances in October for the two test organisms and TRC.

On a good note as a result of this, DEP has approved the Sewer Department's request to go back to the minimum once per week sampling instead of two. This, of course, is conditioned on the Sewer Department going forward of having no more than one or two bacteria exceedances of any "magnitude" in any given month. If this were to occur again of course the Sewer Department would have to go back to twice per week testing once again for bacteria. (See email from DEP under separate cover).

That being said, DEP nevertheless is requesting that the Village have a plan in place to obtain additional qualified professional help to address potential disinfection issues going forward. It would be the Superintendent's recommendation to pursue Dirigo Engineering's services to provide that professional assistance and to more specifically to consider the installation of "Feedback Dosing Control" equipment to control chlorine residuals to a set point to gain automatic and continuous control of the chlorine contact chamber's effluent FAC's. Doing so would not only address the underfeeding and/or overfeeding of hypochlorite, but it would also most likely provide cost savings in chemicals over time to help offset the cost of the continuous FAC residual analyzer and control equipment. One such unit is the Hach Chlorine analyzer and Controller that is attached under separate cover as an example.

Drinking Water Department

September 2022 Production and Water Quality.

Purchased water for the month averaged 29,794 gpd compared to 29,400 gpd for the same month in 2021. The weekly free chlorine residual in the drinking water ranged from 0.14 - 0.20 ppm/Cl² compared to the recommended goal of >.20 to <1.0 ppm/Cl². The EPA maximum concentration level (MCL) not to be exceeded for chlorine residual is 4.0 ppm. The monthly total coliform and e-coli water sample test results were both negative.

Sewer and Water Monthly Checking and Reserve Accounts

Attached under separate cover are the monthly checking and reserve account statements and trend chart balances for water and sewer. The Sewer checking account balance as of November 6 is \$15,223. For water it is \$76,755.

Revised 2023 Water and Sewer Budgets

Per the NVC President, new line item accounts have been added for an Assistant Sewer Collection System Operator and an Assistant Water Distribution Operator - \$5200 for each business unit. Casual Labor, accordingly in the Water business unit was reduced by this amount. There was no accounting for

an assistant in the 2022 Sewer Budget as the CSO would not require assistance beyond what has already been budgeted for in the Casual Labor line item for sewer.

The repair and maintenance line item in sewer was reduced to reflect that the need for a new refrigerated ISCO Sampler and a Honeywell chart recorder if also needed would be paid out of the sewer cash reserves rather as a part of the operating budget and whereas it is a capital expense.

Also the cost to install hydrants was removed from the water operating budget as it was agreed at the last meeting that they could/should be paid out of the water's cash reserves as well.

The new trimester rate for sewer therefore has been increased from \$263 to \$300 (\$789/yr to \$900/yr) effective with March 2023 billing. The water trimester and yearly rate goes unchanged in 2023. Both proposed budgets have been attached to this email under separate cover.