

A RISING TIDE: THE FUTURE OF CLEAN WATER

DYNALECT ANALYTICS

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ATTRIBUTIONS

For this report, we interviewed John Kaestle, the President and CEO at Markel Corporation, a plastics company which specializes in fluoropolymer tubing for applications including water purification. Much of the content of this report comes from that interview.

In this report, we also used many online sources, which are referenced in the relevant sections.

EXECUTIVE SUMMARY

Clean, potable water seems to be ubiquitous in most parts of the developed world, but only a small fraction of the world's water is safe for human consumption. The UN has predicted that given the existing state of climate change, “**half the world's population** will be living in areas of high water stress by 2030.” The world already spends a collective \$700 billion per year on clean water; over the next 25 years, the world is expected to spend a total of about \$25 trillion on clean water resources in an attempt to alleviate this predicted water scarcity. This enormous expenditure creates a substantial economic opportunity for companies involved in the water purification and management industry, and any investors savvy enough to participate in their growth. This month, we've put together a report that will show you how to capitalize on these developments and use your personal portfolio to contribute to improving clean water availability around the world.

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SHORT LIST (STRONG BUYS)

The following is a list of securities that we, based on the findings in this report, *strongly* endorse for purchase.

Consolidated Water Company (NASDAQ: CWCO)

Current Price: \$11.70

IDEX Corporation (NYSE: IEX)

Current Price: \$108.39

Roper Technologies (NYSE: ROP)

Current Price: \$225.18

First Trust Water ETF (NYSEARCA: FIW)

Current Price: \$42.31

EXTENDED LIST (BUYS)

The following is a list of securities that we, based on the findings in this report, also endorse for purchase.

Idexx Laboratories (NASDAQ: IDXX)

Current Price: \$164.60

Danaher Corporation (NYSE: DHR)

Current Price: \$83.96

Summit Water ETF (NYSEARCA: WTRX)

Current Price: \$29.81

INTRODUCTION

Clean water is everywhere, yet it only comes from about 1% of the total water resources on the surface of the planet. You drink it, you bathe in it, you swim in it, any salad you eat is 96% water, we make electricity with it, your laptop was [made with it](#), and the data on your Facebook account is stored in server facilities that are cooled by it.

The importance of water is no secret. The crisis in Flint was a stark reminder of our reliance on clean water, and the speed at which the world is progressing towards a global water crisis is astonishing. Consider the following facts from the [World Bank](#): by 2030, “the world will face a 40% shortfall between the forecasted demand and the available supply of water in the world,” “groundwater is being depleted faster than it is being replenished,” and “by 2025, 1.8 billion people will be living in regions with absolute water scarcity.” In their [2017 Global Risks Report](#), the World Economic Forum ranked a global water crisis as the third greatest risk facing the world over the next few years, beaten only by weapons of mass destruction and extreme weather events brought on by global climate change. The same report said that a water crisis was more likely to happen than an “asset bubble” like the housing or dot com bubbles of 2008 and 1999. It also reported that a water crisis is more likely than a worldwide failure to adapt to and mitigate the effects of climate change.

All of this is important for several reasons. Being a financial analyst company, water is interesting to us as a global resource that is facing rising demand and falling supply; the ongoing realization of this trend will continue to drive water prices higher and create huge economic opportunity for those who are paying attention enough to look for it. The purpose of this report is to give our [Dynalect Subscribers](#) the inside scoop on that opportunity.

But equally important is the responsibility that we have as investors to promote a better future by utilizing capital for *constructive* means instead of *extractive* means. The clean water industry presents a win-win opportunity to return admirable profits while simultaneously supporting the innovation of more sustainable water utilization practices throughout the world. At the end of the day, the heart of capitalism is about driving growth by advancing solutions that improve the quality of life for everyone involved. We take this responsibility very seriously and hope you will consider doing the same with your personal portfolio.

CURRENT OVERVIEW

Currently, the world collectively spends about \$700 billion dollars a year on clean water, according to the United Nations. Over the next 25 years, the world is expected to spend a total of about \$25 trillion on clean water resources to alleviate current deficiencies and meet rising demand. According to a [Bankrate article](#), the United States alone is projected to spend upwards of \$500 billion over the next 20 years to replace about a third of American water infrastructure that currently leaks and costs significant inefficiencies in the national water system.

The expenditure of global populations on water infrastructure and resource utilization is only a piece of the larger economic picture. According to the [United Nations](#), it is estimated that there are about \$260 billion worth of global losses associated with deficiencies in clean water availability. If the world can work towards alleviating these deficiencies, the economic benefits could be far ranging.

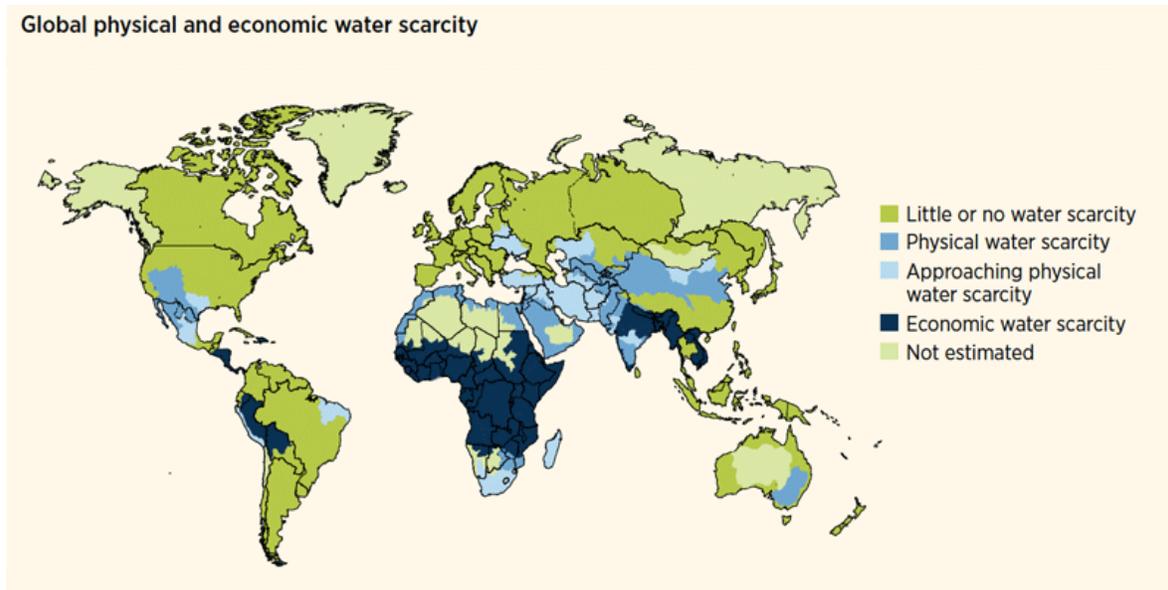
There are several sectors within the clean water industry that are positioned to benefit more than others. The first is desalination. In 2015, the world produced approximately 32 billion cubic meters of desalinated water; this figure is expected to increase by as much as 60% by 2020. Natural freshwater resources make up about 1% of global water resources; the rest of the water on the planet is either salty or frozen in ice caps. This means that the oceans present an enticing opportunity for countries to solve their clean water programs. Especially given the fact that about 40% of the global population lives on the coastline, it will be important for the world moving forward to develop cost-effective ways to treat salt water and render it potable for a variety of uses.

The second sector involves agriculture irrigation systems. Approximately 70% of clean water extraction is performed for the sake of watering the plants that produce our food. The irrigation industry is a huge business on a global scale, and industrial farmers are always looking for ways to save water and therefore lower their production costs. There are many companies working to make large scale irrigation systems more efficient, which will present enticing investment opportunities for [Dynalect Subscribers](#) as the price of water rises and people become more motivated to use it conservatively.

Finally, there are many companies that own water rights to significant resources throughout the United States. For American investors, it will be important to consider that the right to water access will almost certainly rise in value of the next several decades. These companies don't necessarily work in the water industry directly, but their bottom line is directly related to the value of the real estate and natural resources that they hold.

AFFLICTED AREAS AND FUTURE PROJECTIONS

Although we have certainly seen the effects of a lack of drinking water in America (Flint Michigan crisis, droughts, oil spills, etc.), in some parts of the world access to clean water is a matter of life and death. According to the World Health Organization, about [50% of all people](#) in the developing world are suffering from one or more diseases caused by poor water supply and sanitation.



Source: [World Water Development Report 4](#). World Water Assessment Programme (WWAP), March 2012.

Water stress and scarcity are defined by cubic meters of water accessible per person, and while it's hard to visualize the numbers, it's safe to say that you don't want to be living under water stressed or water scarce conditions. Economic water scarcity defines a situation in which a region lacks the resources (finances, infrastructure, or labor) to provide adequate amounts of clean drinking water to the people living there.

To make matters worse, much of the existing drinking water in the developing world never makes it to the people who need it most. [According to the EPA](#), "About half of the water in drinking water supply systems in the developing world is lost to leakage, illegal hook-ups and vandalism". In America, it may be hard to picture a scenario in which water is regularly stolen from public access, but this statistic brings light to just how valuable water can be in places where it's so scarce.

Several projections from the [United Nations](#) bring to light just how pressing the water crisis is going to get in the upcoming years if nothing is done to curtail climate change or improve water purification technology and infrastructure:

*By 2025, **1.8 billion** people will be living in countries or regions with absolute water scarcity, and two-thirds of the world's population could be living under water stressed conditions.*

*With the existing climate change scenario, almost **half the world's population** will be living in areas of high water stress by 2030, including between 75 million and 250 million people in Africa. In addition, water scarcity in some arid and semi-arid places will displace between 24 million and 700 million people.*

Now that you understand the importance of clean water and the pressing nature of our present situation, here's a look at some major challenges that the water purification industry currently faces.

INDUSTRY STATUS

Our research this month gave us two main takeaways. First, we found that current water treatment infrastructure in developed countries like the United States is outdated and ill-equipped to deal with water scarcity challenges in the future, driving innovation into alternative technologies. In places like California, where severe droughts are crippling an agricultural industry that produces crops for most of the nation, in a region immediately next to the ocean, there is already intense interest in developing methods for cheaply desalinating water to be made potable. This leads into our second finding, which is that most of the innovation and industrial research in water purification is into reverse osmosis (RO) technologies for desalination. We explored trends in this technology and will continue to investigate recent and pending developments.

Infrastructure Outlook

In the United States, all publicly provided water for domestic use is treated to a standard of potability, even though most domestic water use goes toward applications like laundry, bathing, and yard irrigation, which don't require the same level of cleanliness and sterility. The method of purification is typically very simple, involving the harvesting of water from freshwater reserves, filtration of physical contaminants by chemical flocculants and passage through charcoal, sand, and/or clay, followed by sterilization via the addition of halogens like chlorine.

This stands in contrast to the predominant methods in many developing countries. In areas without sufficient public infrastructure for water treatment and distribution, the function of water purification is accomplished, if at all, with gravity-fed household modules that typically consist of a carbon strainer block and a disinfectant cartridge which must be periodically replaced, akin to a more robust version of a Brita filter. Disinfectant cartridge replacements can be prohibitively expensive, so an alternative method of sterilization is ultraviolet radiation, usually simply from sunlight. UV sterilization, like chemical sterilization, only works on water that is free of particulates, which can harbor and protect bacteria. Because filtration is more inconvenient and expensive with household modules, water for non-consumption is typically not filtered.

Companies that are able to provide emerging markets with effective municipal water treatment solutions as they gain the stability and capital to build them stand to see a lot of growth.

Desalination and RO

Because such a large proportion of the earth's water is saltwater (upwards of 95%), not to mention that so many people live near oceans, and coastal areas are most likely to see destabilization of freshwater sources as a result of climate change, there has been intense interest in developing desalination technologies. Desalination is also of particular interest because for agricultural use, which dwarfs household use in terms of scale, bacteriological and particulate contaminants are less important but salt can be highly detrimental. Salt in soil, as the Romans realized when they salted the earth under Carthage, can permanently ruin arable land, so as societies increasingly look toward the sea as a source of water for crop irrigation, extremely effective desalination techniques at reasonable prices become imperative.

RO is the most promising method of desalination. Distillation, the other main method of removing salt, is simply too energy intensive. Even so, RO uses a lot of energy to generate water pressure, and research is driven towards making less energy-intensive RO processes. Since RO does not completely separate water from a contaminated solution, disposing of concentrated waste can also be a concern – for desalinating ocean water, the concentrated waste can typically be recirculated into high-flow areas of the coastline, but for other applications such as purifying fracking wastewater, the resultant concentrated sludge typically has to be trucked off for further separation.

Reverse osmosis simply involves pushing water through a semipermeable membrane, typically made of cellulose acetate, aromatic polyamides, or polyurea, which allow water to pass through but not larger complexes such as salts (hydrated ions) or bacteria. It is called “reverse” osmosis because it involves forcing water against the grain of osmotic pressure, which naturally pushes water into areas with a high concentration of solutes. Left unattended, water would all flow to the side of the semipermeable membrane with salt on it, so immense hydraulic pressure must be applied to push water in the opposite direction. This pressure, generated with fluid pumps, contributes most of the energy cost of RO. Pressure exchangers, physical devices which confer fluid pressure from outgoing waste in incoming source water, can save huge amounts of energy. These devices are currently an exclusive product of Energy Recovery Inc. (ERII).

Another technology of interest is forward osmosis, which is similar in setup but places a high concentration of a permissible solute such as sugar on the output side and allows water to passively flow to that side. Currently, forward osmosis is mostly in use for generating individual drinking water. For instance, a forward osmosis device is in development at NASA that will convert urine into a sports drink on space voyages.

See Appendix C for detailed technical information on water purification methods

SECURITIES OF INTEREST

Stocks

Danaher Corporation ([NYSE: DHR](#)) is a very large-cap company with brands producing a variety of industrial and manufacturing products, including water testing and treatment instruments. We are interested in Danaher on the basis of its high level of diversification, steady growth record, extensive intellectual property, and relatively attractive price, but have some hesitation because it faces risk of significant tax penalties in the near term from 2016 split-offs and recently enacted provisions of the Affordable Care Act.

Energy Recovery ([NASDAQ: ERII](#)) is a small-cap company that provides products designed to make industrial fluid processes such as reverse osmosis and fracking more efficient. We did not recommend Energy Recovery because we believe they are overvalued (PE ratio: 161), there is high competition in their industry, their sales are unpredictable and reliant on contracts, and the company is facing considerable risk regarding a move to license and commercialize the VorTeq, a technology marketed in their oil & gas sector.

IDEX Corporation ([NYSE: IEX](#)) is a mid-cap company that develops and manufactures fluidics systems and components. We endorse their stock on the basis of a record of stable growth, very good stock price momentum, and a broad customer base.

Idexx Laboratories ([NASDAQ: IDXX](#)) (in no way affiliated with IDEX) is a large-cap company specializing in microbiology testing equipment used in veterinary and water treatment applications to detect the presence of pathogens. They have a stellar financial record and lots of physical capital, but we are tentative to endorse them solely on the basis of their high valuation, with a P/E ratio of 61.

Consolidated Water Company ([NASDAQ: CWCO](#)) is a small-cap company that provides reverse osmosis seawater desalination plants and water distribution systems in The Cayman Islands, The Bahamas, Belize, The British Virgin Islands, and Bali - all areas with insufficient access to potable water, favorable regulatory and tax environments, growing populations and economies, and high tourism. We recommended this company because of their exclusive rights to provide water to several locations, their continued acquisition of industry-relevant companies, their extensive use of and investment in reverse osmosis technology, and their involvement in the production of the largest desalination facility in the Western Hemisphere.

Roper Technologies ([NYSE: ROP](#)) is a large-cap company that designs, produces, and distributes scientific and industrial equipment, including several brands such as Roper Pumps, Metrix, and Flow Technology, which work in fluid handling, wastewater management, and flow meter manufacturing. They have made their way into the Dynalect Portfolio by way of their stellar financial stability, consistent historical growth, and low risk profile.

The Gorman Rupp Company ([NYSE: GRC](#)) is a small-cap company that solely produces water pumps, mostly for municipal, agricultural, and industrial applications. It has experienced very stable revenues for several years but doesn't seem especially poised for growth, and has experienced drastic stock price fluctuations in the face of minor news events, such as the acquisition of a very small subsidiary last year. They also might face declining demand from agricultural customers in the event of a debt bubble or rising interest rates.

ETFs

The **PowerShares Water Resource Portfolio ETF** ([NASDAQ: PHO](#)) focuses on companies that pursue business related to “conserving and purifying water for homes, business, and industries.” It is designed to reflect the [NASDAQ OMX US Water Index](#), which seeks to track exclusively US based companies.

The **Guggenheim S&P Global Water Index ETF** ([NYSEARCA: CGW](#)) attempts to adhere to the S&P Global Water Index, which tracks 50 securities that are divided into two distinct groups: 1. Water Utilities and Infrastructure, and 2. Water Equipment and Materials. The ETF has holdings from across the globe, with only slightly more than 44% of the portfolio being made up of American companies.

The **First Trust Water ETF** ([NYSEARCA: FIW](#)) seeks to generally track the [International Securities Exchange Water Index](#), which is similar to the NASDAQ OMX US Water Index, but focuses on more of a global market instead of just the United States. The First Trust Water ETF itself, although seeking to track an international index, only includes domestic (US based) companies.

The **Summit Water Infrastructure Multifactor ETF** ([NYSEARCA: WTRX](#)) is the newest, and arguably the most sophisticated, EFT being presented here. The Summit Water ETF is also the only ETF mentioned here that actually has international holdings, which could give it a competitive advantage over all the others due to the global nature of the predicted clean water crisis.

APPENDIX A — FUNDAMENTALS EVALUATIONS

Danaher Corporation (NYSE: DHR)

Danaher Corporation is very similar to Roper Technologies in that it is a very diverse company that operates in a wide variety of industries, of which clean water is one. The company is based in Washington D.C. and “designs, manufactures, and markets professional, medical, industrial, and commercial products and services worldwide.” The market capitalization of Danaher is almost \$60 billion, which places it comfortable in the large cap category.

General Financial Information (as of 05/24/2017)

| | |
|----------------------------------|---|
| Fiscal Year (Current F17) | January 1 st – December 31 st |
| Current Stock Price | \$83.96 |
| Next Earnings Report | 07/20/2017 |
| P/E Ratio | 25.57 |
| Danaher P/E Ratio | 34.75 |
| IDEX P/E Ratio | 29.78 |

Sales and Revenue

| \$,000,000 | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------|---------|--------|--------|--------|--------|
| Sales/Revenue | 16,882 | 20,563 | 19,914 | 19,118 | 18,260 |
| Growth | -17.90% | 3.26% | 4.16% | 4.70% | N/A |

The sales and revenue data for Danaher Corporation shows strong growth moving the past several years, with the exception of 2016. This data is somewhat misleading due to the fact that Danaher produced several spinoffs in 2016, which were not counted in the revenue figures for that year. Each subsidiary of Danaher experienced revenue growth in 2016, but certain subsidiaries were [no longer counted](#) in the overall dataset, which is why the 2016 data reflects a downturn in revenue.

With that said, it is clear based on the revenue data that Danaher is very financially stable and well positioned to continue growing modestly yet consistently over the medium and long term.

Gross Income and Profit Margin

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Gross Income | 9,383 | 10,911 | 10,488 | 9,958 | 9,448 |
| Gro. Inc. Growth | -14.01% | 4.03% | 5.33% | 5.39% | N/A |
| Gross Profit Margin | 55.58% | 53.06% | 52.67% | 52.09% | 51.74% |
| Prof. Marg. Growth | 4.75% | 0.74% | 1.11% | 0.68% | N/A |

The gross income and profit margin data shows similar results as the revenue data. The strong growth moving through the past 5 years was interrupted in 2016 by a sudden drop off. However, this is not an accurate reflection of Danaher's financial standing for the reasons stated above.

The consistent profit margin growth over the past five years is encouraging; it is clear that Danaher is becoming more and more efficient with their products and services and therefore able to turn a higher profit.

Earnings Per Share

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| EPS (Basic) | 3.65 | 4.74 | 3.63 | 3.80 | 3.36 |
| EPS Growth | -23.00% | 30.58% | -4.47% | 13.10% | N/A |

The earnings per share data of Danaher is a mixed bag. The sudden drop off in 2016 is likely still a result of subsidiary spinoffs and reporting discrepancies that took place last year. Ignoring this sudden sharp drop off, the rest of the earnings per share data is very reasonable, and shows a quickly growing company that is poised to continue to appreciate moving forward.

Miscellaneous Data and Ratings

| | |
|-----------------------------------|----------|
| Zack's Rank | 3 (Hold) |
| Average Stock Price Target | \$90.69 |
| Return on Equity | 9.22 |
| Roper Technologies ROE | 11.88 |

The Zack's rank of 3 for Danaher is likely due to the size and stability of the company. There doesn't seem to be any significant upside potential for Danaher, but investors can expect to make modest and consistent returns in the long term. Similar to Roper Technologies, the benefit offered by Danaher is size and stability as an investment. Especially in an industry where we will be recommending some smaller cap stocks that carry more risk, it is important to balance those investments with larger and more stable companies like Danaher.

It is also worth noting that Danaher's stock price has taken a minor hit after the poor revenue data from 2016. This dip in price will likely create some small upside potential in the short term for investors who enter into a position in the very near future.

Final Word

Danaher is a large and stable company that could serve as a low-risk addition to the Dynalect portfolio. This is an important consideration as we will be adding some smaller cap companies to the portfolio as well such as Consolidated Water; the stability provided by Danaher could help to balance out some of the increased risk associated with the smaller companies.

Roper Technologies (NYSE: ROP)

Roper Technology's business encompasses a wide range of activities and interests. They focus on designing and implementing software and hardware "solutions" within companies operating in four main sectors: 1. Medical and Scientific Imaging, 2. Radio Frequency Technology, 3. Industrial Technology, and 4. Energy Systems and Controls. The work they do within the water industry is primarily focused on developing management and purification technologies, and is only a part of their larger mission and operations. The team here at Dynalect feels like Roper Technologies is worthwhile to include in this report due to its strong financial history and growth potential.

General Financial Information (as of 05/24/2017)

| | |
|----------------------------------|---|
| Fiscal Year (Current F17) | January 1 st – December 31 st |
| Current Stock Price | \$225.18 |
| Next Earnings Report | 07/31/2017 |
| P/E Ratio | 34.75 |
| Danaher P/E Ratio | 25.57 |
| IDEX P/E Ratio | 29.78 |

Sales and Revenue

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Sales/Revenue | 3,790 | 3,582 | 3,549 | 3,238 | 2,993 |
| Growth | 5.79% | 0.93% | 9.62% | 8.17% | N/A |

The sales and revenue data for Roper Technologies shows a financially stable company, with mild upside potential; Roper hasn't grown hugely over the past five years, but it has clearly managed to grow at a reasonable and steady pace. The market capitalization of Roper Technologies is well over \$20 billion, which further indicates that Roper is a large, stable company that seems poised to achieve modest growth in the long term.

Even the quarterly data shows a nearly impeccable growth record for Roper Technologies. Over the past 5 quarters, Roper has achieved growth figures ranging between 1.5% and 7.5% every quarter, with especially strong figures moving through the two most recent quarters.

Gross Income and Profit Margin

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Gross Income | 2,332 | 2,165 | 2,102 | 1,883 | 1,672 |
| Gro. Inc. Growth | 7.75% | 2.99% | 11.63% | 12.63% | N/A |
| Gross Profit Margin | 61.54% | 60.44% | 59.23% | 51.15% | 55.86% |
| Prof. Marg. Growth | 1.82% | 2.04% | 15.80% | -8.43% | N/A |

The gross income and profit margin data builds on the financial credibility that the revenue figures began to establish above. The gross income and profit margin data have been consistently growing over the past five years, with the brief exception of the profit margin in 2013. For such a diverse company, it is also good to see the profit margin relatively higher than that of their competitors (for example, IDEX (NASDAQ: IDX)'s most recent profit margin figure is only about 46%).

Earnings Per Share

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| EPS (Basic) | 6.43 | 6.85 | 6.40 | 5.37 | 4.86 |
| EPS Growth | -6.13% | 7.03% | 19.18% | 10.49% | N/A |

Other than the most recent year, the earnings per share data presented here offers another measure of the financial stability and performance of Roper Technologies. The company is clearly well managed as a financial entity and is large and diverse enough to consistently generate modest growth and to ward off poor performance due to short-term market fluctuations. Continued growth in the EPS figures will likely contribute to their stock appreciating over the long term.

Miscellaneous Data and Ratings

| | |
|-----------------------------------|----------|
| Zack's Rank | 3 (Hold) |
| Average Stock Price Target | \$232.64 |
| Return on Equity | 11.88 |
| Danaher ROE | 9.22 |

The Zack's rank for Roper Technologies is a hold position likely due to the fact that nothing has happened in terms of Roper's financials to warrant a strong buy position, at least buy conventional standards. There doesn't appear to be any huge upside potential in the medium term, it's not a particularly undervalued stock, and there isn't any game changing technology being developed that could send the stock through the roof. Roper, by any measure, is just a large, relatively safe, stable company that is best held over a long period of time, as Zack's rank suggests.

The average stock price target is only slightly higher than the current price. The company is likely to grow, but not by much, which is backed up by its financial history of modest, yet consistent growth.

The return on equity is higher than one of Roper's main competitors, Danaher, which signifies that Roper is able to return a profit efficiently and effectively given the money that it has. This fact is a further testimony to the skillful and conservative management of Roper, which will likely serve it well in the long term.

Final Word

At the end of the day, Roper appears to be an excellent large stable company, with conservative financial management, and modest, yet secure upside potential over the long term. And with a diverse range of business activities that include advancing the interests of the clean water industry, and developing technology that will help to alleviate the predicted water crisis, Roper is very relevant to this report.

Taking into account all of the provided data, and the projections we have made about the growth of the water industry and overall world economy, Roper Technologies will certainly have a spot in the Dynalect Portfolio.

IDEX Corporation (NYSE: IEX)

IDEX is a mid cap company based in Lake Forest, Illinois that operates in three main sectors. The IDEX Fluid and Metering Technologies branch of the company is of particular interest for the purposes of this report. The company designs and manufactures systems designed to handle all kinds of fluids from diesel lubricants, to clean water. They produce pumps, compressors, flow meters, and a variety of other relevant goods. IDEX also operates a Health and Science branch and a Fire and Safety Equipment branch.

General Financial Information (as of 05/24/2017)

| | |
|----------------------------------|---|
| Fiscal Year (Current F17) | January 1 st – December 31 st |
| Current Stock Price | \$108.39 |
| Next Earnings Report | 07/24/2017 |
| P/E Ratio | 29.78 |
| Danaher P/E Ratio | 25.75 |
| IDEXX P/E Ratio | 60.74 |

Sales and Revenue

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Sales/Revenue | 2,113 | 2,021 | 2,148 | 2,024 | 1,954 |
| Growth | 4.57% | -5.92% | 6.11% | 3.58% | N/A |

The sales and revenue data for IDEX Corporation show very consistent growth moving through the past 5 years, with the exception of 2015. The contraction shown in 2015 is not

necessarily surprising; the market as a whole experienced a relatively large contraction at the end of that year, which likely had a significant impact on IDEX’s bottom line that year. Other than that small blip, IDEX appears to be well situated to continue growing into the future.

In terms of the quarterly data, IDEX did very well in the first quarter of 2017, reporting an increase of 4.36% over the previous quarter. This further supports financial stability and upside potential of IDEX Corporation.

Gross Income and Profit Margin

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Gross Income | 985 | 941 | 987 | 908 | 840 |
| Gro. Inc. Growth | 4.63% | -4.67% | 8.73% | 8.10% | N/A |
| Gross Profit Margin | 46.61% | 46.56% | 45.95% | 44.86% | 42.99% |
| Prof. Marg. Growth | 0.12% | 1.33% | 2.43% | 4.35% | N/A |

The gross income and profit margin data continues to back up the assertions made based on the revenue data above. Other than brief downturn in 2015, IDEX has been growing very consistently every year over the past 5 years. They have also been able to consistently increase their profit margin, which shows that they are becoming more efficient in conducting their business and are able to make more money per unit sold each year.

The quarterly data suggests the same results; the first quarter of 2017 was especially strong, and sets the company up with an early start to a strong year of growth which will likely send stock prices higher.

Earnings Per Share

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| EPS (Basic) | 3.53 | 3.62 | 3.44 | 3.09 | 0.45 |
| EPS Growth | -2.49% | 5.09% | 11.48% | 586.67% | N/A |

The earnings per share data is strong, with the obvious exception of 2016. The dip in 2016 is relatively minor and can be mostly explained by higher than usual “unusual expenses” and SG&A costs.

The quarterly income statement shows solid growth from the most recent quarter, 32% up from the last quarter of 2016. This shows that the company is likely going to be able to rebound from the slight drop off in 2016 and achieve stock pushing growth in the medium to long term.

Miscellaneous Data and Ratings

| | |
|-----------------------------------|---------|
| Zack's Rank | 2 (Buy) |
| Average Stock Price Target | \$98.10 |
| Return on Equity | 18.15 |
| Roper Technologies ROE | 11.88 |

The Zack's rank of 2 reflects the strong upside potential from IDEX. The company achieved record orders and sales in April of this year, raised the dividend by 9%, and saw double-digit growth in revenue during the first quarter of 2017. This growth is likely to continue moving forward, and appears to be an enticing buy opportunity for interested investors.

After reviewing IDEX's financial documents extensively, it is also worth noting that none of their clients account for more than 2% of their total revenue, which offers downside protection in the event that there is an issue with any single client. Furthermore, IDEX has a diverse customer base with about 50% of total sales coming from outside the US, operates in a variety of markets, and is a small enough company to have considerable growth potential in the medium term.

The return on equity figure is much higher than some of IDEX's major competitors, which shows a high level of efficiency in capital utilization. The average stock price target is slightly worrisome, although the team at Dynalect is confident enough in the thoroughness of our research to proceed with recommending this company despite hesitation by some other analysts.

Final Word

IDEX has definitely earned a spot in Dynalect's portfolio as a mid-cap company with considerable growth potential, yet a very stable and consistent financial standing. We believe the company is well placed to take advantage of growth in the clean water sector, but also diverse enough to be able to withstand shorter term fluctuations or contractions that are inherent to any developing industry.

Consolidated Water Corporation (NASDAQ: ROP)

Consolidated Water Corporation focuses their efforts on developing reverse osmosis technology to carry out large-scale water desalination. They design and produce the necessary hardware and systems to treat and distribute salt water in Caribbean countries. According to their website, they also occasionally offer financial services for countries or companies looking to hire them to create a desalination plant, which further supports their bottom line and diversifies their revenue stream.

General Financial Information (as of 05/24/2017)

| | |
|----------------------------------|---|
| Fiscal Year (Current F17) | January 1 st – December 31 st |
| Current Stock Price | \$11.70 |
| Next Earnings Report | 08/10/2017 |
| P/E Ratio | 37.74 |
| Danaher P/E Ratio | 25.57 |
| IDEX P/E Ratio | 29.78 |

Sales and Revenue

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Sales/Revenue | 57,875.7 | 57,116.2 | 65,559.1 | 63,882.1 | 65,450.7 |
| Growth | 1.33% | -12.88% | 2.72%% | -2.49% | N/A |

The sales and revenue data for Consolidated Water sends mixed signals about the financial health and upside potential of the company. The company has been relatively stable over the past five years, but suffered a considerable setback in 2015.

After extensive research, we have concluded that the setback reflected in the data from 2015 and 2016 was a temporary downturn due to changes within the company structured. They acquired a company called Aerex, which didn't perform as well as they were hoping in the first year due to "a delay in orders from a large customer." We'll be looking forward to seeing the next financial report from Consolidated Water to see if they have been able to turn their financial situation around and continue to grow into the future.

Gross Income and Profit Margin

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Gross Income | 22,456.7 | 22,708.5 | 22,837.0 | 23,215.3 | 21,570.6 |
| Gro. Inc. Growth | -1.11% | -0.56% | -1.63% | 7.62% | N/A |
| Gross Profit Margin | 38.80% | 39.76% | 34.83% | 36.38% | 32.96% |
| Prof. Marg. Growth | -2.41% | 14.15% | -4.26% | 10.38% | N/A |

The gross income and profit margin data paint a similar picture as the revenue data. Consolidated Water had relatively rough years in 2014 and 2015 after the acquisition of Aerex didn't go quite as well as they were hoping. As Aerex starts to perform better, we expect the financial situation and the growth prospects of Consolidated Water to improve over the short to medium term.

One encouraging insight from the data here is that the gross profit margin has grown considerably over the past five years, which suggests that Consolidated Water has become much more efficient in implementing and selling their products and services. This efficiency will serve them well as they continue to grow in the future.

Earnings Per Share

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| EPS (Basic) | 0.27 | 0.51 | 0.43 | 0.59 | 0.64 |
| EPS Growth | -47.06% | 18.60% | -27.12% | -7.81% | N/A |

The earnings per share data of Consolidated Water is relatively weak. The figure is considerably down from 2012, which, once again, is likely due to the stormy acquisition of Aerex. The quarterly data for the EPS figures is much stronger, showing gains of 66.10% and 183.89% in the last two quarters; this suggests that the company is beginning to recover from the minor contraction over the last several years, and the Dynalect team will be paying close attention to the next report to see if this continues.

Miscellaneous Data and Ratings

| | |
|-----------------------------------|---------|
| Zack's Rank | 2 (Buy) |
| Average Stock Price Target | \$15.00 |
| Return on Equity | 2.73 |
| Danaher ROE | 9.22 |

The Zack's rank for Consolidated Water is 2 likely due to the fact that the company has experienced a minor contraction over the last several years, but is now showing signs of recovering and growing moving forward through the medium term. From a business development point of view, Consolidated Water is currently building a \$488 million reverse osmosis plant in Mexico, which, once completed will be the largest reverse osmosis plant in the world. The plant is expected to generate revenues of more than \$54 million, which will have a very significant impact on Consolidated Water's bottom line.

Consolidated Water is also very competitive in the Bahamas and has exclusive rights to develop water treatment plants in Belize; both of these opportunities strengthen the case for Consolidated Water growing significantly moving forward.

Final Word

Ultimately, Consolidated Water seems like an enticing investment opportunity due to the fact that it has underperformed in recent years, but now appears to be recovering and looking to a stronger future. The upside of this company is potentially significant, especially as they complete the massive plant they are building in Mexico and take advantage of their market opportunities elsewhere in Latin America.

Combining the economic upside of Consolidated Water with their strong connection to the clean water industry and their leadership role in reverse osmosis technology produces a strong case to include this company in the Dynalect portfolio. Look for it there in the coming weeks!

IDEXX Corporation (NASDAQ: IDXX)

IDEXX laboratories designs, produces, and distributes a variety of goods and services geared towards industries related to companion animal veterinary work, livestock and poultry, water testing, and dairy markets. The company is based out of Westbrook, Maine, but operates on a global scale. The water-testing branch of the company focuses on developing and distributing products that help to measure microbiological activity in the water.

General Financial Information (as of 05/24/2017)

| | |
|----------------------------------|---|
| Fiscal Year (Current F17) | January 1 st – December 31 st |
| Current Stock Price | \$164.60 |
| Next Earnings Report | 07/27/2017 |
| P/E Ratio | 60.74 |
| Henry Schein P/E Ratio | 27.60 |
| NEOG P/E Ratio | 57.43 |

Sales and Revenue

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Sales/Revenue | 1,775 | 1,602 | 1,486 | 1,377 | 1,293 |
| Growth | 10.83% | 7.81% | 7.90% | 6.47% | N/A |

The sales and revenue data shows very strong and consistent growth moving through the past five years. This signifies that the company could have significant upside potential in the coming years as the growth figures continue into the future.

It is a little worrisome that the P/E ratio of IDEXX is 60.74. The company is currently trading at a much higher multiple than many of its competitors which signals that it could be overvalued and susceptible to a major correction in the near future. Such a correction could render the stock more affordable and reflective of the actual value within the company. The Dynalect team will be watching closely for the IDEXX stock to return to a more typical P/E ratio before entering a long position.

Gross Income and Profit Margin

| <i>\$,000,000</i> | 2016 | 2015 | 2014 | 2013 | 2012 |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Gross Income | 972 | 869 | 812 | 753 | 693 |
| Gro. Inc. Growth | 11.78% | 7.03% | 7.92% | 8.57% | N/A |
| Gross Profit Margin | 54.74% | 54.23% | 54.64% | 54.68% | 53.60% |
| Prof. Marg. Growth | 0.94% | -0.75% | -0.07% | 2.01% | N/A |

The gross income and profit margin data paints a similar picture as the revenue data. The company has had 5 consecutive years of growth since 2012, which shows effective leadership, conservative financial decision-making, and a keen understanding of the market they operate in and the opportunities that exist within it.

The profit margin of IDEXX Corporation has been relatively stable over the past five years. There were small dips in 2014 and 2015, but are almost negligible in size. The small improvements in profit margin that the company has been able to make show that the company is becoming more efficient in their operations, albeit gradually and somewhat inconsistently.

Earnings Per Share

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| EPS (Basic) | 2.44 | 2.05 | 1.79 | 1.74 | 1.59 |
| EPS Growth | 19.02% | 14.53% | 2.87% | 9.62% | N/A |

The earnings per share data is clearly strong. Especially moving through the past two years, the company has posted impressive growth in EPS, which has fueled bullish price movements in the stock. The Dynalect team will look for sustained performance in this measure, combined with a return to trading at a more reasonable earnings multiple before moving to purchase this stock.

Miscellaneous Data and Ratings & Final Word

| | |
|-----------------------------------|----------|
| Zack's Rank | 2 (Buy) |
| Average Stock Price Target | \$162.40 |

The Zack's rank of 2 captures the allure of the impressive financial data posted by IDEXX over the past 5 years. The company is performing very well, and is likely poised to continue to do so in the medium term.

The average stock price target is consistent with our opinion of current overvaluation. Most analysts are suggesting that the stock has peaked out at its short term high, and is likely poised to start coming back down in the near future. Dynalect is standing by with cash in hand for whenever this finally happens!

ETF Options Analysis

Within the clean water industry, there are several ETF opportunities for investors who are looking to gain exposure to a diverse range of companies. Most of these ETFs are built to track specific indices, some of which measure water industry performance domestically (in the United States), and others that are more focused on a global market. Given that the clean water industry is so complex and multi-faceted, the team here at Dynalect plans to seriously consider utilizing ETFs as a way to invest in this industry, and suggest that you consider the same based on the following information:

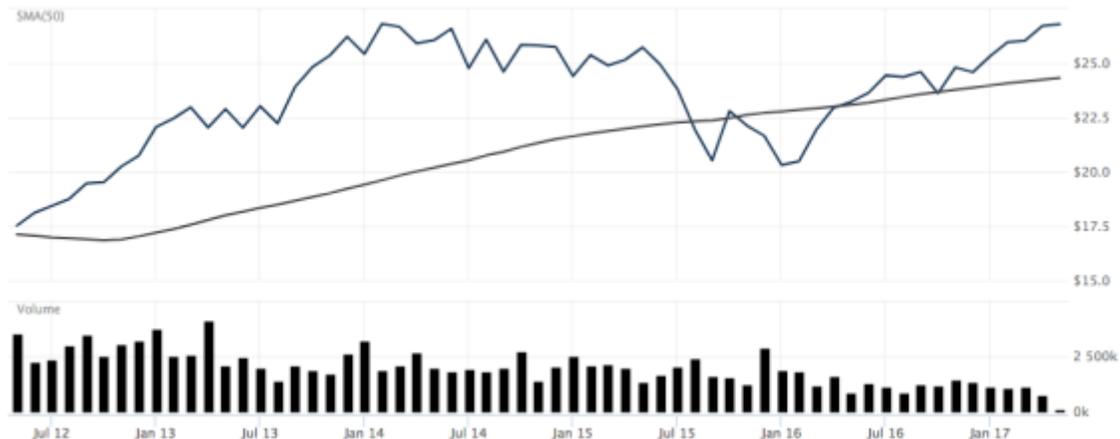
PowerShares Water Resource Portfolio (NASDAQ: PHO)

Fee: 0.61% | [Holdings: 39](#) | Total Managed Assets: \$797m | Price: \$26.79

The PowerShares Water Resource Portfolio ETF focuses on companies that pursue business related to “conserving and purifying water for homes, business, and industries.” It is designed to reflect the [NASDAQ OMX US Water Index](#), which seeks to track exclusively US based companies. Ergo, this ETF is not well positioned to profit from growth in the water industry abroad, which could deal a significant blow to its ability to profit from the growing importance of clean water globally. The ETF weights companies in its portfolio according to volume in order to maintain high liquidity for investors.

The NASDAQ OMX US Water Index was created in 2011 with a value of 1,000, and currently reflects a value of 1,470.99. The index, and consequently the PHO ETF, followed the market down in a significant correction in the middle of 2015. PHO was hit especially hard as the market reacted sharply to disappointing earnings reports from some of its largest holdings such as HD Supply Holdings (NASDAQ: HDS).

Figure 1: PowerShares Water Resource ETF



Guggenheim S&P Global Water Index ETF (NYSEARCA: CGW)

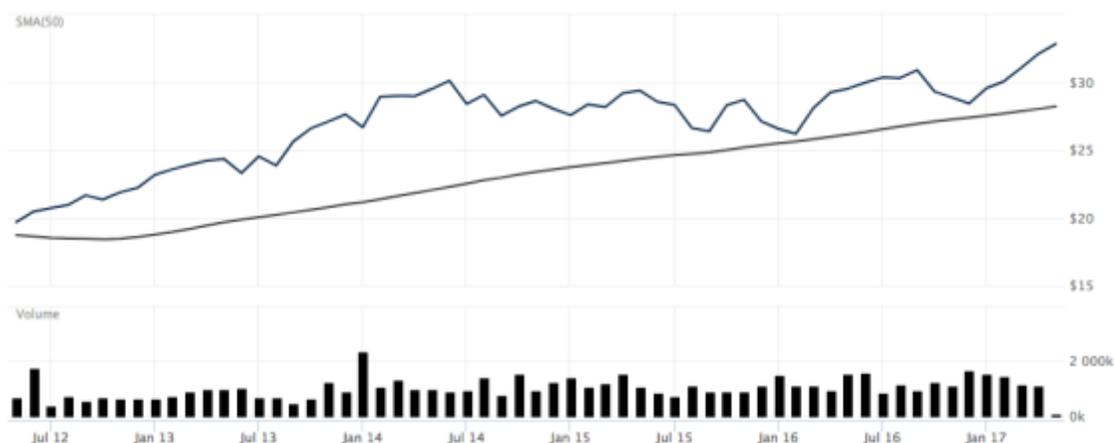
Fee: 0.64% | [Holdings](#): 53 | Total Managed Assets: \$558m | Price: \$32.70

The Guggenheim S&P Global Water Index ETF attempts to adhere to the S&P Global Water Index, which tracks 50 securities that are divided into two distinct groups: 1. Water Utilities and Infrastructure, and 2. Water Equipment and Materials. The ETF has holdings from across the globe, with only slightly more than 44% of the portfolio being made up of American companies.

The S&P Global Water Index was launched in 2007 and has had pretty abysmal performance over the past several years, returning a little more than 10% over the past 5 years, and a little more than 3% over the past 5 years. The ETF has done considerably better than this, but still hasn't performed especially well in the long term, returning only about 67% over the past five years compared to the S&P (up roughly 83% over five years).

The interesting part of the Guggenheim ETF from our point of view is that it holds a considerably different portfolio from all of the other ETFs. Their portfolio can be found [here](#). Having a diverse array of assets is a good strategy, when it comes to the clean water industry, and it is worth considering adding CGW to your portfolio for this reason.

Figure 2: Guggenheim S&P Global Water Index ETF



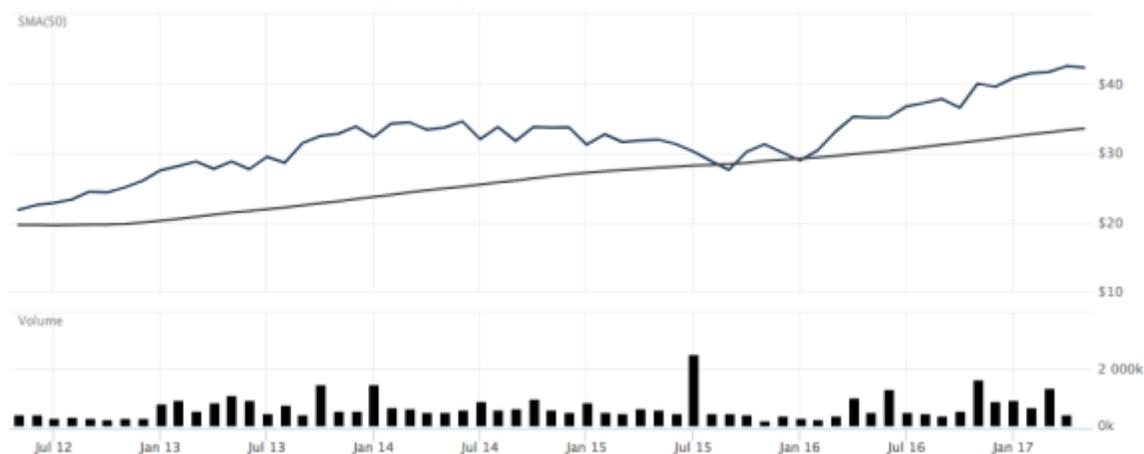
First Trust Water ETF (NYSEARCA: FIW)

Fee: 0.57% | [Holdings](#): 37 | Total Managed Assets: \$236m | Price: \$42.31

The First Trust Water ETF seeks to generally track the [International Securities Exchange Water Index](#), which is similar to the NASDAQ OMX US Water Index, but focuses on more of a global market instead of just the United States. The First Trust Water ETF itself, although seeking to track an international index, only includes domestic (US based) companies. The FIW ETF differs from PHO in that it weights its holdings according to market capitalization instead of trading volume. This creates a more balanced portfolio; for example consider that the top holding in the PHO ETF is weighted at approximately 8%, whereas the top holding of the FIW ETF is weighted at 4%.

Due to the balanced nature of the FIW portfolio, it experienced a dip in value during the 2015 correction, but not nearly as much as PHO. FIW also does not include some of the biggest losers from 2015 in their portfolio in the same way as PHO. The FIW ETF has outperformed all of the other major clean water ETFs over the past several years, and is likely poised to continue doing so moving forward (See **Figure 5** at the end of this section).

Figure 3: First Trust Water ETF



Summit Water Infrastructure Multifactor ETF (NYSEARCA: WTRX)

Fee: 0.80% | [Holdings](#): 48 | Total Managed Assets: \$4.4m | Price: \$29.81

Summit Water Infrastructure Multifactor ETF is the newest, and arguably the most sophisticated, EFT being presented here. It was created only in late 2016, and therefore does not have enough data to properly evaluate its historical performance. The Summit Water ETF also manages a relatively small amount of assets and has relatively low trading volume on a daily basis; both of these things are likely to improve as the ETF matures and develops more of a history.

Instead of weighting companies by either liquidity or market capitalization, the Summit Water ETF tracks the [Summit Water Index](#), which is designed evaluate securities based on 3 different factors, which are different for companies that fall into the “Water Utilities” vs. the “Water Industrials” categories.

For water utility companies, the three factors are:

1. Price to Earnings Ratio
2. Enterprise Value / EBITDA
3. Return on Equity (ROE)

For water industry companies, the three factors are:

1. Price to Earnings Ratio
2. Gross Margin — measures profitability relative to other similar companies.
3. Return on Invested Capital (ROIC)

The Summit Water ETF is also the only ETF mentioned here that actually has international holdings, which could give it a competitive advantage over all the others due to the global nature of the predicted clean water crisis.

Figure 4: Summit Water Infrastructure Multifactor ETF



Further Charts and Information

Figure 5: Major Clean Water ETF Historical Performance

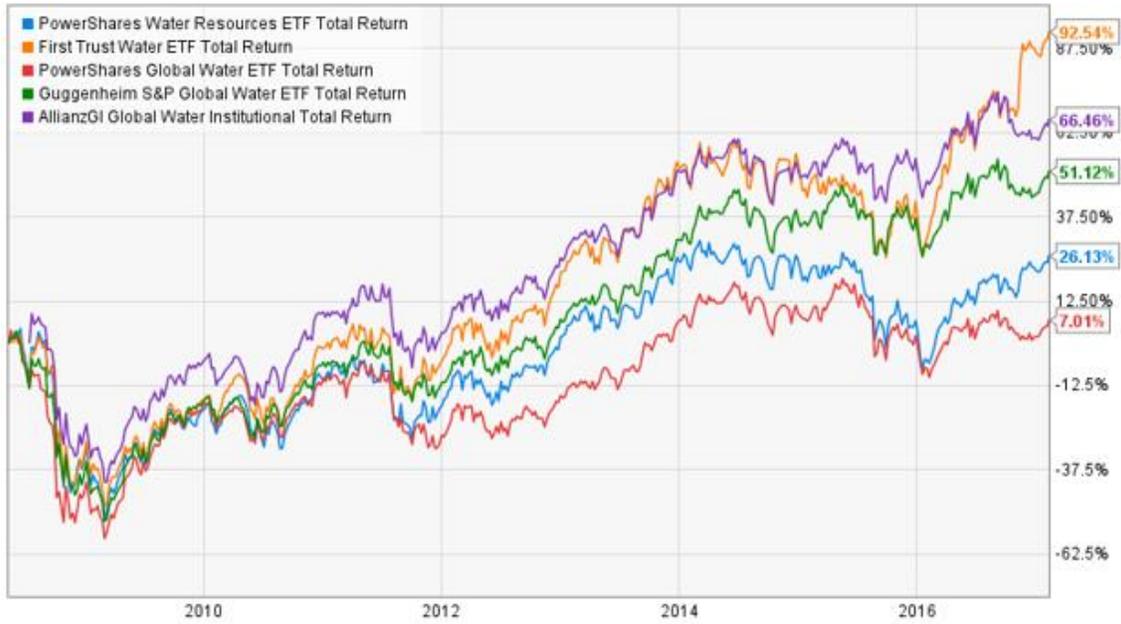
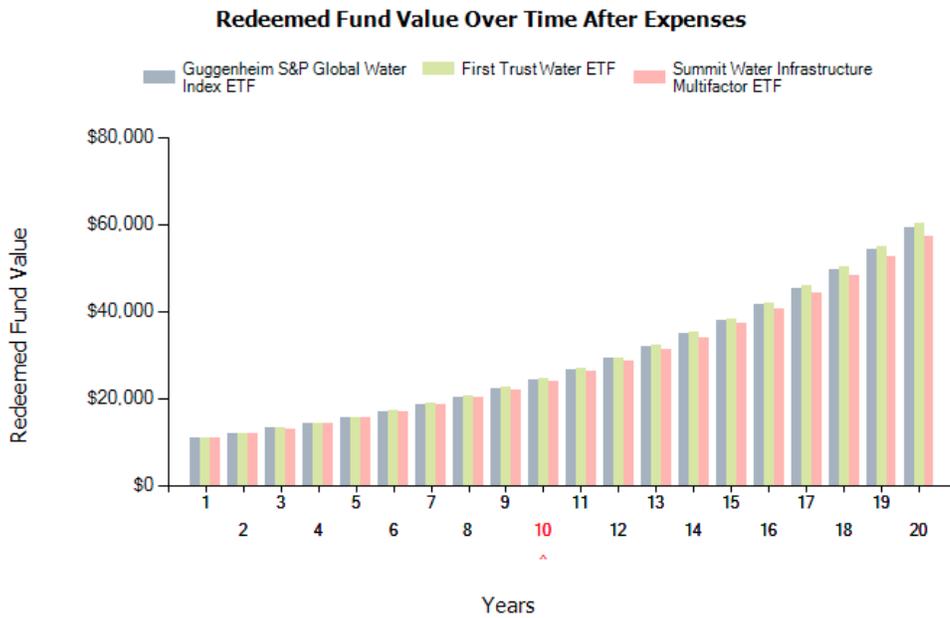


Figure 6: Expense Analysis of CGW, FIW, and WTRX ETFs
(Data taken from [FINRA Fund Analyzer](#))*



APPENDIX B — TECHNICAL OVERVIEW

There's a wide range of techniques used in water purification, all with their own pros and cons. In this report, we'll be discussing the purification methods used to make water safe for human consumption. There are many standards to measure water purity, depending on what purpose it is being used for; for example, water used in chemical processes must meet an entirely different standard than water being used for medicine. The main goal of purification is to remove biological, chemical, and physical contaminants such as bacteria, toxic metals, or salt. We'll outline some of the more popular means of purification below:

Distillation:

Distillation is one of the more well-known filtration methods; in this method, the water is purified by boiling it and then collecting and condensing the steam. This process is capable of removing many contaminants, but anything that has a boiling point below that of water (certain types of pesticides and herbicides) can travel with the steam and will remain in the purified product. Distilled water is frequently used in medical and scientific research, chemical industrial processes, and drinking.

Reverse osmosis:

Reverse osmosis is one of the most effective ways of removing a large range of contaminants. Water is pushed through a membrane that only allows water molecules to pass. This filters out nearly all contaminants, including dissolved substances. Its one main downside is that the process can be relatively slow.

Carbon filtration:

Carbon has pores, which are essentially tiny holes, throughout its structure. Carbon filtration works by filtering out contaminants that are too big to pass through these pores in the carbon. This method can remove chlorine, gases, and sometimes microorganisms. Depending on the quality of the filter, it can also remove lead, asbestos, and coliform.

Ultraviolet (UV) radiation:

UV light is used as a supplement to many filtration processes to kill bacteria. However, UV radiation is unable to filter out any non-living contaminants.

Additionally, new techniques are constantly being researched in order to find cheaper, faster, and more efficient ways of making water safe for human consumption. One particularly interesting technology is carbon nanotube membranes. [Carbon nanotube membranes](#) are membranes made up of microscopic tubes that only allow the passage of water molecules. These membranes are also self-cleaning, which drastically improves their lifetime.

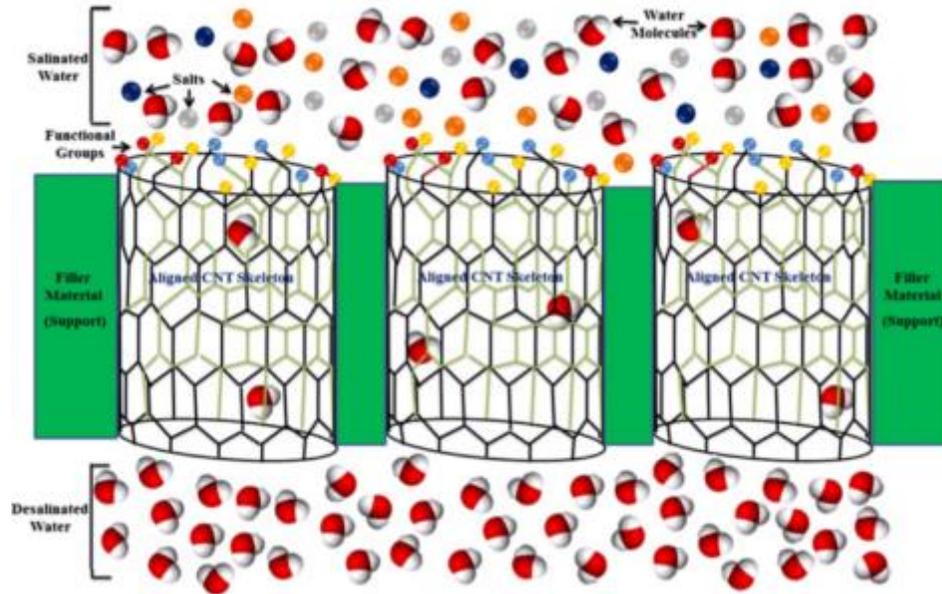


Illustration of the cross section of a carbon nanotube membrane
Image courtesy of: <https://doi.org/10.1016/j.desal.2013.12.026>

The downside to this technology is that it requires relatively high pressures and energy to be run at a reasonable pace, so as research into improving the efficiency of carbon nanotube membranes continues, their popularity in water purification is expected to increase.