December 28, 2018

Maurice McCarthy, Jr.
Director of Public Works
Town of Stratford
550 Patterson Avenue
Stratford, CT 06614

Re: Stratford, CT – Water Pollution Control Facility Odor Exposure Assessment

Dear Mr. McCarthy:

Tech Environmental, Inc. (Tech) has completed an assessment of odor from the Town of Stratford's Water Pollution Control Facility (WPCF). It was our understanding that what prompted this assessment was that some of the neighbors to the north of the wastewater treatment facility have complained of odors on occasion and were concerned that detectable odors are a health concern.

Executive Summary

The first part of this study was to examine odor nuisance potential. The second part was to estimate any potential odor off-site to consider whether detectable odor could be a health concern. Although we monitored odor during a time of year where the wastewater temperature was still high, little to no detectable odor occurred off-site. There was odor detected on-site and this odor was dominated by hydrogen sulfide as expected. There was little organo-sulfide odor present based upon the odor character experienced and very little musty odors as well.

Tech initially tried to complete the scope of work with hydrogen sulfide modeling as originally scoped. This is common practice and has been performed on dozens of wastewater treatment facilities with odor potential. Tech then began to consider "typical loadings' from other facilities that had odor problem, but the assumptions began to diverge so far from the experience on-site, Tech decided that it was not representative of the true worst-case conditions.

Tech returned to collect more data to complete the modeling the additional data had the same low odor potential. We also examined the odor control system for potential upset conditions that could lead to odor concerns, and there are some recommendations made, but these recommendations would simply help limit the magnitude of upset days, they likely would not eliminate them.

Tech was extremely pleased with the odor potential from this facility, which we do not report that often. As a firm that specializes in airborne nuisance conditions, most wastewater plants that we visit for odor concerns have significant odor potential. That is not the case with this facility. The normal odor loading is low. The normal loading is key to exploring the potential for nuisance conditions, and also the potential for health related odor concerns.

Unfortunately, normal conditions cannot always be maintained, and as a result, there have been odor complaints at certain times. "Normal" for the sake of discussion includes normal plant operations, normal plant loading, and typical meteorological conditions. While the plant can control operations to some extent, there will be equipment that can malfunction. The wastewater treatment facility cannot control the fluctuations in odor loading in the incoming wastewater directly, and they simply cannot control weather conditions. It is extremely important that the neighbors living near a facility like this understand that any facility, not just a wastewater facility, does not need to be odor free. And therefore conversely, any odor from a facility does not make it a nuisance. Also, mild odor does not mean that there is a health concern.

It is important to address any potential health concerns from concerned citizens, but after examining the WPCF, the need for this study was marginal at best. This study was discussed earlier in the year as the ambient temperature was rising. Odor potential is typically higher during warmer ambient temperatures. Although this project was not approved until the early fall, after peak ambient temperatures, the true odor emission potential was still high. The reason that off-site impacts are typically less in the fall, is that the atmospheric mixing is better (i.e. windier than summer), windows may be closed more often, and therefore the atmospheric transport off-site can cause the odor to dilute and "drop-out" faster.

A drop in off-site impact should not be confused with a significant drop in source odor potential however. The odor emission potential from the wastewater is driven predominately by wastewater temperature. Warmer wastewater promotes more biological activity that can lead to additional oxygen consumption which creates odorous compounds. Furthermore, warmer temperatures provide a stronger driving force at the interface between the wastewater and atmosphere for odorous compound evaporation. Tech examined odor potential with sampling and monitoring equipment at the wastewater interface where odor potential is still maximized

It would not be unusual for a neighborhood group to read this report, note the time of year, and attempt to dismiss it as less than peak conditions. Now, if one were to argue that this study does not examine the absolute worst-case odor potential, since it was not completed at the optimal time of year for odor potential, Tech would agree. However, the odor potential was so low at this time of year, a follow-up study next summer does not seem like a prudent use of public funds for exploring odor. Instead Tech recommends that the facility consider a few very simple improvements to further reduce odor potential, if that is the primary concern. But of course we stand ready for further analysis if warranted.

Tech recommends a new portable chopper pump, one that can be moved around to areas of the plant where floatables may accumulate, (such as in the weir areas or the intermediate pump stations) be considered to lessen odor potential. Furthermore, separating the sludges to keep biologically activated sludge away from primary sludge would lessen odor potential. A booster fan and new fitting at the headworks building should be considered for this long duct runs. And finally, balancing and maintaining the biofiltration system on a regular basis would all help minimize odor potential.

What could not be assessed in October is the peak musty odor associated with aeration basins and other open tankage. This odor is a mixture of trace compounds that are stripped or created and stripped in the process, especially in aerated processes. A common odorant often found in this emission is dymethyl sulfide. The same compound emitted along the shoreline. There has been no chemical compound identified in aeration basin odor that is always present, and at a level that could be considered a harmful risk.

This "musty" odor is often detectable on-site near the tankage, mostly downwind only, and can be detectable nearby offsite in the downwind direction during very warm and humid conditions. Certain meteorological conditions can inhibit natural dilution in the local atmosphere, which can cause these odorous emissions to travel further away before dilution to non-detectable levels. These odor exposures are infrequent and somewhat neutral in hedonic tone (relative pleasantness). While one would not call them pleasant necessarily, they are not as unpleasant as the smell of hydrogen sulfide (rotten egg smell) for example.

There has been some discussion of airborne contaminants in this musty emission on the aerosol level (less than 1 micron in size). And as one would expect, the bacteria and virial level can be elevated from these emissions since they are coming from a plant that accepts human waste, but there has been no definite connection between these emissions and elevated risk for a number of reasons:

(1) most of the contaminants live in the water, and therefore, affect people through ingestion and not inhalation,
(2) they must survive the transport from the water to a fine mist,
(3) the levels measured have been the same or only slightly above the normal background levels, and
(4) individuals exposure to bacteria or viruses is always changing as one travels throughout their daily lives.

When ones goes to a school, the airport, the mall, a sporting event, the city, etc. the exposure level to viruses and bacteria increases and decreases as well, but there is no "musty odor" to suggest this exposure as there is on a warm, still July night. Please note that we have been to hundreds of wastewater treatment plants and the last thing we do when we leave is wash our hands, and the first thing we do off-site is wash my hands again, especially if we are going to eat something. It is basic common sense since human feces contain both virus and bacteria. This is a concern with direct ingestion, and is simply precautionary.

A separate study could be undertaken to examine the aerosol concentration, and exposure potential as well, but the problem with that type of study is the same problem we often find with mold studies. Mold and well as viruses and as well as bacteria are everywhere. There is no "safe" level of mold exposure. We often compare inside versus outside to get the potential increase in exposure from a building with mold. That could be done here as well, and it is likely that the results will indicate that there is a slight increase in exposure of common viruses that decreases with distance from the plant. The question then is: what would you do with those results? The answer is either nothing, or cover and treat the aeration basins and frankly all the open tankage. Covering and treating the air emissions from an entire wastewater treatment plant is not common, but has been done in the past. It is completely doable. It is typically limited to situations where odor cannot be favorably addressed without it.

In conclusion, the normal odor potential is very low from this facility. There is a potential for odor during upset conditions, though the potential extent is unknown at this time. Similarly, there is the potential for musty odor from open tanks during the summer months. The musty odor is predominately water mist from the aerated tankages that does not evaporate completely in humid conditions. We could complete an additional aerosol study to examine potential exposure to this mist. We could skip that step and complete a cover and treat conceptual design with estimated costs to eliminate aerosol exposure. Or, we could simply accept that the plant has minimal odor potential, and that many neighbors of other

plants are exposure to significantly more wastewater odor, and that the aerosol exposure is well within what one experiences living along the shore, near marshlands, and throughout our daily lives.

1.0 Introduction

The Town of Stratford's Water Pollution Control Facility (WPCF, or simply the Facility) operates 24 hours a day and 7 days a week. It is designed to process up to 24 million gallons per day (mgd) and is currently averaging 8 mgd. On October 16th and October 17th, when Tech Environmental (Tech) visited the Facility, the daily flow was 12.6 mgd.

The Facility is surrounded by residential neighborhoods to the north, and northwest, which are approximately 700 feet away. The primary neighbors of concern with respect to this study, are the Tide Harbor Condominium Complex, (the "Condos"), which is located directly north of the Facility. The Facility has received two to three odor complaints annually, and the Health Department has a record of an odor complaint dating back to September of 2014.

When the Facility gets an odor complaint the process is to:

1. Visit the complaint site and evaluate the situation.
2. Take a tour of the facility and check if there are:
    a. Open doors to buildings connected to odor control collections.
    b. Proper venting and vacuum lines on sludge hauling trucks.
    c. Bio-filter and vents set and operating properly.
    d. Any open waste spills.
    e. Rag dumpsters left out in open air.
    f. Bio-filter bed not exceptionally odorous.
    g. Foggers working properly, relocate as necessary.
3. Address all negative findings.

The neighbors have discussed their health concerns as a result of odor exposure. This is not an uncommon public reaction for those near an odorous source. It is important to note however, that the human olfactory senses have evolved more as a safety mechanism that a health detector.

It is a natural human reaction to smell something and wonder about potential health effects; however, most air toxics have little to no odor. In fact most odorous compounds are used by humans more for immediate concerns about safety than long-term harmful effects. The compounds humans have been reacting to for safety's sake, for thousands of years, are reduced nitrogen compounds and reduced sulfur compounds. When mankind used to live predominantly in the natural environment, without refrigeration and/or in natural structures, the smell of both of these sets of reduced compounds indicated anaerobic decay from food, and that is may be spoiled. The most odorous compounds from a wastewater treatment plant are reduced sulfur-based, the presence of reduced sulfur compounds indicated that there was the potential that there was anaerobic activity in the natural structure. The presence of these compounds meant that it was likely that there was also the presence of carbon monoxide, which is a common asphyxiate.

Humans have adapted to be able to smell reduced sulfur compounds at extremely low levels, since the smell of reduced sulfur compounds was a natural defense mechanism to warn people to evacuate enclosed spaces that may contain carbon monoxide. One can detect methyl mercaptan and ethyl mercaptan in the part per billion (ppb) range. Words like millionaires and biollionaires are more common these days, and therefore, the true magnitude of a faction of a million or billion is not always considered. To consider what the concentration of a "millionth" or billionth truly means, for comparison sake, one blade of grass in a full football field of grass is about one in a million (one part per million – ppm), so one in a billion is one blade of grass in one thousand football fields of grass. Humans can detect methyl and ethyl mercaptans in the single digit or below part per billion (ppb) level. This incredibly low detection capabilities is why the natural gas company adds methyl and ethyl mercaptan in the ppm range to the otherwise non-detectable natural gas; so that humans can detect it during a gas leak for safety, even as it dilutes. This is also one of the natural smell associated with wetlands and saltwater marshes.

The other natural smell from wetlands and salt marshes is more of an earthy smell as identified in the Water Environment Federation Manual of Practice Chapter 13 on Odor Control page13-20, "*Even a well-operated aeration basin emits a slight organic odor. The characteristic earthy, musty, organic odor of activated sludge results from the volatilization of complex organics and the production of intermediate compounds.*" This natural odor is constantly emitted and typically non-odorous off-site, but it comes into play off-site during very humid, and still nights, when there is typically an inversion of meteorological conditions that inhibits dilution in the vertical direction. Windows are often open on those nights too. This odor is not exposure to one compound and as such is often described directly by different people. One compound commonly detected is dimethyl sulfide. Its character is often described as the "smell of the sea", as it is a common sulfide emitted from seawater and seashore areas.

Wastewater treatment plants have the potential for methyl and ethyl mercaptan emissions, but in order for it to be formed at levels that would drive odor detection off-site, there would need to be a significant anaerobic source on-site. At this facility, the only potential would be upset conditions from the sludge tanks. During normal activity, the sludge is kept aerobic and removed prior to breaking down anaerobically. Now, if the facility had a digester on-site, the potential for these compounds would be higher from an emergency release or pressure blow-off. However, for this facility, the odor from the sludge tanks (and other processes that had on-site odor potential) were dominated by hydrogen sulfide.

Hydrogen sulfide (H_2S) is the simplest reduced sulfur compound and is formed in small anaerobic pockets of activity. Where methyl and ethyl mercaptans need carbon containing compounds to be fully reduced to methane, sulfate can be simply reduced to dissolved sulfide. The odor detection threshold of H_2S has been studied many ways, and the actually individual threshold is best expressed as a range. It typically is between 0-1 ppb to 10 ppb. Connecticut has an odor limit of 4.5 ppb. While this is higher than methyl and ethyl mercaptan, (1 ppb and 0.4 ppb, respectively), it is typically more abundant than these other compounds. It is for this reason that this study focused on hydrogen sulfide.

2.0 Odor Identification

On Tuesday, October 16th, Tech visited the Facility. The ambient temperature was 65°F, partially cloudy and with winds blowing from the northwest away from the Tide Harbor Condominium Complex, (the Condos). Tech collected H_2S readings from the following sources: primary tanks, anoxic tank, distribution box, and aeration tank.

The original work of scope discussed monitoring for one day but Tech returned the following day, Wednesday, October 17th. The ambient temperature was in the mid 60°F, clear skies and with winds blowing from the north, and northwest. On this day, Tech continued collecting H_2S readings from the following sources: secondary tanks, primary tanks (weirs), biofilter bed, sludge thickener, thickening room and headworks building.

To obtain readings from the primary tanks, anoxic tank, aeration tank, distribution box, and biofilter bed, the samples were collected using a flux chamber. The flux chamber is a stainless steel half sphere looking device that isolates a known area of the water surface (or bio filter bed) and prevents influence from wind. After collecting these bags of air they then were analyzed by using a Jerome H_2S analyzer.

For the thickening building, headworks building, secondary tanks, and the sludge tanks. A point source reading was taken by attaching a tube to the Jerome H_2S analyzer, instead of drawing air into a Teflon bags.

Table 1 below shows the concentration of H_2S values collected at all 10 locations.

TABLE 1
H_2S Readings

Odor Sources	Sample	Concentration of H_2S (ppb)
Headworks Building	# 1	16
Primary Tank	# 1	40
Primary Tank (weirs)	# 2	4
Anoxic tank	# 1	150
Anoxic tank	# 2	ND
Aeration Tank	# 1	ND
Aeration Tank	# 2	160
Distribution Box	# 1	ND
Secondary Tank (weirs)	# 1	ND
Thickening building	# 1	260
Sludge Thickener	# 1	3,700
Biofilter Bed	# 1	36
Biofilter Bed	# 2	140
Biofilter Bed	# 3	110

ND = non-detect

The odor experienced on-site was a rotten egg odor.

3.0 Odor Modeling

Typically, Tech calculates odor emission rates by examining the known air flow rate for aerated sources, and the cascading force of wastewater pulling air with it in the case of the weirs. EPA's air dispersion model, AERMOD, is typically used for odor modeling. The sources considered were a mixture of

volume sources, area sources and point sources. The primary tanks surfaces, biofilter bed, distribution box, aeration tanks, and anoxic tanks were modeled as area sources to represent the wind blowing over the open tanks' surfaces. The odor control (OC) systems, headworks building, thickening building and sludge thickener were modeled as point sources.

Prominent structures at the wastewater facility are included in the dispersion modeling to account for downwash effects on the plumes from OC systems. 1 arc-second (30 meter) resolution terrain data was obtained from USGS and included in the dispersion modeling to represent the topography at and around the facility. Five years (2012-2016) of surface meteorology data from Bradley Airport paired with upper air meteorology data from Albany, NY, obtained from CT DEEP, were used in the modeling. Receptors along the fenceline were spaced at 50 meters (m). Receptors surrounding the facility were spaced at 100 m out to 500 m and 200 m out to 1000 m.

Two odor modeling scenarios were identified. The one described thus far via the data above is the existing normal operations. In odor dispersion modeling, one actually models from the source to the receptors, but the data is only meaningful "in reverse". The odor concentration is not an actual strength but how much odor free air would be needed to dilute a sample to below detectable levels for a majority of people, so the "concentrated" source value is actually the potential for dilution. This matters simply because this approach only makes sense when the modeling results are above the minimum dilution. If the results are below the detection level off-site, it means that the "additional" dilution needed would be less than one, or essentially negative, which makes no sense, so odor modeling can only truly be performed for sources that are so odorous that the results off-site will have some remaining odor. For most places where neighbors complain of odor, the odor potential when maximized through sampling and monitoring, show some residual odor.

Fortunately, for the Facility and its neighbors, the baseline odor potential is very low. For the "normal" operations herein, the initial modeling assumptions would suggest a "negative" odor off-site. So where the Connecticut air regulations (Section 22a-174-23. Control of odors) define a nuisance at more than seven dilutions threshold, this facility would have trouble getting to one dilution to threshold based on the site visit and odor present onsite.

With no normal baseline odor modeling results that make sense, it makes it nearly impossible to model for an assumed "upset" condition. Sometimes these "upset" conditions are planned, such as during a tank cleanout conditions, and sometimes they are unplanned, such during and equipment failure.

Tech usually uses the normal loading as a check to validate any over assumptions made for upset conditions, or to truth check data assumed from a like facility, "as equal". In this case, it would take monitoring of actual upset conditions to model them off-site. Often upset conditions can result in odor potential that is 10 to 100 times normal loading for a short periods of time. The shorter the event, the less likely it could make it off-site. When the baseline odor is within the error of the analysis, it is hard to suggest how much "more" an upset condition may be.

From a health perspective, it could still possible to monitor H_2S on-site and then model it off-site, even at very low concentrations for potential exposure concerns, but the results in this case would be so low for hydrogen sulfide too, they would not be meaningful. The modeling would suggest that there is no odor ever off-site. While that is clearly is not the case, it is important to realize that during "normal"

loading, off-site odor potential is very low. Modeling results showing no odor off-site are not included because they are not realistic.

While, this seems like a problem from the point of view of identifying the actual concern, the bottom line is that this is all good news with respect to odor exposure. During this study, it was very low and could not be predicted at any meaningful level off-site. The results would be within the error of the analysis so suggesting any residual H_2S off-site, is not realistic.

The only source of odor with any substantial odor concentration was the sludge tank. While the sludge tank concentration was two orders of magnitude higher than the odor threshold, there is really little to no pathway for this odor to escape. This odor is kept in tanks with solid concrete covers and other than an occasion breathing loss, is sent to the biofilter for odor control. While an occasional breathing loss could result is a burst of odor, it does not have an emission loading driving force that would push it off-site in a manner that would suggest the H_2S exposure on a daily or annual basis would be affected.

With respect to aeration basin odor, it is not clear that odor would be problematic from a nuisance perspective, but it is clear that the odor should be mild at best. As mentioned in the introduction, this musty odor is a mixture of a number of very mild compounds. The mixture is similar to the mixture one is exposed to from the natural odor at the shoreline. In fact, in some cases, low tide after a storm can be confused with this type of odor since dimethyl sulfide is a common odorant from both this musty odor and the smell along the shoreline. Tech personnel once completed a study of odor emission potential from tidal flats near a wastewater treatment plant in Salem, MA. The study was initiated because a number of odor complaints were logged into the facility's hotline in wind directions that did not line up with the plant, but were at low tide, and did line up with the tidal flats.

The musty odor during warmer months, when there are meteorological inversions or still conditions, is typically not considered frequent enough, strong enough, or long enough to warrant odor control, though some plants have elected to eliminate this odor. Often these sources are covered and treated as part of a larger odor control program after a long exposure to odor. When individuals become sensitized to malodors for some time, on a daily basis, some level of "overcorrection" is often employed to help correct the situation. In other cases neighbors are simply right on top of these tanks so what is experienced onsite at this facility near The aeration basins is experienced off-site at close receptors. The apartment building to the north of this facility is not close to this type of proximity.

Lastly, is the topic of exposure to musty odors and the potential for elevated health concerns. The musty odor is predominately the fine mist emitted from the aeration basins, but really can come from any open tamkage. The reason why it is detectable, at times, in the summer, is that when it is hazy, hot, and humid, it cannot evaporate when the atmosphere is near saturation. It is emitted in different droplet sizes, but it is the very fine mist that can remain buoyant in the air and travel offsite. These droplets are less than a micron in size. They can contain residual organic chemicals, viruses, and bacteria. All water vapor in the air has compounds absorbed in it. Chemicals, viruses, and bacteria are everywhere. One is exposed to more chemicals in their households (four or more times as much indoors as outdoors[1]) than they would be from these water droplets. When one chooses to live by the ocean, they make a decision to expose themselves to more pathogens. There are more pathogens near the beach than inland[2]. Given

[1] *Comparison of Risks from Outdoor and Indoor Exposure to Toxic Chemicals*, Environmental Health Perspective, Vol. 95, pp 7-13, 1991.
[2] https://www.whoi.edu/oceanus/feature/sea-life-is-accumulating-pathogens

that wastewater treatments plants are treating millions of gallons of water a day, there is the potential for common viruses and bacteria to be emitted in these droplets. This phenomenon was examined in detail in the 1970s by the EPA[3]. At the time, there was no suggestion that any elevated emissions could be proven to be problematic[4] because:

(1) most of the contaminants live in the water, and therefore, affect people through ingestion and not inhalation,
(2) they must survive the transport from the water to a fine mist,
(3) the levels measured have been the same or only slightly above the normal background levels, and
(4) individuals exposure to bacteria or viruses is always changing as one travels throughout their daily lives.

Recent studies have revisited this concern from both sides. For example, it is not necessarily the amount of exposure that matters as much as the immune system of the individuals.[5] One such study found that there were elevated levels of many common viruses and bacteria, but most were within 2% of background and the highest were at less than 10% of background[6]. The study then goes on to suggest the elevated risk from this added exposure, but it does so as if the background is static. That one is either continually exposed to one background level, or the elevated level from the aerosol. Unfortunately, life does not work like that. Exposure to chemicals, viruses and bacteria are constantly fluctuating when one makes simple decisions like going to the grocery store, attending their child's play, or taking a walk along the beach.

Unfortunately, those studying this aerosol phenomenon have an impossible task to try to confirm or deny added risk. It is a few equations with thousands of variables in everyone's daily lives for exposure to germs[7]. What is also unfortunate, is that the internet allows people to examine studies that holds many variables constant and then tries to draw conclusions about susceptible risk groups, or lifetime exposures, etc. The paper cited from November of this year above (reference 4) is a great example of this type of analysis. In a vacuum the added exposure could be considered more "risky", but when one considers all the other factors, some from the references cited, concluding any added risk from occasional wastewater mist is simply not reasonable.

4.0 Conclusion and Recommendations

Tech has performed a number of odor studies and the normal worst-case conditions are typically not this encouraging. It is very clear from this assessment that the facility is operating as intended. There have been some things from a long-term maintenance standpoint that have been put-off, but many of these do not necessarily translate to higher odor or air emission potential. To lower odor potential, Tech recommends the following:

---

[3] *Health Implications of Sewage Treatment Facilities*, US EPA, March 1978
[4] *Potential Health Hazards from Microbial Aerosols in Densely Populated Urban Regions*, Applied and Environmental Microbiology, January 1980, p6-12.
[5] Aarhus University. "*This is why we do not constantly get ill despite viruses, bacteria*." ScienceDaily. December 2015.
[6] *Airborne bacteria in a wastewater treatment plant: emission characterization, source analysis and health risk assessment*, Water Research, November 2018
[7] https://www.livescience.com/16787-germs-everyday-surfaces-infographic.html

1. A new portable chopper pump. There was the potential for floatables and other items to collect in the intermediate pump stations and siphons on-site. These are open to the atmosphere. A portable pump that can be moved around would lessen odor potential.
2. Separating the sludges to keep biologically activated sludge away from primary sludge would lessen odor potential. It is our understanding that these modifications are planned for the near future.
3. A booster fan and new fitting at the headworks building should be considered for this long duct runs. The current fitting for the duct prior to its long run over to the blower is an ELBOW that is also a CONVERGENCE fitting. This fitting is not ideal and may lead to positive pressure conditions from the headworks building. This building is the closest to the neighbors to the north, and therefore, has the most potential for odor offsite during an upset condition in the air handling system.
4. And finally balancing and maintaining the biofiltration system on a regular basis would all help minimize odor potential. There was little to no back pressure in some of the ducts. This means that when there are slight positive pressure situations, there could be temporarily releases of untreated air. Tech recommends an air balancing program be initiated late winter/early spring prior to the warm weather next year.

In conclusion, the normal odor potential is very low from this facility. Tech has seen many neighbors of other plants exposed to significantly more wastewater odor without adverse health effects.

There would still be potential for odor during upset conditions, though the potential extent of this exposure is unknown at this time.

Similarly, there is the potential for musty odor from open tanks during the summer months. The musty odor is predominately water mist from the aerated tankages that does not evaporate completely in humid conditions. The question then is: what to do about the mist?

1. We could complete an additional aerosol study to examine potential exposure to compounds or germs within this mist.
2. We could skip the study step, assume the worst, and complete a cover and treat conceptual design with estimated costs to eliminate aerosol exposure.
3. Or, we could simply accept that the plant has minimal odor potential and that the aerosol exposure is well within what one experiences living along the shore, near marshlands, and through other pathways in our daily lives.

Please contact me us at 781-890-2220 with any questions. Thank you.

Sincerely yours,

TECH ENVIRONMENTAL, INC.

Michael T. Lannan
President

4385/Letter Report