Shareholder Update Letter – September 2017

For those of you that are new to Bion, welcome. For potential investors, be advised – this letter is not a substitute for reviewing our press releases and SEC filings. Some of it is opinion – be sure to note the forward-looking statements disclosure at the end. It is produced to help put some of our complex world in context for our shareholders and keep them updated on political and other activities and events that do not rise to the level of a press release or SEC filing. If you have additional questions, you can reach me at cscott@biontech.com.

Greetings! It only seemed quiet over the last few months. Actually, much has happened…

We recently completed a patent filing on the third-generation technology (3G Tech) platform. This was a critical step that needed to be taken to protect important technology advancements that have been made over the last two years that we have not talked about publicly. The filing had to be completed before we could move forward with our application for organic certification of the byproducts, as well as perform final pilot studies described below. Both processes will put details of these recent advancements in the public domain. With the filing now made, we can move forward with these important initiatives and speak more openly about the technology.

In Pennsylvania, Senate Bill 799 was introduced in June. Sorry, we missed the mark on getting legislation moved by the end of June, but as the summer recess neared, budget issues prevailed. I guess I should know by now that politics, common sense, and especially timetables, don't always go together the way they should. That said, we are still highly confident that SB 799 will pass in this session, which starts up again in September and runs through December. Again, details both on PA and national policy are below.

As we move into Fall, I can honestly say that with almost 25 years of 'Bion experience' behind me, I have never been more encouraged by events or more optimistic about our opportunities for success. In my opinion, the combination of recent advances in understanding of the nutrient problem, as well as independent economic studies of alternative solutions, coupled with Bion's own technology advancements, put us in a 'pole position' as this opportunity unfolds. Even more important, I get a clear sense that the pace of progress – especially concerning changes in policy and strategy – has quickened dramatically.

Craig Scott
Director of Communications

Nutrient Runoff in the News

The recent news about our watersheds has not been good (unless perhaps you are a Bion shareholder). From the Great Lakes and Gulf of Mexico to lakes and rivers across the country, the nutrient problem is getting worse.

This year's dead zone in the Gulf of Mexico is a record-breaker. According to NatGeo in August, a "New Jersey-sized dead zone was measured by scientists in the Gulf of Mexico this week—a sign that water quality in U.S. waterways is worse than expected". The National Oceanic and Atmospheric Administration measured the dead zone 8,776 square miles, the largest since monitoring began 32 years ago. The average size of the Gulf's dead zone measured in at 5,309 square miles.

In 2015, the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, a coalition of federal, state and tribal agencies, pushed out to 2035 the goal of reducing the gulf's hypoxic zone to 1,950 square miles. In a study published in August in the Proceedings of the National Academy of Sciences, it was determined that to reach this goal would require a 59 percent reduction in nitrogen runoff to the Mississippi River. Nitrogen concentrations in the Mississippi have not declined since the 1980s, despite U.S. Farm Bill conservation spending of more than $28 billion in the 20 Basin states, since 1995.

"The bottom line is that we will never reach the action plan's goal of 1,950 square miles until more serious actions are taken to reduce the loss of Midwest fertilizers into the Mississippi River system," said University of Michigan aquatic ecologist Don Scavia, lead author of the paper. "Clearly something more or something different is needed," the report went on to say, "It is time to ask what is preventing more extensive implementation of some or all of these strategies." Indeed, that is a very good question.

In a separate peer-reviewed study, published in July's *Science*, it is predicted that increased rainfall due to climate change, could increase nitrogen runoff by 20 percent by 2100, with the strongest impacts occurring in the Corn Belt and in the Northeast. Researchers report that a one-third reduction in overall nitrogen input such as fertilizer use would be necessary to offset the increases.

In a case we have been following closely for quite some time, in April the U.S. Court of Appeals for the District of Columbia Circuit vacated a 2008 federal rule that generally exempted livestock facilities from administrative reporting requirements for the release of hazardous substances (ammonia) to the air from animal waste. This is a serious issue that the livestock industry is very concerned about; the livestock industry is acknowledged to be the largest source of ammonia in the country. These ammonia emissions lead to increased nutrient runoff, as well as the formation of PM2.5, small inhalable particulate matter that poses a serious health risk.

3G Technology Development

The patent filing in July was a 'continuation' of our September 2015 patent for a livestock ammonia recovery process that converts the ammonia into a stable nitrogen fertilizer product (ammonium bicarbonate). Since that patent was filed, we have discovered a better, more efficient way to extract and process the product. This filing provides broader protections that covers those advancements and dates back to the time of the original patent filing in 2015.

This is a good time to say that the ammonia recovery system has not yet been installed in a commercial operation. However, it utilizes existing evaporation and distillation process equipment, with decades of reliability and service history, that is customized for Bion's specific applications. Bion and its technology vendors are preparing final pilot studies to optimize recovery efficiencies, prior to an initial commercial scale installation.

All of this is important because we believe the ammonium bicarbonate we produce from livestock waste is going to prove to be a very valuable product. Since the product is processed from compounds that occur naturally in the waste stream, without adding chemicals, we believe it will qualify for certification for use in organic production. The organic industry-consultants we have retained to prepare our application for organic certification agree with this assessment. If we are correct, this is a very big deal. Organic certification will allow us to sell the product at considerably higher prices compared to markets for traditional fertilizers. We also believe the 'leftover' residual solids, which contain the remaining nitrogen, as

well as salts and minerals, can also be processed to qualify for organic use as a soil amendment product, depending on market values.

Our next step is to build a small pilot to determine final design to optimize recovery efficiencies, prior to a larger commercial installation. Also, the pilot will produce enough ammonium bicarbonate so that we can submit the organic application to OMRI, the Organic Materials Research Institute, as well as begin field trials with organic growers. We hope to make the organic application by the end of this year. We expect to begin development of the first commercial-scale 3G Tech platform, probably at Kreider Farms, in the first half of 2018.

Policy and Politics

Pennsylvania – The headline is that SB 799 was introduced in June. But it goes further than that. The narrative has changed in Pennsylvania – from an abstract discussion of Chesapeake Bay problems and potential costs, to one of Pennsylvania's own interior water quality issues and the realities of having to write large checks. First, note that the state is facing a $3 billion budget deficit through next summer, according to the state's nonpartisan Independent Fiscal Office. The spending side of the state budget, passed in July, included no new spending for the Chesapeake Bay. Remember, the Bay reboot plan calls for $378 million in new annual spending (which substantially underestimates the real cost for the plan). Not in the budget. Further, a number of small towns have recently learned from PA DEP that they face very high costs to install waste water treatment facilities to help to meet the Chesapeake Bay mandate.

And it IS a local/PA problem. The Bay issues are just the canary in the coal mine. A FOIA request recently revealed that 150 public drinking water facilities in Lancaster County must treat groundwater to remove nitrogen to meet drinking water standards – that's more than half of the total of 293 public drinking water sources in Pennsylvania that require such treatment – and up from 111 five years ago. And the problem exists in other counties: York (16), Lebanon (14), Franklin (12), Adams (6), Dauphin (3), Cumberland (3) also have facilities that must treat their water for nitrogen. Which begs the question, how many private wells are contaminated? And since there has been little to no discussion of this issue publicly, are the private wells even being tested for nitrates?

In April, US EPA sent a Letter of Expectation to the PA DEP, regarding the state's Chesapeake Bay obligations. Beside criticizing PA for its lack of progress, the Letter specifically encouraged the use of credit trading and competitive procurement to engage the private sector and lower costs, especially to offset the state's looming storm water mandates. This is another milestone – we think a big one. It is the first time the EPA has publicly supported competitive procurement and the use of trading to offset stormwater, which is the highest-cost option to reduce nitrogen. It indicates that we have accomplished our primary purpose in Pennsylvania, which was to demonstrate that livestock waste treatment could provide high-impact low-cost alternatives to our country's expensive and failing clean water strategy.

While the Letter was specific to PA, it is hard to fathom that EPA would not support the same approach for the Great Lakes and Gulf of Mexico, where upstream agriculture delivers an even greater percentage of the total nutrient load. If the strategies developed for the Chesapeake Bay evolve into a model for these watersheds, as we and others believe they will, it will affect 40 states and most of the production from America's 90 million cattle, 60 million swine, and 2 billion poultry. As we have said, the stakes are high. Here is a link to a copy of the letter that I have highlighted and posted on our website.

At the end of June, Senate Bill 799 was referred to the Pennsylvania Senate Environmental Resources and Energy Committee. This bill is different. First, it contains provisions to establish a funding source, that is independent of the state's budget. Second, the bill is less an environmental spending bill, and more a government reform bill – it is focused on lowering both taxpayer cost and risk. We believe we have made tremendous progress in educating key legislators, the administration and other critical stakeholders on the real costs and failure of PA's clean water strategy, as well as how the private sector can help turn it around.

There is substantially more attention on the bill (and the problem) from the media, a good indication that the bill is 'in play'. There have been a number of Op-Eds, coverage from Harrisburg's ABC TV affiliate, and our CEO, Dominic Bassani, has been interviewed on a number of radio stations. The most recent was last week on the Harrisburg NPR station. Be sure and visit Bion in the News and Ches Bay Policy News on the website for links to the TV news, radio interviews, op-ed pieces and other coverage. Look for more coverage and progress as the legislature gets back to work in September.

National – Not much new here, except of course for the EPA's Letter of Expectation described above. Also, in June, the Agriculture Environmental Stewardship Act of 2017 was introduced in the U.S. House. The Act will apply the U.S. energy tax credit (30% ITC) to biogas and nutrient control projects; and as of this writing, the bipartisan bill has 26 cosponsors from across the U.S. An identical bill was also introduced in the U.S. Senate.

As we suspected and predicted back in March, while the Trump Administration did indeed cut federal funding for the Bay, the mandates have not been rolled back. With reduced funding, it will be even more important that the Bay states direct spending to the most cost-effective solutions available.

Conclusion

At the risk of sounding like a broken record, we remain highly optimistic regarding the legislative process in PA. As described by a key legislator, PA has two choices: 1) Start writing annual checks for $378 million per the reboot plan (remember the budget deficit), or 2) implement SB 799 and competitive bidding. The first choice is a known cost; the second, which involves no risk to the taxpayer, could save up to $1.5 billion annually by 2025. And even if the strategy fails, it will cost the taxpayer nothing and will, in all likelihood, buy PA a couple years with the EPA. Again, we think that now that these costs are real, instead of some theoretical discussion in Annapolis or Harrisburg, the outlook for SB 799 is very good in this session.

As we move forward, both with PA and national policy, as well as demonstrating our 3G Tech, we are also optimistic that the Street (Wall Street) will recognize the potential value of a technology that can solve several of our worst environmental problems, while substantially improving the business outlook for the animal protein industry.

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This update, dated September 6, 2017, includes forward-looking statements based on management's current reasonable business expectations. In this document, the words 'anticipate', 'will', 'potential' and similar expressions identify certain forward-looking statements. These statements are made in reliance on the Private Securities Litigation Reform Act, Section 27A of the Securities act of 1933, as amended. There are numerous risks and uncertainties that could result in actual results differing materially from expected outcomes. Potential investors are urged to review the Company's 10K and 10Q filings with the SEC.