Trickle Research

Every raging river, every great lake, every deep blue sea starts … with a trickle

Price Target Upgrade

Cavitation Technologies, Inc.

Cavitation Technologies, Inc.

(OTC: CVAT)

(www.ctinanotech.com)

Report Date: 01/03/22

12- 24 month Price Target: *$.30

Allocation: 5

Closing Stock Price at Initiation (Closing Px: 08/21/19): $.0325

Closing Stock Price at Allocation Upgrade Date (Closing Px: 02/01/21): $.034

Closing Stock Price at Price Target Upgrade (Closing Px: 07/21/21): $.068

Closing Stock Price at This Target Upgrade (Closing Px: 12/31/21): $.096

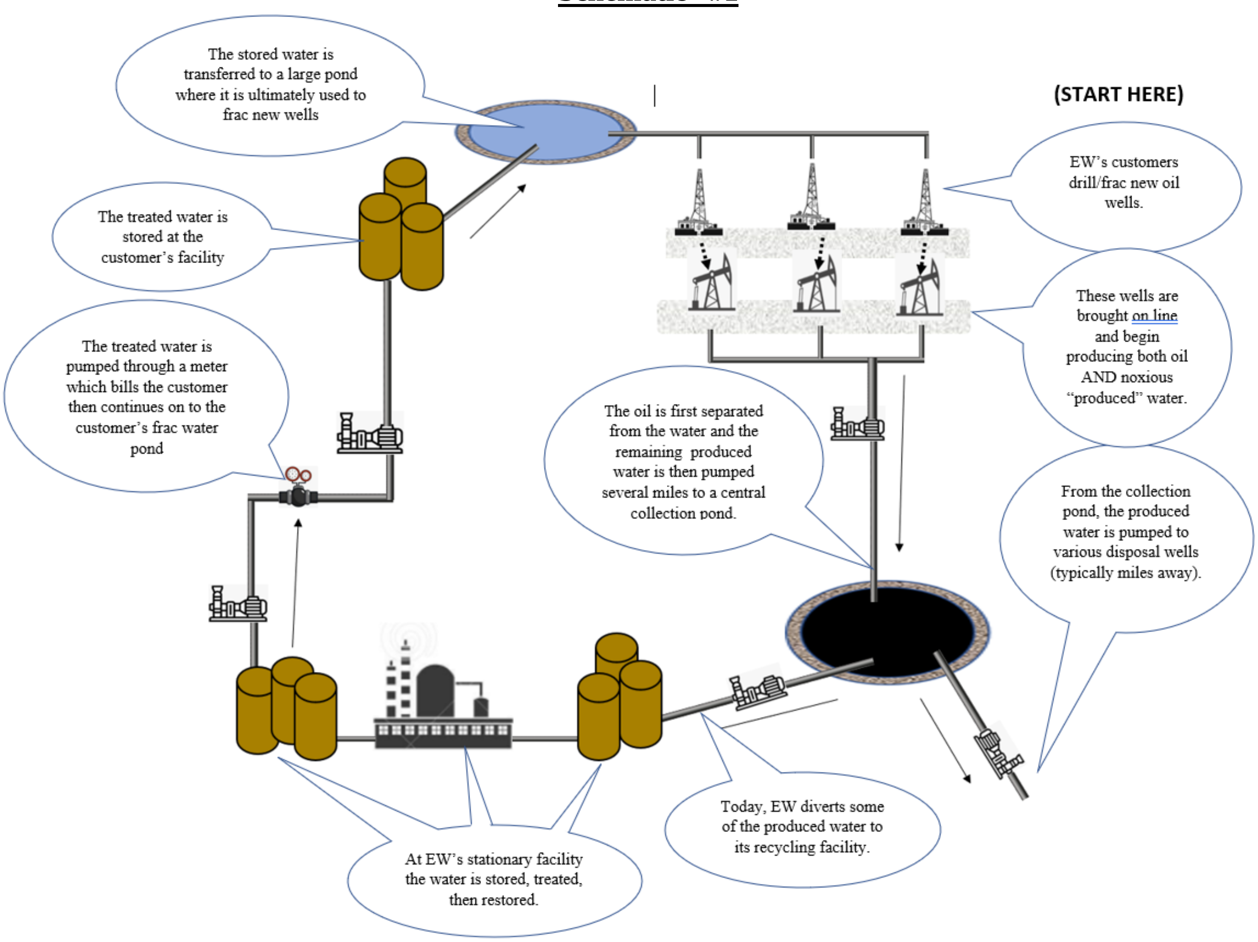
Prepared By:
David L. Lavigne
Senior Analyst, Managing Partner
Trickle Research

Disclosure: Portions of this report are excerpted from Cavitation Technology Inc.'s filings, website(s), presentations or other public collateral. We have attempted to identify those excerpts by *italicizing* them in the text.

We spent a day touring Enviro Watertek's ("EW") Permian Basin water treatment facility near Jal, New Mexico, so we thought an update might be constructive. Recall, EW is a joint venture between Cavitation and Jal based Delaware Water. To refresh, Delaware Water is owned and operated by Gregg Fulfer, who has operated water services in the basin for the better part of the past two decades and has developed an elegant solution for the treatment of produced water that can be reused in the fracking process, thus reducing the need for fresh water. The process, which includes Cavitation's patented LPN cavitation system, is (atypically) largely chemical free, which contributes to its low-cost attributes as well as its better environmental profile. Further, as we will delineate, Delaware Water's footprint in the basin is in our view uniquely positioned to provide opportunities for the new technology in an industry that is generally skeptical about new water treatment systems because frankly, many of them have proven to be unviable. To be clear, in our view, Delaware's physical presence in the basin (as well as its associated relationships) is a salient part of this story, and we believe it will provide a much quicker path to adoption (again in an industry that is generally skeptical about water technologies) than would be possible without it.

First, we have provided a (rough) diagram to try to illustrate the EW process and how it fits into Delaware's footprint as well as into their customer's water processes. The ability to see this work has provided us with a much better understanding of the opportunity, so our hope is that it will provide readers with the same. Cavitation management was on-site with us as well, and they were taking pictures so we suspect they may provide a presentation with better graphics, but again, we think this may help clear up some questions we had so we assume others may have as well.

Schematic #1



Again for reference, the next few pages include photos we took from the site visit that can be referenced back to the diagram above:

The photo below is of EW's water customer's drilling operations. Keep in mind, most of these wells are drilled horizontally and may extend two miles from the surface drill site. As such, some of the wells in the area will use ***between 1 million and 2 million barrels of water on a single frac****.*

Just to edify, once the wells are put online, they are relatively discrete. That said, from here they are yielding oil (and perhaps gas) as well as produced water. In the Permian Basin, these wells typically produce 4X to 8X barrels of water for each barrel of oil creating a large disposal problem.

Here again, just to illustrate the point, much of both the frac water and the produced water in the basin is transported via miles of pipe, a portion of which is laid above ground. We would add that patchwork of piping is subject to easements etc. and other permission from landowners and/or regulators (BLM for instance) that can impact where/how it can be laid.

As we illustrated above, the produced water from producing wells typically ends up in disposal wells. In most instances, the produced water is first pumped to a central pond. From that pond, the water can be directed/allocated to individual disposal wells. As we also noted above, as a result of an agreement that Delaware Water has with a local water disposal company, EW is able to access water in this particular pond and divert it to their stationary facility where they can treat it and return it to customer(s) to use as frac water.

Today EW pumps produced water several miles from the pond above to their stationary facility several miles away. Once it arrives at the facility, it is stored in the tanks below and eventually introduced into their proprietary cleaning system.

From the onsite storage tanks, the produced water makes its way into EW's recycling system starting with the blue tank below referred to as a DAF (Dissolved Air Flotation system). The inset picture below shows the top of the DAF, which is separated into stages which the water flows through. This stage of the process includes some of Delaware Water's proprietary technology. Once treated here, the water flows to the middle filtering/finishing unit shown below, which houses, among other things, Cavitation's patented reactor. This particular unit, while installed onsite and is currently operating, is actually the first portable unit.

The photos below reflect the "interworkings" of the two storage units pictured above. This is the final filtering/finishing step of the process and includes the Cavitation reactor. The inset photo on the lower right is of the second storage unit, which houses the controls to the system. This "control center" montiors each portion of the system and can identify and in some cases rectify/recalibrate anomolies. It is completely accessible via remote montoring as well. Once the recycled water leaves this portion of the process, it is stored in the tanks in the next photo.

As we noted, the prior photos are of the first portable unit, however, the original unit was the stationary system pictured below and is housed inside one of Delaware's buildings. These units include the old Cavitation reactor technology so they are capable of only about ½ the through-put of the newer portable units. We believe this stationary unit will likely be upgraded with the new Cavitation technology which should increase the throughput. The first picture below is of the (white) DAF, and the water then flows into the finishing unit inside the building.

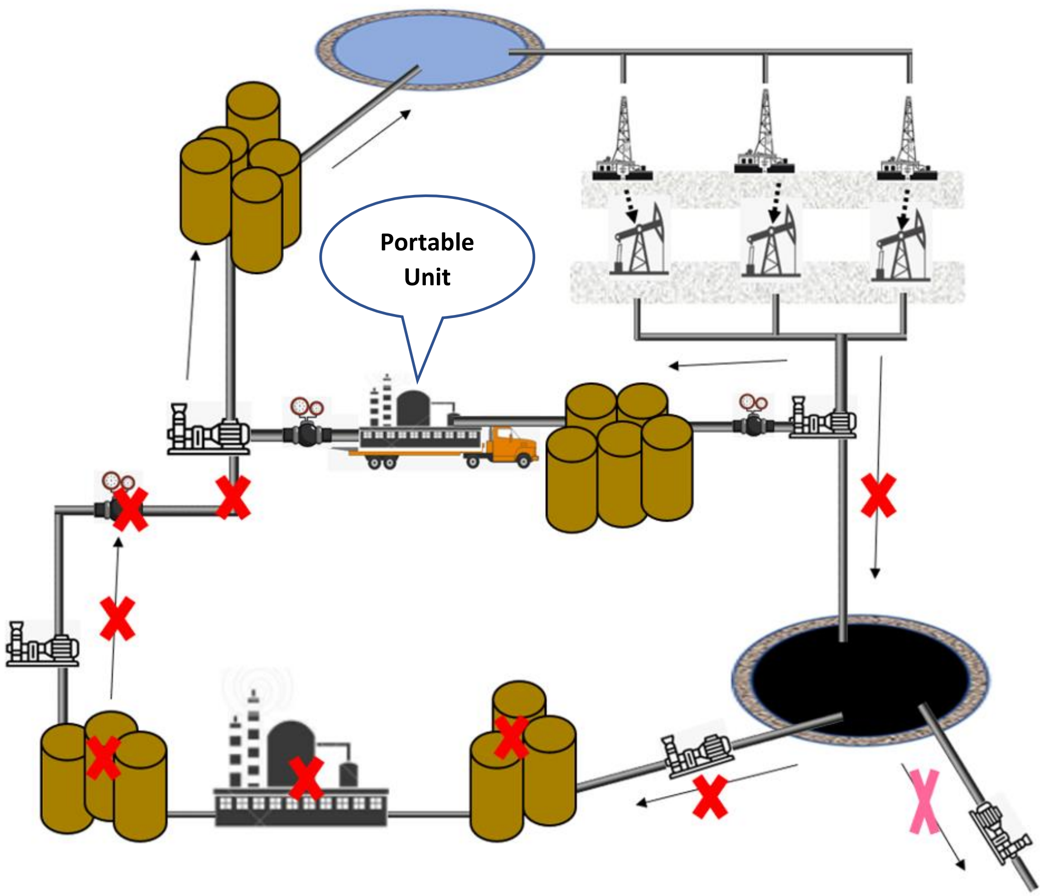
The treated water from both the stationary platform and the portable platform is then transported to these storage tanks. From there it is shipped off to customers for storage in the frac water tanks/ponds on their drill sites.

The water that leaves EW's facility flows through this central meter, which measures the water delivered to the specific customer and then provides a basis for billing.

Lastly, the picture below is of the second portable unit. Some who are familiar with the Cavitation story have inquired about this unit. This unit is currently not in service because they are waiting to deploy the system in the field. For a variety of reasons, being able to deploy these units closer to the customer's drill project provides a number of advantages and opportunities. We will discuss those further in a subsequent schematic below.

In conjunction with the last picture above of the second (yet to be deployed) portable unit, we have recast our Scematic #1 of the process that we provided to start this update to reflect the advantages that a portable unit might provide to this process. Some added narrative is provide following this recast illustration:

Schematic #2



As Schematic #2 above suggests, there are a number of steps in the current process that a portable unit might be able to eliminate. Perhaps most notably, rather than pumping produced water to a central pond several miles away, the produced water could be diverted directly to the location of the portable units, ostensibly on or around a drill site. That would of course also potentially eliminate the need to pump cleaned frac ready water back over several miles from a central stationary treatment facility. Moreover, at the risk of perhaps getting ahead of ourselves, as we look at the above, it occurs to us that the portable units may ultimately position EW (and Cavitation by extension) to charge customers not only for the delivery of treated water, but also for the disposal (or in this case the recycling) of produced water. In our view, the potential for EW (and again by extension Cavitation) to potentially collect fees for the "disposal" of produced water, is a marked open ended opportunity. That said, here are a few other things to consider with respect to our site visit.

First, EW currently has a customer in the basin that they are providing recycled water to. As we illustrated above, they are delivering that water to the customer's frac pool, which the customer is then using to frac new wells. We provided a picture (above) of the rigs currently drilling on that site. Recognize, operators may put as many as 20 wells on a single pad and each well may require 1 million to as much as 2 million barrels of oil to frac a single well. To put that into perspective, we estimate a single portable EW system can process approximately 17,000 Bbls of water per day (although as we understand it, they have been experiencing periodic rates closer to 20,000). Regardless, if we discount the production for likely downtime etc, 15,000 Bbls per day equates to about 450,000 Bbls per month. That means it would take 2 to 4 EW systems to generate enough water in *one month, to frac a single new well*. Again, for perspective, industry data suggest that in the Permian Basin today, it takes approximately 2 weeks to drill a well, which means that at a minimum, if their current customer drilled one well at a time (as our picture above illustrates, that is an understatement), their customer would need somewhere between 2 and 4 million barrels of water per month, which would require 4 and 8 EW units to provide that much water. We know EW currently has two portable units, and we believe they can upgrade the existing stationary unit, which would bring them to 3+ units. Given our discussions, we believe EW's current customer would readily take between 250,000 and 300,000 Bbls of water per day if EW could provide it, which would translate into enough water to drill one well every 4 or 5 days. EW would need between 15 and 20 units to deliver that much water. We would add, we think processing 250,000 barrels of water per day would yield approximately $150,000 per day of gross revenue, or around $45-$55 million per year (again making some assumptions about utilization).

Second, as we alluded to above in Schematic #2, we think the portable units may open a door to allow EW to potentially capture water disposal fees as well. We submit, there is some nuance to this that we are unclear about because frankly, it concerns some competitive issues that people are not comfortable talking about right now. On the other hand, as the schematic reflects, the portable units on site will be diverting produced water that would otherwise end up in a disposal well, and *someone* is getting paid to do that. However, to extend the hypothetical, we think that iteration is possible, and it would likely have the potential to double the gross revenues associated with *just* delivering frac water. We would add, as we will delineate below, the industry has a mounting produced water disposal problem and EW may have a solution for at least some of that, which we think could be a significant value driver in the future.

Third, while we think EW is positioned to grow the business with its current customer, there is clearly opportunity for them to seek other customers in the basin as well. As we have noted in the past, Cavitation's partner in EW is Delaware Water, which has a long operating history as well as associated relationships throughout the basin, especially in New Mexico. T edify, when operating at full tilt, the Permian Basin produces massive amounts of produced water, and in turn uses correspondingly large amounts of frac water. More specifically, according to the U.S. Energy Information Administration in New Mexico (which represents a small portion of the production in the entire Permian Basin) total oil production for the first 10 months of 2021 equaled 373.5 million barrels of oil. Based on that average production, full year 2021 production would be 449 million barrels. However, if we assume the October production of 41 million barrels, that would come to an annual run rate of roughly 500 million barrels of oil. Recall, the basin generally produces between 4 and 8 barrels of water for each barrel of oil, if we assume the low end of that estimate, that should result in roughly 4X that amount of produced water, or about 2 billion barrels. Further, to reiterate, if one EW unit can clean 15,000 Bbls per day on average, that implies annual barrels of roughly 5.4 million barrels. In that case, it would take between 350 and 400 EW units to clean the annual produced water in New Mexico. Put another way, that recycled produced water could frac between 1,000 and 2,000 wells. As a point of reference, according to the New Mexico Oil and Gas Association, there were 1450 wells drilled in New Mexico in 2021, so those number tie pretty closely**. (To edify, if we assume 8 barrels of water for each barrel of oil rather than 4, these numbers would be twice these amounts).** Further, our expectation is that both oil production and wells drilled are more likely to be higher in 2022 than in 2021. To reiterate the point, while we certainly believe EW could treat water in the Texas portion of the Basin, we think the addressable market in New Mexico looks something like 350 to 400+ EW units, and in dollar figures, something around $1.2 billion for providing frac water alone. Extending the notion, The Energy Information Administration indicates that the entire basin produced 4.96 million barrels of oil a day in December. That would suggest an annual run rate of 1.8 billion barrels of oil and 7.2 billion barrels of produced water (at 4X per barrel). Those numbers suggest that the addressable market we estimated for New Mexico alone represents just 27% of the entire basin.

Fourth, in our view there is an emerging issue in the domestic oil patch that is beginning to look like a gathering storm. Illuminating the point, the following is an excerpt from a recent Reuters article: (Latest quake in top U.S. oilfield to hike scrutiny of drilling waste injections | Reuters)

> ***Dec 28 (2021)*** *(Reuters) - A magnitude 4.5 earthquake that rattled the Permian basin in Texas on Monday night is likely to add pressure on oil producers in the region to slow or stop underground wastewater injections that regulators believe may cause the tremors.*
>
> *The quake, the third-largest to hit Texas this decade, occurred near Stanton and was the latest in a surge of temblors linked to the disposal of wastewater, a byproduct of oil and gas production. Wastewater injection can trigger quakes by changing pressures around fault lines. It also comes shortly after the state Railroad Commission, which regulates its oil industry, halted the injection of water into deep wells in an area northwest of Midland amid the jump in seismicity. The Commission on Tuesday said it had been in contact with disposal well operators in the affected area of the Permian and was sending inspectors to the facilities.*
>
> *Monday's earthquake occurred in an area already under investigation by the Commission for increasing seismicity. A suspension of injections around its epicenter could impact some 18 active wells that dispose an average of 9,600 bpd each, according to water data and analytics firm B3 Insight.*
>
> *The affected area "has a higher utilization of deep disposal - about 50% higher - than other areas in the Permian basin," said Kelly Bennett, CEO of B3. Permian oil operators are already looking for ways to reduce wastewater injections after the oil regulator began imposing limits. Solutions include recycling the wastewater or trucking it elsewhere.*
>
> *"If they're not able to do that, they may have no other choice but to shut these wells and choke production," said Thomas Jacob, vice president of oilfield services research for consultancy Rystad, adding that halting production was a last resort.*

To put the issue further into context, according to data from the U.S. Geological Survey (USGS) the area along the Texas-New Mexico border in the Permian Basin, experienced 422 earthquakes of magnitude 2.5 or higher in 2021. The data also reflected 22 in November alone.

By comparison, in 2020, the USGS reported 209 quakes and just 51 in 2019. Further, in 2018, the USGS database noted 16 magnitude 2.5 or greater quakes and only 4 in 2017. The acceleration of these events is closely correlated with the growth of production (and more specifically, produced water disposal) in the Permian Basin. To be clear, there is no shortage of information regarding growing regulatory concerns over the disposal of produced water as it pertains to increased seismic activity and the environment in general. Moreover, there are also mounting concerns over the growing use of fresh water being diverted to the oil and gas industry and these concerns collectively pose potential threats to the continued growth of the industry across the basin.

Of course, the flip side to the above concerns includes the substantial economic role that oil and gas plays in the region, in terms of employment, state revenues and other associated contributions. Specifically, *the New Mexico Oil and Gas Association (NMOGA) published its latest revenue figures for fiscal year 2021, running from July 1, 2020 and noted that 35 percent of the State's general fund came directly from the oil and gas industry. Moreover, the latest U.S. census report notes that New Mexico is in the top three poorest stats in the U.S.*

Considering the two realities above, New Mexico is in our view between a bit of a rock and a hard spot when it comes to their oil and gas industry. While its economic impact is substantial, the industry's environmental footprint is expanding, especially when it comes to water. In short, we think EW may be able to play a measurable role in a addressing their dilemma with a water solution that works, is scalable *and* is cost effective. In our view, if EW could do little more than exploit its current posture with its existing customer, it would likely provide a contribution to CVAT that we believe speaks to prices commensurate with our (new) price target. That said, we believe the story remains quite open-ended and we see the potential for the EW opportunity to provide for valuations that are multiples of the current stock price. However, as a caveat to our enthusiasm, while certainly oil prices and their impact on Permian production will remain a cogent systematic risk, as counterintuitive as it may sound given EW's solution, we believe the aforementioned growing concerns around produced water disposal pose a risk to the industry's growth as well. While that issue may ultimately prove fortuitous for EW/Cavitation on some levels, anything that negatively impacts the industry would in our view pose risks to Cavitation's opportunities therein as well. That is part of the reason that we believe EW should move quickly to deploy more units, which brings us to our final point.

Lastly, while as we said, we believe EW's posture with its existing customer as it pertains to Cavitation supports our current target, recognize, *that* is predicated on the addition of another 10 or 12 portable units that do not exist today. We believe Cavitation and Delaware Water managements are considering a variety of capital strategies to expedite the buildout of those units. To that end, while as a matter of full disclosure, we have provided some help/suggestions regarding avenues that we think they could pursue, as of this writing, we do not believe they have arrived at a definitive decision regarding how that might work. We would add, it is our view that, while it may take them more time to add new units to the field, they could/may decide to fund those units internally (which we also think they *could* do). If they choose that avenue, our model will likely prove aggressive in the near term as (again) it assumes the addition of approximately 10 units through calendar 2022, which they could likely not achieve organically. That said, while we do not claim to have good specific visibility with respect to the rollout of another 10+ units, we do feel comfortable sharing that our site visit has provided better visibility in general, and more specifically regarding the potential afforded by their first customer, which we think will prove to be a valuable reference customer as well. Further, as a result of our perceived visibility in that regard, we are establishing a new 12-24 month price target of *$.30 and we are maintaining our allocation for the time being.

Projected Operating Model

Cavitation Technology, Inc.						
Projected Operating Model						
Prepared by Trickle Research						
	(actual)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)
	9/30/21	**12/31/21**	**3/31/22**	**6/30/22**	**Fiscal 2022**	**Fiscal 2023**
Income Statement						
Revenue	$ 551,000	$ 553,000	$ 785,125	$ 1,734,760	$ 3,623,885	$ 11,250,014
Cost of revenue	$ 23,000	$ 36,120	$ 45,405	$ 83,390	$ 187,915	$ 506,001
Gross profit	$ 528,000	$ 516,880	$ 739,720	$ 1,651,370	$ 3,435,969	$ 10,744,014
General and administrative expenses	$ 306,000	$ 352,650	$ 364,256	$ 411,738	$ 1,434,644	$ 1,862,501
Research and development expenses	$ -	$ 16,674	$ 20,916	$ 21,750	$ 59,339	$ 94,513
Total operating expenses	$ 306,000	$ 369,324	$ 385,172	$ 433,488	$ 1,493,984	$ 1,957,013
Gain (Loss) from Operations	$ 222,000	$ 147,556	$ 354,548	$ 1,217,882	$ 1,941,986	$ 8,787,000
Gain on settlement of debt	$ 104,000.00	$ -	$ -	$ -	$ 104,000.00	$ -
Other expense, net	$ -	$ -	$ -	$ -	$ -	$ -
Other income	$ (2,000)	$ -	$ -	$ -	$ (2,000)	$ -
Taxable Income	$ 324,000	$ 147,556	$ 354,548	$ 1,217,882	$ 2,043,986	$ 8,787,000
Income Tax Expense	$ -	$ -	$ -	$ -	$ -	$ 2,284,620
Net Gain (Loss)	$ 324,000	$ 147,556	$ 354,548	$ 1,217,882	$ 2,043,986	$ 6,502,380
Net Gain (Loss) per share, Basic	$ 0.00	$ 0.00	$ 0.00	$ 0.01	$ 0.009	$ 0.03
Net Gain (Loss) per share, Basic and Diluted	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.007	$ 0.02
Weighted average shares outstanding, Basic	218,906,958	220,339,229	220,339,229	220,339,229	219,981,161	220,339,229
Weighted average shares outstanding, Basic & Diluted	265,904,156	271,420,421	275,133,143	278,508,345	272,741,516	285,513,024

General Disclaimer:

Trickle Research LLC produces and publishes independent research, due diligence and analysis for the benefit of it investor base. Our publications are for information purposes only. Readers should review all available information on any company mentioned in our reports or updates, including, but not limited to, the company's annual report, quarterly report, press releases, as well as other regulatory filings. Trickle Research is not registered as a securities broker-dealer or an investment advisor either with the U.S. Securities and Exchange Commission or with any state securities regulatory authority. Readers should consult with their own independent tax, business and financial advisors with respect to any reported company. Trickle Research and/or its officers, investors and employees, and/or members of their families may have long/short positions in the securities mentioned in our research and analysis and may make purchases and/or sales for their own account of those securities. David Lavigne does not hold a position in Cavitation Technologies, Inc.

Trickle Research co-sponsors two microcap conferences each year. Trickle Research encourages its coverage companies to present at those conferences and Trickle charges them a fee to do so. Companies are under no obligation to present at these conferences.

Cavitation Technologies, Inc. has paid fees to present at investor conferences co-sponsored by Trickle Research.

Portions of this publication excerpted from company filings or other sources are noted in *italics* and referenced throughout the report.

Rating System Overview:

There are no letters in the rating system (Buy, Sell Hold), only numbers. The numbers range from 1 to 10, with 1 representing 1 "investment unit" (for my performance purposes, 1 "investment unit" equals $250) and 10 representing 10 investment units or $2,500. Obviously, a rating of 10 would suggest that I favor the stock (at respective/current levels) more than a stock with a rating of 1. As a guideline, here is a suggestion on how to use the allocation system.

Our belief at Trickle is that the best way to participate in the micro-cap/small cap space is by employing a diversified strategy. In simple terms, that means you are generally best off owning a number of issues rather than just two or three. To that point, our goal is to have at least 20 companies under coverage at any point in time, so let's use that as a guideline. Hypothetically, if you think you would like to commit $25,000 to buying micro-cap stocks, that would assume an investment of $1000 per stock (using the diversification approach we just mentioned, and the 20-stock coverage list we suggested and leaving some room to add to positions around allocation upgrades. We generally start initial coverage stocks with an allocation of 4. Thus, at $1000 invested per stock and a typical starting allocation of 4, your "investment unit" would be the same $250 we used in the example above. Thus, if we initiate a stock at a 4, you might consider putting $1000 into the position ($250 * 4). If we later raise the allocation to 6, you might consider adding two additional units or $500 to the position. If we then reduce the allocation from 6 to 4 you might consider selling whatever number of shares you purchased with 2 of the original 4 investment units. Again, this is just a suggestion as to how you might be able to use the allocation system to manage your portfolio.

For those attached to more traditional rating systems (Buy, Sell, Hold) we would submit the following guidelines.

A Trickle rating of 1 thru 3 would best correspond to a "Speculative Buy" although we would caution that a rating in that range should not assume that the stock is necessarily riskier than a stock with a higher rating. It may carry a lower rating because the stock is trading closer to a price target we are unwilling to raise at that point. This by the way applies to all of our ratings.

A Trickle rating of 4 thru 6 might best (although not perfectly) correspond to a standard "Buy" rating.

A Trickle rating of 7 thru 10 would best correspond to a "Strong Buy" however, ratings at the higher end of that range would indicate something that we deem as quite extraordinary..... an "Extreme Buy" if you will. You will not see a lot of these.