

# A Survey of Operators' Concerns and Challenges in the

## Water/Wastewater Treatment Industry

### PART TWO – Morale, Pay, and Future Considerations

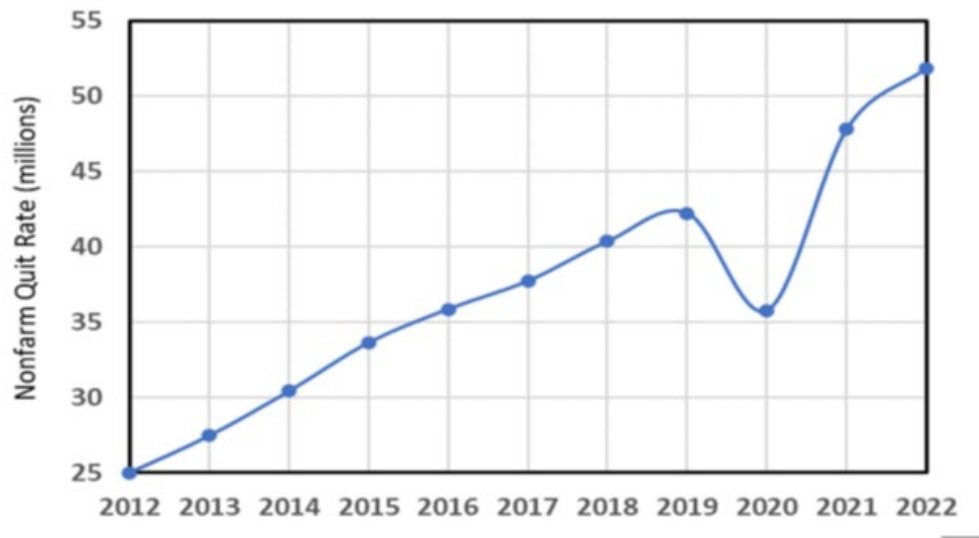
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Since the outset of the COVID epidemic, we have been hearing of the Great Resignation, even though the term, Great Resignation has been characterized with other names, such as Great Reset, Big Quit, Great Reshuffle, and Great Discontent. In any case, the results have been massive resignations in the workplace, caused by wage stagnation, increasing cost of living – food, gas, insurance, taxes, dissatisfaction with jobs and management, and COVID related issues. In some sectors, working from home or remotely has been the choice of employment, either as contract workers, self-employment, or remaining within the corporate community. In the water and wastewater treatment field, there are minimal opportunities to work remotely, as the treatment facilities require personal attention as they receive and discharge safe drinking water to their local community.



The Great Disconnect or Resignation has required management to evaluate the massive number of job openings and unfilled positions. The US Bureau of Labor Statistics illustrates, in their *Annualized Average Nonfarm Quit Rates* chart, that within the past ten years (2012-2022), these rates have nearly doubled, from 1.5% to 2.75%, OR by the numbers, from 25 million workers in 2012 to an estimated 52.5 million workers who have quit their jobs in 2022. Some of the causes for the increase are due to government COVID stimulus payments, offers of significant pay increase to switch jobs, burnout and safety concerns and better working conditions. Some workers are seeking a change in life, such as Gen Y (1980 – 1996) and Gen Z (1997 – 2010), who are often leaving for non-financial reasons, to include ethical, cultural, relational and personal factors. In addition, some are moving closer to family and friends or leave to care for aging parents, some are discontented with previous employers' available advancement and opportunities, while others are utilizing new skills learned during the COVID epidemic.

### Annualized Nonfarm Quit # (U.S.)



Source: U.S. Bureau of Labor Statistics

In a study produced by MIT Sloan Management, *"Toxic Culture is Driving the Great Resignation"*, the study indicates Toxic Corporate Culture, along with job insecurity and failure to recognize employee performance; as the leading predictor of employee turnover. Some consequences that management now faces are: training a less knowledgeable and experienced worker within a rapid time frame, meeting the competitive wage increases from other employers, workers relocating to less stressful and/or taxed states and management dealing with the negative impact of corporate or institutional policies.

How does the Water and Wastewater Industry compare in this culture? What are some of the indicators and causes associated with operators leaving their jobs? Are there any solutions in sight? How do operators feel about these very interesting questions? Earlier in the year, 21,407 e-mail solicitations were sent to operators across the country. The CEU Plan Survey was accepted by 20,550 recipients and viewed by 4,405 of those, from which the responses were collected and the responses sorted into these categories: Certification Exams, Benefits and Pay, Morale, Suggestions by Operators to improve their systems. While the main focus of this study is upon the issues around certification exams and training, other workplace concerns were addressed by the respondents.

The polling of this survey was conducted during the first and second quarters of 2022, historically noting that we are now in our third year of the COVID pandemic; thus, the feedback and opinions are based on the years when isolation in training and operational activities curtailed many learning opportunities. In the survey, we posed a question concerning the effect of COVID on operators and their operations. While only a small percentage indicated any COVID symptoms, possibly due to their high natural immunities, among those, the biggest issues noted were manpower shortages, increased water usage and availability of chemicals and supplies, some of which topics will be

covered in future briefs. All-in-all, though, the operator community has responded well and done an excellent job in maintaining operations through the pandemic.

Here's a copy of the original 2022 CEU Plan survey:

**The following are short essay topics, we do not care about typos, misspelled words, etc., but rather what you are thinking:**

1. Describe what water/wastewater treatment means to you.
2. If you had one wish for the water/wastewater industry, what would it be?
3. Describe how you prepared for your certification exam:
4. What was the best means to study for your exam (individually, group, tutoring, other ways)?
5. Which format did you feel comfortable with, to study and learn terms, methods, and rules (correspondence, classroom, webinar, online, Zoom, plant manager – tutoring, or others)?
6. How has the COVID epidemic affected you and your operation?

**After a couple of weeks, we followed up on the responders, with a few related questions, as listed below:**

1. Explain your opinion of the certification exam(s) taken. (What was your experience like taking the exam?)
2. Should you have failed an exam attempt, describe what you felt was the cause?
3. What is your opinion of the training you received? Was the instructor helpful?
4. Did you use study guides and memorize answers to pass? Did it work?
5. During the COVID epidemic, what is your opinion of the webinars and Zoom sessions used in training? Were they helpful?
6. Open Mic – should you have concerns or wish to sound-off on issues facing you and your work in the water/wastewater field.

The results were determined by the responses of utility operators across the USA, as well as from conducting follow-up interviews with various operators, trainers, and state OCP administrators. As you can see, we did not utilize a bingo card approach, nor rating of leading questions from 1 to 10, but rather, asking for the respondent to state in their own words, in a short essay, what their opinion was, in regard to enjoyment of their work, preparing for exams, compensation and even what really “ticks them off”.

# Leadership

# Now and Then

In 2022, I collected operator opinions, listen to and observed presentations on “The Great Resignation” while summarizing thoughts of yesteryear. Many of today’s suggestions and recommendations by professionals reveal similarities to the practices of the 1970’s and 1980’s. During this period, 40 and 50 years ago, we practiced the majority of these professional solutions, which could resolve the “Great Resignation”, the “Great Re-Set”, and/or the thoughts “I Quit”. How can this be? By re-visiting the successful methods of operating and expanding the safe drinking water and waste collections of local communities – Public Service.

I would like to spend a few minutes and share some of my experience of the late 1970’s and early 80’s with you. Hopefully, some of the memories will strike a bell. My experience started with a population area of around 700,000 residents within the Tampa Bay of Florida: Hillsborough, Pasco, and Pinellas Counties. Pinellas County was the second largest County in Florida with major cities of Clearwater, Dunedin, and St. Petersburg. The coast line of Tampa Bay is covered with Pinellas County beaches, along the western side.

The water and wastewater treatment services were broken down into the City or County jurisdictions, along with some franchise areas of privately run utilities. All of these services areas included their own distribution and collection systems, along with the treatment plants. The cities of Clearwater and St. Petersburg had multiple treatment locations, such as the Northern – Southern, Eastern – Western located facilities; Dunedin had one facility, with the County or privately run utilities servicing areas outside of the city limits. As you may image, it was a complex arrangement; but it worked. Over the years, the privately run systems were obtained by the City or County operations. This consolidation resulted in better treatment quality and increased the treatment plant efficiencies in the discharge, both of water and wastewater. As years passed, a higher degree of treatment was required and monitoring and reporting of plant operations was enhanced. Fast forward to today, fewer operating (regionalized) facilities, with an increase in population by five-fold -- 700,000 to over 3 million. So, how did the system maintain operations, increase efficiency, and meet the growing population? Good Leadership!

Good Leadership was the Key to Success! The Pinellas County Utility Director, Mr. Bill Dunn, who was a registered engineer and a true gentleman lead the system with many of the current workforce suggestions of today. Remember, this is a comparison of the 70s – 80s to 2020’s... The major element of the Pinellas County success lay in Mr. Dunn’s leadership skills, leading as a Team. For example, each week, a staff meeting was held to handle the current and future planning tasks; all divisions were

included: operations, maintenance, engineers, purchasing/finance, public works, human resources, and divisional managers. Discussions include all pending tasks, review of emergency preparedness when seasonal (hurricane) conditions reviewed, forthcoming preventive maintenance and long-range planning. Sitting at the table, everyone had a voice, everyone worked to coordinate their function of the task to be performed. Communication between all divisions with an act of respect to all. The utility director created this Team Action to implement the initial water reuse programs, hurricane drills, renovation of older infrastructures or increase capacity, along with addressing the advanced treatment issues of the 80s and steps to control disinfection byproducts' discharge in the effluent.

Another key element to this success, the director respected everyone and recognized with rewards to the "hard" & "dedicated" working individual within the work force, and conducting a smooth political arena with the governing bodies. Beside the normal divisional or plant holidays luncheons to meet and get to know the workforce, the director would spend his Saturdays working with the O & M crews around the service area, to better understand the needs and desires -- both personal and professional needs. The ability to make field decisions and move forward led to efficient operations and was very rewarding to the individuals, as well... everyone felt loved and respected. Their voices were heard and implemented in many cases. Why would anyone want to leave or quit under this leadership and culture? This is the very definition of leadership.

Many times, hard-working individuals would be recognized for their positive input in the system. These folks were rewarded with overtime, time-and-half or double time; for these extra projects... What a motivator! What a Challenge! Proven Success! Many individuals would work harder to be part of these elite Teams. The "A" Team... recognized for its contributions and work ethics.

Today, these leadership techniques have vanished in many areas -Directors and management have lost this skill set. This is due to directors wanting to "manage" instead of "leading". Wise heads of businesses know that you manage issues and problems; you lead individuals. Attempting to control every aspect of the workplace leads to less effective operation.

Dealing with engineering and legal aspects demands for eighty percent of the time has reapportioned and reduced management's available time to Know – the – Workforce. The loss of respect and dignity to the workforce has grown to alarming proportions. Forty years ago, engineers were employees of the Utility System; they worked side by side with O & M and purchasing. Back then, very few errors and omissions were caused by engineers, because operators, sitting at the same table, would point out these failures and assist engineers in learning what the critical areas were! More efficiency – Less Costly – Better Designed and Built. Remember, in the early years, utilities were self-contained; everything functioned together and issues were discussed - resolved in the team meeting.

In response to our survey of Operator Opinions – a majority of our responses included a sense of disrespect from management, and in many cases, outweighed the monetary issues of the workforce. Think about the comparison of 70-80s to 2020s, management and leaders need to return to the roots of operation. Who performs these vital elements within the utility organization? Knowing your team members and what makes them tick is critical to the survival of the Operator Community, knowing the

team members is a basic component of leadership. Ignorance of your team members' capabilities, strengths and weaknesses leads to failure in the workplace; the alternate is to be left with SCADA and how you explain it to your community when their water supply has been hacked or contaminated!

Operator Challenges can be summed up in a few words: "An Operator Can MAKE or BREAK the system." Working together, communicating together, and understanding the needs is imperative. Holding ON to the knowledgeable and experienced individuals allows for continued success, as "Operators are the Backbone" of this success.



Achievement



Politics

Over the past twenty to thirty years, we have seen an increase in politically compromised decisions taking the place of common sense. The bulk of these decisions are based upon management's choice of consulting engineering firms, process selection, and team member advancement, along with other situations. How did this change come about from basic, fundamental and commonsense approaches, to "this is the way it will be?" During the earlier development of the USEPSA and the implementation of the Clean Water Act, a lot of grant funds were given to major cities, starting in 1971 - 1973 and later. These grant programs established the infrastructures to clean up our waterways, the air we breathe, and the water we drink. The rapid push to implement the programs created many start-up issues – how the money would be spent, how the facilities would be built and operated, and most importantly, how would they were to be maintained. These issues resulted in the use of research for innovation and advancement within water treatment. Sadly, misuse of these funds, bringing in outside engineering firms instead of utilizing in-house engineering services, was costly in terms of effective operation.

As a result, more decisions began to be made on the golf course instead of at the team meeting. Sometimes, the wrong decisions were made with equipment and/or process control issues, leading to a "policy," basically accepted as "Get the Operator to fix," or-passing along the root of the malfunction issue. In the 1990s, Thank God, the operator community consisted of many Vietnam Vets (and retired military service personnel), true hard-working mechanics who developed the solutions and tweaked the controls until quality was present within the process. These champions within the Operation and Maintenance of Utility Management were game savers, in that their experience, knowledge, and know-how laid the foundation for the utility success of today. Will these practices continue? Who Knows? We hope they will prevail; however, workforce and social issues have become major roadblocks in these prevailing winds.

The Team-Spirit approach has been lost in many areas.

- I DO NOT CARE
- It is only a job to me
- Hate my boss – waiting for my Lotto win!

A better approach would be to re-visit the past, in what worked and how energized the team response was during the earlier days. It is vital to upper management, from the Federal to State to Local levels, to evaluate and implement changes to meet the growing consequences of a less experienced and less knowledgeable workforce running the show today. For example, can you run a plant? The common answer today, “let the SCADA system run the plant, we do not need operators,” might sound popular with some, however, the reality is “how do you inform the community of water quality without the operator?” Who will sound the alarm when the unexpected occurs? Who holds management’s hand in these critical moments? The team approach is very helpful. Return to communication in-person, not by cellphone, which is easier, but less effective. The development of comprehensive achievement and ethics policies creates a standard for all, and instills the team approach. But it does not STOP there; effective operation works one to one, group to group, team to team. Discussion of issues and the periodic review of an Emergency Response Plan, are required to handle corrective, preventive and emergency situations.

There are many Management and Leadership training courses available to you. Searching for the most relevant to your program is important. CEU Plan has a library of highly relevant courses involving basic and advanced leadership, time management, preparation of a risk assessment and ethics training, available for you. Taking the time to search and learn from others is important to function in our ever-changing workforce environment.

## *Practices shared by Others*

Over the past forty-fifty years, one area of Operations which has NOT disappeared is the Family. In most treatment plants, mechanics and support staff still remain as a second family to the individual. Over the years, when everyone is working together, they become closer and naturally develop the team approach. This connection between individuals working together for a third to a half of their waking lives is similar to a secondary family, where your personal and professional development grows, with the assistance or mentoring of the experienced operator to the new entry level employee. This approach to training was the best aspect of the 70s and 80s culture, and still exists on a smaller scale today.





In researching for this study, many operator respondents voiced their admiration and respect for their team: “That is the reason I hang in there.” .... “I LOVE working with my colleagues, learning and sharing a lot.” When I talked with various plant managers and operators about their unique approaches to the team concept, some of their program included:

- Operator - Plant Cook Off --Chili contest -- Bar-B-Q
- Hot Dog eating contest
- Crawfish Boil at a County Park ... bring the kids, play in the park/beach together
- Summertime Picnics and swimming



The interaction and connection of the team members provides the connection for better operations and morale. When you think of morale, how would you like to operate a wastewater plant with an effluent discharging into the Rio Grande River, one of the major treatment plants within a city located on the USA border? Operations points out that it is difficult to have drones and helicopter overhead, patrols riding along your chain link fence, with continual surveillance 24/7 against illegal entry and a potential



for damage to your facility. What a challenge for management and staff to deal with this; what a stressful encounter with difficulties to maintain an operator team!

An example of damaging political issues, where only one or two individuals are operating the system: Actual cases have shown a city manager wanting to control everything, forcing one or both of the operators to quit – walk-off the job. How does the City Manager explain the lack of water quality OR contamination, requiring a boil-order to the residents?

Another issue is overcoming the wage war, as talent opts for better pay... Utilities, keeping pace with the experience drain, are forced to replace staff with young, inexperienced individuals, creating training challenges to impart a minimum understanding of the Need-to-Know criteria and procedures.

Troubleshooting is becoming an art. With the increased resignations and retirements of the highly experienced operations, finding and procuring replacements will continue to be a compelling workforce issue.

Before we put 2022 in the rear-view mirror, let's evaluate the changes required to maintain and improve our systems. From the Federal and State perspective, the primary change is to elevate the awareness and standing of your Operator Certification Program; to reach out to the program managers, meet with the staff – learn what is required to improve the program. Get your feet dead-center into the program, as operators are the core to your overall environmental regulatory program. It is easy to say, but sometimes difficult to perform; however, there are great people working in the certification program to help you bring in a new year with success. I would like to share some of the personal comments from Operators across our country, what drives them to do what they do for their community everyday:

- It was a great opportunity for me to have a successful career, I highly recommend it to everyone I talk to. I enjoy all the new technology, even though I was old school. It gave me pride knowing I was helping the environment and making sure people have clean drinking water.
- It's a passionate career choice. If doing your best to ensure that future generations can have clean water and unpolluted outdoors doesn't matter, then this isn't the field for you
- One hell of a lot of hard disgusting work, lack of resources, lack of support from management and deadly fear of enforcement action from the regulatory agency.
- I'm a preacher now, but I keep up my license. If it wasn't for preaching, there is nothing I would rather do. The variety in the job is unlike any other. Mathematics, chemistry, biology, getting filthy then taking a shower, and so on. It is a great field and I recommend it to younger people constantly.
- Safety for citizens - clean water is important for the health and well-being of everyone
- Protecting the public health and the environment by properly treating our most important natural resource with critical infrastructure and licensed experts.

The Operator Certification Program hears these passionate comments and feedback on a regular basis. It is important to recognize that the next generation of utility operators will come into the field of those

already motivated to work in public service. Yes, they desire tangible rewards, adequate compensation and appreciation for the work performed. But most of all, they will invest themselves in a worthwhile career. It is our duty, if we want to keep them in the field, to respond to these needs. They are in-tune with the current affairs in operating treatment plants. They need management support to survive, they need a seat at the table; as critical decisions facing water quality will increase. The key difference between many technical fields and water-wastewater treatment is that operators are required to multi-task; it is required on a daily basis.

And lastly, suggestions for a local jurisdiction, elected or appointed official: Go out to the treatment plant... understand what goes on, look at the process and the plant that you approve millions of dollars for operating or to build a new plant. Hear and learn the human aspects of our local water quality operations. Endorse and support school education to protect our waterways, and work to maintain your operators; before you lose them.

In summary, as the old generational of Operators are replaced by the young and inexperienced workforce, many challenges will face management. These include dealing with emerging technologies, communication with a new generation, developing new operators' understanding of the process controls and systems, inspiring those more interested in position and pay than long-term career effects and rewards. During the research for this study, our personal interviews with many operators from across the USA, not isolated to one area or region, have expressed a similar viewpoint: they love their contributions to the community, love the challenges of every day operation and multi-tasking, share an appreciation for being respected, and a willingness to jump jobs or locations for an increase in wages and benefits. "The Great Resignation" is real, with no ending in sight. Invest in your People – invest in education and training of your leaders and managers – which, in return, provides a higher level of work performance and job satisfaction.

A special thanks to all of the operators involved in the survey and discussions, with peer reviewed by Tom Hofer – Bob McCarthy– Joey Leverette – Pat Murphy – Margaret Doss – Fred Murillo, along with Mary Strickland; who's always helped me with my love for commas...
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