

**Town of Hampden
Planning Board
Wednesday May 25, 2016
Municipal Building Council Chambers
7:00 pm
AGENDA**

1. Approval of Minutes (May 11, 2016)

2. Old Business

A. Site Plan/Conditional Use Review

Fiberight LLC/MRC: Solid Waste Recycling and Processing Facility.

The Municipal Review Committee/Fiberight LLC, has **proposed** to construct a 144,000 square foot Solid Waste Processing Facility with an attached 9,800 square foot administration building accessed by a 4,600 newly constructed commercial road. The road and facility are proposed to be located East of the Coldbrook Road on Map 9, Lot 35-39 and Map 14, Lot 7.

Continuation of Public Hearing from April 13, 2016 & May 11, 2016.

4. Planning Board Concerns

5. Adjournment



Engineers • Environmental Scientists • Surveyors

May 19, 2016

Mr. Peter Weatherbee
Planning Board Chairman
Town of Hampden
106 Western Avenue
Hampden, Maine 04444

RECEIVED

MAY 19 2016

TOWN OF HAMPDEN PLANNER

Re: MRC/Fiberight Supplemental Submission

Dear Chairman Weatherbee:

We are providing this letter and the accompanying information in support of the application for Site Plan Review for the MRC/Fiberight Processing Facility. Based on feedback we received from the Planning Board at the meeting on May 11th and subsequent discussions with Town staff we wish to provide additional information that we believe will be helpful to the Planning Board in their review of this application. We have also received a memo from Maine Traffic Resources dated May 17th regarding their review of the traffic submission. We have not received any peer review comments related to odor or other issues since the review letter dated April 7th. We believe we have addressed those issues through our responses dated April 8th and May 2nd.

Included with this letter are:

- ◆ May 19, 2016 memo from Eaton Peabody
- ◆ Mitigation Plan
- ◆ Copy of email correspondence from Emera regarding capacity to serve
- ◆ Copy of lease agreement between MRC and Fiberight
- ◆ Updated odor complaint protocol to include Town of Hampden in the process
- ◆ Copy of the draft Operations and Maintenance Manual for the facility dated May 2016
- ◆ Response to Maine Traffic Resources memo dated May 17th.
- ◆ Memo to the board providing comparative information of odor from trucks and the tipping floor of the proposed facility and the Ecomaine facility in Portland.
- ◆ General Project Area Overview
- ◆ Preferred Truck Route Policy Statement
- ◆ Best Available Control Technology (BACT) Analysis
- ◆ General Arrangement Process Flow Diagram

Please let us know if you have any questions or need additional information. We look forward to discussing these items in more detail with the town and Planning Board on May 25th.

Sincerely,
CES, Inc.

Sean Thies, P.E.
Senior Project Manager

SMT/gdr
Enc.

cc: Greg Louder, MRC
Jon Pottle, EP

Mr. Peter Weatherbee | 05.19.2016 | 10973.002 | Page 1



MEMORANDUM

TO: Sean Currier, Town of Hampden Public Works Director
CC: Keefe Cyr, City of Bangor Wastewater
FROM: Kyle Corbeil, P.E.
DATE: May 13, 2016
RE: Proposed MRC/Fiberight Access Road Sewer Pump Station

The Municipal Review Committee (MRC) and Fiberight, Inc. has proposed a Solid Waste Processing Facility, located near Cold Brook Road and served by a proposed access road. The new facility requires several utilities, including gravity sewer main and a sewer pump station to convey wastewater from the proposed project area to the existing Town sewer collection system. This proposed pump station will serve the new MRC/Fiberight facility as well as development along the access road. The Town of Hampden has received a request from CES, who is providing engineering services for MRC and Fiberight, for design standards regarding the proposed sewer pump station serving this facility.

The Town of Hampden has adopted several design standards for its sewer pump stations in the interest of standardization and ease of maintenance. This memo details these design standards as requirements for the proposed sewer pump station serving the MRC/Fiberight Solid Waste Processing Facility and future development along the access road.

The Town should reserve the right to modify these requirements depending on the particular pump station configuration and site conditions for the proposed pump station.

Design and Construction Requirements:

1. Flygt Submersible pumps
 - a. Flygt submersible pumps required.
 - b. Stainless steel guide rails and lift chain required.
 - c. Provide pump leak detection system, Flygt Mix-Flush System, and Flygt Ball Check Valve options.
 - d. Service and Startup to be provided by Stevens Electric & Pump Service, Inc. Contact Tim Stevens for further details.
2. Backup Power
 - a. Backup power generator is required.
 - b. Generator and controls will be housed in a common structure of adequate size and materials of construction, meeting mechanical code requirements for heating and ventilation. Provide all code and maintenance clearances for generator, electrical panels, and appurtenant equipment.
 - c. Design calculations, structural plan, and code requirements need to be detailed for review.



3. Influent channel grinder
 - a. Provide JWC Environmental 30K Series Muffin Monster in-channel grinder. Immersible electric motor is required, hydraulic power pack option is not acceptable.
4. Odor Control, Access Hatches and Lift Hardware
 - a. Provide odor control canister suitable for proposed wetwell structure with removable activated carbon cartridge.
 - b. Orientation of the access hatch needs to allow access by the City of Bangor truck crane.
 - c. Aluminum frame and cover with minimum 300 lb/ft² load rating, stainless hinges and hardware, with pad lock hasp.
 - d. Integral safety grating required meeting OSHA fall protection requirements.
 - e. Include a davit crane socket base for each equipment housing structure matching the City of Bangor's confined space entry equipment requirements. The City uses the "Complete Davit System" by Safe Approach, Inc. of Poland, ME. Match the type of base installed at Route 202 and Mayo Road sewer pump stations.
5. Inlet Piping, Discharge Pipe and Supports
 - a. Excessive vertical drops into the wetwell will not be acceptable. Provide intermediate structures as necessary to prevent air entrainment.
 - b. Schedule 10S 316L stainless steel required for discharge piping.
 - c. 316L pipe supports required.
 - d. Provide sewer air release valve at piping high point with flushing hose connection.
6. Controls
 - a. UL-listed control panel matching Mayo Road and Route 202 Pump Station design required. Contact Stultz Electric of Portland, Maine further details.
 - b. Contact Whitten's 2-Way for SCADA telemetry requirements (City of Bangor telemetry coordination required).
7. Construction Records
 - a. As-built Drawings and Specifications
 - b. Submittal Record
 - c. Service, repair, fitting location plans (tie sheets)
 - d. Factory Testing, Onsite Testing, and Startup Reports
 - e. Onsite training for Town and City of Bangor staff
 - f. Contractor's Warranty Documents
 - i. Individual component/equipment warranties will not be acceptable.
8. Operations and Safety Items:
 - a. Short Circuit Analysis and protective device coordination study



- b. Arc Flash Hazard Analysis Study
- c. Operations and Maintenance Manual

As noted in the review letter regarding the MRC/Fiberight facility dated March 30, 2016, the Applicant is subject to the review process described in the Sewer Ordinance. We expect that a review package for including all of the pump station, gravity sewer, and force main piping will be submitted for review.

We would request that the Applicant provide detailed design information for review, as the proposed sewer system covers a large area with potential for development. Detailed projections of anticipated wastewater use by the MRC/Fiberight facility as well as estimates of wastewater generation along the Access Road corridor will be necessary. The Applicant should provide pump sizing, forcemain sizing, and wetwell volume calculations with the design package for a complete review. The Applicant will also need to provide operational parameters such as estimated pump run time, electrical use, and ongoing maintenance items for use in budgeting Town responsibilities.

The new facility will be subject to the Industrial Pretreatment Program administered by the City of Bangor Wastewater Department. Review by the City's Wastewater Department staff for compliance with Industrial User Permit requirements will also be required.

SUMMARY MEMORANDUM

Mr. Kyle Corbeil, P.E.
Project Engineer
Woodard & Curran
One Merchants Plaza
Bangor, ME 04401

May 17, 2016

RE: Traffic Impact Study Review for Hampden Solid Waste Processing Facility

The purpose of this memorandum is to summarize review of the proposed Solid Waste Processing Facility in regard to traffic, as requested by Woodard and Curran and the Town of Hampden. Previously, I reviewed the "Hampden Site Plan Review Application for Solid Waste Processing Facility, Appendix 1, Traffic Narrative," prepared by Victor J. Smith, P.E. and dated June 24, 2015. That review was summarized in my March 25th memorandum to you. In that memorandum I specifically requested additional information which would constitute a typical Traffic Impact Study for this level of trip generation including:

- Peak hour trip generation and assignments for determination of study area
- Traffic volume data for intersections determined to be in the impact area
- Capacity analysis for the study area intersections
- Auxiliary turn lane warrants
- Information on how the trucks would be restricted to the stated haul routes and away from Hampden's intersections of concern
- Site signage and pavement markings
- Sight distance review at the intersection of Main Road North and Coldbrook Road since it was flagged as a concern of the Town.

A Traffic Impact Study was then performed in response to the above requests, also prepared by Victor Smith, P.E. This traffic study was not stamped and signed. It is recommended that a stamped/signed copy of this traffic study be submitted to the Town of Hampden for the record.

Maine Traffic Resources (MTR) began a review of that study and found some deficiencies and errors. Victor Smith called MTR to check on the status of the Traffic Impact Study review and the following was conveyed to Victor Smith:

- There was an error in the seasonal factors utilized which overinflated the traffic volumes.
- Traffic counts and analysis were not provided for the intersection of the I-95 northbound ramps and Coldbrook Road but they were provided for the southbound ramp intersection.
- No information was provided on how trucks would be required to stay to the identified haul routes. In discussion of this item Victor Smith stated that since Route 202 was a

faster and better road, haulers coming from the northeast would take that road and not Main Road North (Route 1A). MTR suggested travel time runs to document/demonstrate that Route 202 would be the preferred route since it was faster.

- Sight distance for the intersection of Main Road and Coldbrook Road was not provided.

An addendum, Traffic Impact Study Addendum 1, prepared by Victor Smith was submitted to MTR on May 9th for review. This Traffic Impact Study Addendum was also not stamped and signed by Victor Smith. Again, a stamped and signed copy should be submitted to the Town of Hampden for the record. My review comments on the Traffic Impact Study and Traffic Impact Study Addendum 1 follow:

1. **Peak Hour Trip Generation.** I concur with the peak hour trip generation estimates obtained and utilized in the study. These were obtained by converting daily trips to peak hour trips based upon the hourly distributions recorded at the existing PERC facility in Orrington and projected employee shift times.
2. **Peak Hour Trip Assignments.** I generally concur with the trip assignments, which are based upon the expected haul routes. Based upon the trip assignments the study area extends from the site along Coldbrook to the I-95 southbound ramps. The trip assignments to and from the east along Coldbrook Road, through the Route 202 intersection, are borderline for inclusion in the study area for capacity purposes. Given that this intersection has been designed to a high standard with auxiliary turn lanes, MTR did not feel it necessary to include traffic counts or analysis for this intersection.
3. **Traffic Volumes.** Based upon the trip assignments and determined study area, traffic counts were conducted at the Coldbrook Road intersections of the site drive, the I-95 north bound ramps and the I-95 southbound ramps. MTR found an error in the original Traffic Impact Study. The counts had been factored by a 1.20 factor to peak summer conditions. The actual factor is only 1.08 and this was subsequently corrected in Addendum 1.
4. **Annual Traffic Growth.** MTR concurs with the 2 % annual traffic growth used to bring the 2016 volumes to base 2018 conditions.
5. **Other Development Volumes.** The study never discusses whether the Town of Hampden was contacted to determine if there are any other development projects, either approved and not yet built, or pending approval, that should be considered in the traffic analysis. The Town of Hampden and/or Victor Smith should confirm that there are no other development projects in the area which will impact future study area volumes. If any significant other development projects are identified then the no-build and build analyses should be updated to include traffic from these developments.
6. **Traffic Analysis.** Level of service (LOS) analysis was performed for existing conditions, 2018 no-build (assuming no other development projects) and build conditions for the study area intersections for the AM and PM peak hours of the facility. The results indicate that

there are no capacity concerns at either the Coldbrook Road northbound ramp intersection or the site drive intersection during these AM and PM peak hours of the facility. The build condition for the site drive was run with a right-turn lane on Coldbrook Road to serve the facility. Since no right-turn lane is being provided the analysis should be re-run and resubmitted without the right-turn lane.

The analysis determined that the intersection of the southbound I-95 off-ramps and Coldbrook Road operates at capacity, LOS "E", under existing conditions. Under projected no-build and build volumes the LOS will be "F". Mr. Smith notes that this LOS "F" condition only occurs for 15 minutes of the peak hour. Typically, over time, the LOS "F" condition will worsen and given daily and seasonal traffic fluctuations it may impact a greater portion of the peak hour. He also suggests that the intersection is not of concern since it is not a high crash location. While Mr. Smith is correct that poor levels of service can ultimately lead to accident problems, this would not be expected to occur yet at an intersection that is currently operating at LOS "E". Generally, accident problems don't occur until an intersection has been operating at LOS "F" for some time.

Since the peak hour of the adjacent street system occurs later than the peak hour for the facility it is recommended that the analysis for the southbound ramp intersection also be performed for the peak hours of the adjacent street system to determine operations during that period. While the facility will generate fewer trips during this period other volumes will be higher. Generally, both AM and PM peaks occur in close proximity and there is not much difference in results. Typically, when MTR performs traffic analysis we are conservative in our assumptions. For example, MTR would have laid the AM trip generation for the site (6:30 – 7:30 AM) over the AM peak hour of the adjacent street (7:00 – 8:00 AM). This allows for the facility to shift their hours and allows for the analysis to consider daily and seasonal variations in hour traffic volumes. Similarly, the PM peak hour of the adjacent street is 4:15 to 5:15 PM while the peak hour of the facility is 2:30 – 3:30 PM.

Typically, when a deficiency is identified in a study, potential mitigation actions are evaluated. Mr. Smith has recommended that MaineDOT restripe the off-ramp to clearly define 300 feet of separate left and right-turn lanes. Maine Traffic Resources recommends that traffic signal warrants also be evaluated for the southbound off ramp intersection. If traffic signal warrants are not met a possible condition of approval would be to monitor the off ramp intersection after the solid waste facility is fully occupied.

To summarize, MTR requests that analysis also be performed for the AM and PM peak hours of the adjacent street system for the intersection of Coldbrook Road and the I-95 southbound ramps since capacity concerns were identified. Traffic signal warrant analysis should also be provided for this intersection under projected build conditions. The analysis for the site drive under build conditions should be repeated with corrected lane inputs on Coldbrook Road.

7. **Auxiliary Turn-Lane Warrants.** Auxiliary turn-lane warrants were provided for Coldbrook Road at the site drive to determine the need for either a right-turn lane or a left-turn lane to serve traffic entering the site. The results show that neither a right-turn lane nor left-turn lane are warranted on Coldbrook Road at the site drive during the peak hours of the facility.
8. **Accident Data:** Additional accident data was obtained for an expanded study area for safety purposes, from the I-95 southbound ramps to the intersection of Route 202 and then along Route 202. There are no high crash locations, meeting both MaineDOT crash criteria. There was one location which is approaching the high crash criteria, the intersection of Route 202 and Western Avenue. This intersection has a CRF of 0.93 with 18 reported crashes. Mr. Smith indicates that the vast majority of accidents are rear-end collisions and simply due to inattention. In fact, rear-end collisions at signalized intersections can often be attributed to improper traffic signal timing. Further evaluation of safety and signal timings is recommended for this intersection.
9. **Haul Routes:** In my initial review, MTR asked how haul routes to the facility will be mandated. In further discussion with Victor Smith travel-time runs were suggested to demonstrate that trucks would utilize Route 202 and not North Main Street to travel to the facility. No data regarding haul route adherence or travel time runs to support the assumptions were provided in either the Traffic Impact Study or the Addendum 1. Additional information is needed to address these concerns of the Town.

As noted in my initial review, the Town of Hampden is concerned with trucks at three particular intersections in the vicinity of the facility, which could indeed be impacted by trucks using the shortest, most direct route. These intersections are:

Main Road North (Route 1A) and Western Avenue
Western Avenue and Route 202
Coldbrook Road and Main Road North (Route 1A)

Additional information indicating how haul routes are to be mandated or travel time runs to demonstrate no significant truck impact to these intersections should be provided.

In addition, sight distance was specifically requested for the intersection of Main Road North and Coldbrook Road, which was not provided in either the study or addendum.

10. **Interior Road Network:** The updated site plan (C102 and C103) were reviewed regarding previous comments. A stop sign has been added exiting the facility at the cul-de-sac. Some radii revisions were made to the site plan to better accommodate WB-67 trucks entering the facility. WB-67 trucks exiting the facility will still need to encroach onto the incoming travel lane. Is a stop sign and stop bar proposed at Coldbrook Road? None is shown on the plan. Will centerline markings be provided on the access drive to better travel paths?

To summarize, Maine Traffic Resources requests the following additional information:

- It should be confirmed that there is no other development pending that needs to be considered in the future traffic analysis.
- LOS for the site drive intersection for build conditions without a right-turn lane on Coldbrook Road since none is being proposed.
- LOS for the AM and PM peak hours of the adjacent street system for the intersection of the I-95 southbound ramps and Coldbrook Roads.
- Given the poor level of service for the southbound I-95 off-ramp and the high left turning volumes MTR requests traffic signal warrant analysis, including peak hours and four hours, at a minimum, for this intersection.
- The intersection of Route 202 and Western Avenue is approaching the high crash criteria with a CRF of 0.93 and 18 crashes over the three-year study period. Mr. Smith indicates that the vast majority of accidents is rear-end collisions and is simply due to inattention. Rear-end collisions at signalized intersections can often be attributed to improper traffic signal timing. Further evaluation of safety and signal timings is recommended for this intersection.
- Additional signage and pavement markings should be shown on the plan.
- Additional information on how haul routes are to be mandated or travel time data to demonstrate that the intersections of concern won't be significantly impacted by trucks.
- Stamped and signed copies of the traffic study and addendums should be submitted to the Town for the record.

As always, if you or the Town of Hampden have any questions regarding these review comments or requests for additional information please do not hesitate to contact me.

Sincerely,



Diane W. Morabito, P.E. PTOE
President



Bill Lippincott
30 Wilbur Drive
Hampden, ME 04444

RECEIVED
MAY 19 2016
TOWN OF HAMPDEN PLANNER

Peter Weatherbee Chairman, Planning Board
Dean Bennett Community Development Director
Town of Hampden
106 Western Avenue
Hampden, Maine 04444
May 19th, 2016

Concerning the Planning Board Review of Site Plan for Fiberight

I want to thank the Planning Board for its thorough investigation of odor and traffic issues connected with the Fiberight project, and for extending public hearings so that Hampden citizens can express their concerns on those two issues.

But I am concerned that the public has not been able to express their concerns on other issues, in particular air and water quality.

When I look at the performance standard for odor in Hampden's Zoning Ordinances, it states:

page 38. Performance Standards

4.4.1 Odorous Matter. "The emission of odorous or toxic matter in such quantities as to be readily detectable... as to produce ..a hazard is prohibited...shall comply with minimum Federal, State or local requirements

At the first Planning Board meeting, I was allowed to briefly comment on air emissions, but when I asked if Keith Bowden could present evidence that indicates that Fiberight's application is not meeting that performance standard, I was told that he could not at that meeting.

Air emissions are clearly part of Standard 4.4.1, so I don't understand why that was not considered a fair point of discussion. Kathy Walker, in her testimony earlier in the hearing, also commented on air quality, so the issue had been raised, without objection.

I was not able to attend the second Planning Board Meeting, but I understand that it too was limited to comments related to odor and traffic.

So I am asking at what point in the public hearing process will members of the public be able to comment on Fiberight's application regarding performance standards of the zoning ordinance other than odor and traffic?


Bill Lippincott

I am also sending a copy of this May 19th letter from Keith Bowden to the Planning Board regarding water quality and wastewater issues of Fiberight's application that are relevant to the performance standards of Hampden's Zoning Ordinance. I hope that these are also topics that public will be allowed to comment on. This is a major project, with many complex facets; I appreciate the challenge and care that the Planning Board is talking to review the project

A handwritten signature in dark ink, appearing to read "Neil L. S.", with a long, sweeping horizontal stroke extending to the right.

May 19th, 2016

Mr. Peter Weatherbee-Planning Board Chairman
Mr. Dean Bennett – Community Development Director
Town of Hampden
106 Western Avenue
Hampden, Maine 04444

RE: Technical Review of Hampden Site Plan Application for the Fiberight Project

Dear Sirs:

I have been following the status of the proposed Fiberight project and spoke in general terms about the challenges of bringing a new, unproven technology to fruition at the public meeting at Hampden on November 19th, 2015. More recently, I have attended Hampden's Planning Board (PB) meetings of April 13, 2016, and May 11, 2016 held for the purpose of conducting the Site Plan Review Application for the MRC/Fiberight project. I would like to first compliment the Board for its thoughtful and deliberative process with which it has conducted those meetings. The focus has been on traffic and odor issues, both of which the PB has clear jurisdiction and oversight responsibilities for under the Hampden zoning ordinance.

But, if one studies the Site Plan Review (SPR) document submitted March 3, 2016 to the Planning Department, (218 pages) and the supplemental reports and memos to the PB, one can identify a number of discrepancies, technical errors, omissions, or the broad avoidance of some other very relevant issues that the Board needs to weigh in on.

One such issue of concern is the reason Fiberight has for such a high volume of cooling tower water usage and discharge to the Hampden sewers. Looking back at the second in my series of technical analyses of errors & omissions submitted to the Maine DEP on Feb 1, 2016 (see Attachment 1), I pointed out the problems with the Dec 14, 2015 block flow diagram that Fiberight presented, particularly with respect to the sewerage/discharge of wastewater from the Anaerobic Digestion (AD) block. I had questions (See Issues # 6 and #7 that are in bold in Attachment 1- page 3 of the critical analysis) around the need for the cooling towers, the volumes of water used, the visual, safety and emissions impact of these cooling towers, etc. From these inquiries, we learned that the cooling towers would evaporate 161,280 gallons per day into the atmosphere (yet CES claims there will be no significant vapor plume?) We also learned for the first time- publically, that the Fiberight project was in fact going to be discharging 150,000 gallons per day to the sewer (not the 36,000 gallons or so previously reported). The wastewater would be made up primarily of Cooling Tower blow down, process water and sanitary sewer system wastes.

Based on the new block diagram, (CES posting of 2-9-2016 on the Maine DEP website), we now know that 230 TONS per day of water is going to be sewerage from the AD system (230 tons equals about 55,123 gallons per day). The Cooling Tower blow down quantities are reported as 66% of 150,000 gallons of the wastewater discharge, which is 99,000 gallons. The cooling tower water is required mainly to "cool the re-circulating cooling water [I assume this is non-contact/clean water] used to condense the steam in surface condensers on the steam turbine generator exhausts." What is the estimated volume of sanitary wastes from the Fiberight facility? Using the numbers supplied by CES, it must be negative as the reported volumes of cooling tower blowdown and process water is already over 154,123 gallons per day (99,000 plus 55,123 gallons.). The PB should have the applicant reconcile all these numbers, from the volumes of water consumed and

released to the atmosphere and volumes discharged to the sewers. Also, the PB should determine if the applicant is trying to avoid installing, at its own expense, wastewater pre-treatment equipment by excessive dilution of the constituents in the waste stream with high cooling tower discharges? Maybe Fiberight thinks "the solution to pollution is dilution"!

In any case, realization of the volume of wastewater discharges from the Fiberight operation got the attention of the Bangor Public Works Department responsible for operation of their wastewater treatment plant (WWTP) and identifies another major issue for the PB to address. This sewer volume has lead the City of Bangor to require Fiberight to provide 2 days of on-site wastewater storage capacity in the event Bangor's WWTP has incidences of excessive stormwater runoff in their combined sewers. These wet weather conditions can result in overflows of raw, untreated wastes directly to the Penobscot River.

As of the May 13th PB meeting, the PB has not allowed any public discussion of the volume of wastewater coming from the Fiberight facility, only odor and traffic issues. The Hampden Planning Board clearly has jurisdiction in its zoning ordinance to require in Fiberight's Site Plan Application full public disclosure of aspects of the project that shall have an impact on surface, ground, and air quality. Specifically, page 31 – "Standards Governing Site Plan Review" of the Hampden Zoning Ordinance in Section 4.1.7.13 states:

The proposed use, buildings, and site development shall have no unreasonable adverse effect on surface water quality, ground water quality, ground water quantity, soil quality, or air quality.

In Woodard and Curran's "Preliminary Review Letter" dated March 30, 2016 regarding ordinance applicability, the Town's engineering firm noted additional information required of the applicant "to demonstrate conformance with Ordinance requirements". In the Town's Peer review staff report from Economic Development Director Dean Bennett to the Planning Board dated April 11, 2016, the director cites the very same section of the ordinance on page 6. But the only reference made to the issues of concern to Hampden that the Fiberight project can adversely effect the residents is "Odor", apparently as a possible "air quality" impact. (See [http://www.hampdenmaine.gov/vertical/sites/%7B1FCAF0C4-5C5E-476D-A92E-1BBD5B1F9E05%7D/uploads/PB_4.13.16_Board_Meeting_Packet_w_MRCFiberight_Material\(2\).pdf](http://www.hampdenmaine.gov/vertical/sites/%7B1FCAF0C4-5C5E-476D-A92E-1BBD5B1F9E05%7D/uploads/PB_4.13.16_Board_Meeting_Packet_w_MRCFiberight_Material(2).pdf)). Obviously, the impacts on surface and ground water quality need to be met by the applicant and these "standards" need to be addressed by the PB as it conducts its Site Plan Application Review.

Late in March, CES revealed that they are putting 2 tanks outside for storing effluent water before discharge to Hampden's sewers (See attachment 2 -March 30th, 2016 memo from CES Travis Noyes to the Files" regarding "Wastewater Storage Requirements – Fiberight Facility" that went to the Maine DEP's - Lou Pizzuti). This memo was after the submittal of the Site Plan to the Hampden PB on March 3, 2016. It is interesting that these wastewater tanks have not been mentioned at the PB meetings of April 13, 2016 or May 11th, nor, I believe have they been depicted in C-103 (Site Plan Diagram) and shown to the public in the applicant's power point presentations. Has the PB:

1. Been informed of Fiberight's plans to put in storage tanks for the purpose of holding back wastewater during wet weather conditions?
2. When were the PB and Hampden's engineers informed of the plans to install a 100,000 gallon process sewer wastewater storage tank outside and UNDERGROUND (below the Parking Lot) and to also install an above ground tank of 150,000 gallon capacity next to it?
3. Does the PB have an updated/revised Site Plan diagram showing these wastewater tanks?
4. have the Site Plan diagrams on C-103 depicting the tanks been shown to the public in the applicant's power point presentations?

Clearly, with both an above and below ground wastewater storage tank outside the building envelope, Fiberight and the MRC are opening themselves up a host of issues for the Town of Hampden to review given the potential for discharges of untreated wastewater from both to groundwater and surface waters. The peer review teams have been silent on these environmental issues to date with their focus on odor and traffic. But the presence of these outside, below ground and above ground tanks, the impact of such tanks clearly are relevant and pertain to the Zoning Ordinance standards.

If such releases were to occur, there would be SIGNIFICANT liabilities for the applicants and for the Town that would be VERY EXPENSIVE to mitigate. What the PB should required of the applicant to protect the environment, at a minimum are:

- 1) double walled pipes to and from the double walled underground wastewater storage tank with perhaps extensive compacted clay soils around the tank to prevent leak migration into the groundwater aquifers. A leak detection system in the interstitial spaces of the pipes and tank should also be required, and the development of operational controls. All this needs to be documented in a Chemical and Process Spill Prevention, Control and Countermeasure Plan (SPCC).
- 2) the above-ground tank wastewater holding tank will either need to be a double walled and complete with a leak detection system between the 2 walls and an integrated alarm system, or the above ground tank will need secondary containment dikes, or walls sized to hold 110% of the maximum volume of the tank, with a conductivity detector and an alarm system to indicate that a leak or overflow has occurred (due to operator error, overflow thru vents, tank breaches, etc). There will also be a need for sampling/monitor of rainwater trapped in the containment area. (The above ground tank could be double walled, but one would still have to monitor the space between walls to detect leaks).

The Hampden Town officials should not only be worrying about leaks from those two wastewater storage tanks (even if they will not be utilized all the time). There are vulnerabilities with ALL of the other ANEAROBIC DIGESTION TANKS that are outside, as they contain foul process waters that must not be released into the environment. All of the outside tanks (whether used only occasionally or regularly) require some form of secondary containment/alarms/etc. These tanks are depicted in C-103 near an outlet pipe directed to the stormwater collection basin. Are all these tanks in a concrete containment area with a volume sufficient to hold 110% of just one of these large AD tanks and is the PB confident that there are no potential releases to the stormwater collection basin adjacent to this cluster of tanks?

The Hampden Planning Board and Hampden's engineers should also have concerns about "odor releases" from emergency venting from all these AD tanks that are all outside. There are numerous examples of AD tank explosions throughout the world. Fiberight should be asked to provide to the PB some level of detail on the safety record of the vendor supplying the AD system, and the potential for explosions and odor releases.

Submitted by: Keith Bowden
May 19th, 2016

cc: Bill Lippincott

Attachment 1

Maine Department of Environmental Protection

February 1, 2016

Regulatory Assistance Small Business Ombudsman
Attention: Julie Churchill, Ombudsmen
17 State House Station
Augusta, Maine 04333-0017

Re: Fiberight, LLC & MRC Project – DEP# S-022458-WK-A-N

Dear Ms. Churchill,

I am submitting to the Maine Department of Environmental Protection (DEP) the second in the series of studies of the permit application of Fiberight, LLC and the Municipal Review Committee (MRC) for the proposed solid waste processing facility in Hampden (Project number DEP# S-022458-WK-A-N). This submittal consists of a partial analysis of the remainder of the 534 page solid waste processing and recycling facility permit application, as well as some of the "deliverables" from CES, Inc. that addressed some of the questions of the Maine DEP. (The first analysis released by the Town of Orrington on October 27, 2015 focused on the University of Maine's Forest Bioproducts Research Institute (FBRI) team that was contracted to conduct a peer review of the Fiberight technology to convert MSW to ethanol (so-called Trashanol), a biogas (methane via Anaerobic Digestion) and other by-products. The FBRI report was prepared on January 30, 2015, and titled *Technology Review Fiberight Process for MSW* and was included in Attachment 13 of that permit application). Thank you for including the Town of Orrington's analysis on the DEP website.

My technical analysis of portions of the Solid Waste Permit application for the Fiberight facility is grounded in the fact that I have many years of experience as a chemical and environmental engineer in the pulp and paper industry. I also have pilot plant management and operating experience in converting wood pulp and paper fibers into sugars and other organic chemicals, and fully understand the challenges of taking a fledgling technology from the pilot plant or demonstration plant to commercial scale. Finally, I have first hand, real world operating experience at Old Town Fuel & Fiber (OTFF) in enzymatic hydrolysis processes for converting cellulose into clean, high quality industrial sugars. As you know, enzymatic hydrolysis is one of the fundamental unit operations of the Fiberight process.

My review of a portion of the Solid Waste permit application and/or supplemental information (deliverables) provided to the Maine DEP's Bureau of Remediation & Waste Management by CES, Inc or prepared by Fiberight identifies a number of errors, omissions, unclear or contradictory statements. Some of the errors were relatively minor (typos, for example) and have not been highlighted in the following pages. The attached analysis touches on the more significant technical deficiencies. It is my belief that correction of the deficiencies and clarification of the confusing statements is warranted by the applicants.

A deeper dive may be conducted to uncover additional, significant technical deficiencies. I would appreciate it if you could provide me with any and all comments or questions that you or your staff

may have pertaining to this submittal. If you should receive responses from the involved parties to the Hampden project regarding this analysis, I would certainly appreciate the opportunity to respond. You can contact me via email.

Sincerely,

Keith A. Bowden

Keith A. Bowden

Resident: Town of Orrington

1. The Maine DEP published a dozen Process Flow Diagrams (PFD's) of the Fiberight facility process design on their website on Dec. 21, 2015. In the Solid Waste Permit submitted in June 2015 there are nearly 2 dozen references to biomass fuel (industrial sugar), liquid sugar, sugar solutions, and cellulosic sugars. Nowhere in any of the permit applications is there a definition of "Industrial Sugars" or an indication of what concentrations of sugar that the facility will achieve/target, and basically what the technical specifications or requirements are for industrial applications. A careful reading of the permit application does indicate that sugar solutions may be 5 to 7% sugar and thus 93-95% water, salts, chemical inhibitors, and other components. But no viable market exists that I know of, for such shipments of water over any distance to another company.

The permit application states at the bottom of page 2 of Attachment 13 that "The exact disposition of the filtered hydrolysate is dependent on current contractual, market and operational conditions". The whole issue of sugar production is not one that is only a marketing one, but is technical and as such this reviewer believes that the contradictory statements in the permit application need to be clarified at this stage of the permit review process!

To produce marketable, industrial sugars for "disposition", a facility must have the installed equipment to make it, clean it of contaminants, concentrate the sugars to remove the significant amounts of water, and then store the sugars for sale. There are a couple of occasions in the solid waste permit that mentions ways to concentrate sugars using either a membrane system or evaporation methods. There are also a couple times where it is noted that sugars not converted to natural gas via anaerobic digestion will be stored in multiple tanks. There are no occasions in the permit application that I have reviewed where the sugars are cleaned of salts, inhibiting organic acids are removed and a viable industrial/commercial sugar product is produced.

In Attachment 13, CES makes a number of seemingly contradictory statements about sugars. First, Page 1 - Products and Waste Generated: Lines 2-6, "The resultant products ...which will (emphasis added) be sold on the open commodities market ... and biomass fuel (sugar) which will (emphasis added) be sold on the open commodities market". On the very next page 2 under the heading **Methods Utilized to Store Products**, the subheading Biomass fuel (Industrial Sugar), (concentrated in membrane systems or evaporators?), will be stored ... to be shipped and sold as industrial sugar or (emphasis added) the filtered hydrolysate is fed to the anaerobic digestion plant for conversion to biogas".

Later in Attachment 13, in the section titled "05-Maine Process Description 15" on page 4-5 there are references now made to PDF 6: Enzyme Hydrolysis. Fiberight discusses how the enzyme converts the Activated Cellulose Substrate to clean sugars that are sent to the: "TK-6500 Sugar Break Tank. The filtered hydrolysate stored in TK-6500 is then either further concentrated in a membrane system and stored in a series of Sugar Storage Tanks to be shipped and sold as industrial sugar..." and adds the or sent to AD for conversion to gas. So the text cites an ability to concentrate sugars and store it in multiple tanks, yet PDF 6 and the General Arrangement Diagram (website supplemental of Dec. 10, 2015) does not show any membrane system or evaporation capability needed to concentrate sugars or any place to store concentrated sugars in multiple tanks. There is a clear contradiction between the written narrative in the permit application, here and also in Attachment 23 and the PFD # 6 that show only a Sugar Break tank, and no following Sugar Storage Tanks.

2. PFD 3A Secondary Sort Part A shows the hood, cyclone and blower system designed to remove thin plastic film from the 2D Fraction QC line in the solid waste processing room. The blower is shown directing the hood vapors to a filter and vented to the atmosphere. This emission point should be depicted as being directed to the odor control system. The neighborhood air quality in Hampden would be seriously impacted from these odor discharges as proposed/depicted discharging to the atmosphere.
3. The U Maine FBRI report in the Solid Waste permit- Attachment 13 - Appendix B notes the autoclave temperatures operated at the Virginia pilot plant facility can cause issues of melting of plastics and the facilities plan to lower operating temperatures in the autoclave. The autoclave or rotary drum pulping unit (based on the more recent PFD's issued) are thus guaranteed to be producing vapors from melting waxes/plastics or other Volatile Organic Compounds. Have these potential emissions been quantified anywhere in the various permit applications (even though they are in the initial Processing Room where such vapors will be picked up in the hood system for subsequent scrubbing)?
4. In Attachment 13, starting on page 9, CES presents 2011 data collected by the University of Maine School of Economics with projections of the sources of 20% of incoming residuals that will have to be landfilled in Maine. A table categorizes material 2" or less in size and states 1% will be household hazardous waste (HHW) materials. (HHW includes paint, batteries, CFL & other fluorescents, light ballasts; even small propane cylinders will be in that residue). On page 16, Tables 19 and 20 list the various HHW sources and restates the origin of the 1% residue figure. But CES deliverable #13, the "MSW Mass Balance – Hampden Maine" table that breaks down the 652 tons per day of MSW going to the Fiberight facility ignores 6.52 tons per day of HHW since the table shows 0.00% in the "Aggregate Total" column. Which is it? And where on the General Diagram is Fiberight going to safely store, manage these nearly 7 tons per day of HHW residues as implied by the DEP in Deliverable #12 – "storage location of waste residuals".
5. Solid Waste Permit Section 23 includes a "draft" Operations and Maintenance (O & M) manual. While we recognize it is still a draft, inconsistencies with other attachments need to be

corrected. O & M page 6 says "Fiberight will not accept separated supplies of wood waste or process wood waste such that it will be marketed and sold as biomass wood fuel, mulch or alternative daily landfill cover." Is this different from the 1% (6.5 tons per day) of the "Construction and Demolition" that CES states will be in residential loads of bagged wastes from small household remodeling and construction projects? (See page 13 of Attachment 13).

Fiberight is no longer burning wood waste that originally was to be fed to the boilers with the Post Hydrolysis Solids as stated at the end of paragraph 1, page 2 of Section B –General Operations of the draft O & M manual (and also stated repeatedly in the Air Emissions Permit). The quantity of wood waste calculated from the Air Permit was projected to be 24 tons per day of material.

Since this is now rightfully considered a "waste" and not a fuel additive, CES needs to identify in all areas of all permit applications that this tonnage of wastes is going to the Norridgewock landfill. Alternatively, Fiberight needs to apply for a beneficial use for this solid waste material and include it in the Solid Waste permit application process if it is somehow going to be marketed.

6. **The Block Diagram – as Received Mass Balance deliverable that appeared on the DEP webpage on Dec. 14, 2015 shows the only effluent discharge occurring from the Anaerobic Digester Plant (Block 9, 10) and equals 110 tons per day. Yet the Solid Waste Permit application indicates the combined sanitary and process wastewater is 150 gpm. On page 1 of Attachment 20 of the Solid Waste Permit Application submitted by CES, it indicates that the average daily flow of sanitary sewer discharges and process wastewater will be only 25 gpm (36,000 gallons per day). These various numbers do not reconcile.**
7. **What is the need for the cooling towers and air compressor units that suddenly appeared in the December "General Arrangement Diagram". Their use is apparently somewhat in doubt since PFD 20 shows this equipment as a "Hold". Have the need for cooling towers been thoroughly studied and are they being driven by the energy balance for the AD facility? The use of the cooling towers can have a significant visual impact on the neighborhood, and may have a safety impact on the trucks entering/leaving the Hampden facility. Given the project proximity to Interstate 95, it may have a safety impact given the fog, mist, freezing rain, etc that may emanate from cooling tower plumes? Is that the best location for the cooling tower?**

What process stream is being cooled and what are the potential volatile organic chemical compounds that may be released if it is in direct contact with process water? Will there be any chemical additives in this cooling water, such as biocides, water softeners, etc.?

8. PFD #10 shows the Anaerobic Digester (AD) system as a vendor package unit and does not provide any significant detail. Attachment 13 – Process Design – Maine Process Description section provides a total of 9 sentences on the most critical part of the Fiberight process. This is woefully inadequate.

Fiberight is also claiming it is using a “proprietary anaerobic digestion system”, when later in Attachment 13, the University of Maine FBRI team provides repeated references to the Voith digestion system at the Virginia Pilot Plant and subsequent plans to use the Hydrothane Expanded Granular Bed (EGB) systems at the now mothballed Marion, Iowa facility. Are the Fiberight plans for the AD system proprietary or are they now at a loss as to what will work in Maine for this vital operation. One can hardly find a reference to the EGS Anaerobic Digestion system promoted on the Hydrothane website, unless it is under a new/different name.

Attachment 2



Engineers • Environmental Scientists • Surveyors

MEMO

To: JN 11293.001 FILE
From: Travis Noyes, P.E.
Re: Wastewater Storage Requirements – Fiberlight Facility
Date: March 30, 2016

As noted in the information provided by the City of Bangor, they have the capacity during dry weather conditions to accept the estimated average daily flow of 150,000 gallons per day. During a meeting with the City in December 2015, it was mentioned that storage or some other alternate means of handling wastewater would be required during wet weather conditions to alleviate issues with the City's Combined Sewer Overflows (CSOs). Given that discussions with the City are on-going, for purposes of this permit application, we have assumed the need to provide alternate means for handling wastewater during wet weather conditions for 300,000 gallons or two times the estimated average daily flow.

The operational team of the proposed facility will manage the discharge of wastewater during wet weather conditions with the use of on-site storage tanks. The tanks will consist of the following:

- Use 50,000 gallon buffer in 150,000 gallon process water storage tank (internal to facility)
- Install 150,000 gallon above ground sewer hold tank (external to facility)
- Install 100,000 gallon below ground tank (external to facility)

Materials of construction for the tanks are still being evaluated and will be determined during final design.

The preliminary proposed location of the below ground tank has been selected to be beneath the employee parking area and the above ground external holding tank is located next to the parking area (as shown on the attached Site Plan C101). Wastewater would enter the tanks for storage during wet weather events and would be conveyed to the gravity sewer system serving the facility once the wet weather event was over.

The external below ground tank dimensions are anticipated to be approximately 40 feet long by 40 feet wide by 10 feet deep. If a circular tank is chosen, the dimensions would be approximately 45 feet in diameter and 10 feet in depth. The 150,000 gallon above ground storage tank is circular and is proposed to be located adjacent to the below ground tank. Again, as final design calculations are performed, the materials of construction and tank dimensions will be finalized.

Fiberlight File | 03.30.2016 | 11293.001 Page 3



Six Locations in Maine | www.ces-maine.com

457 North Main Street
PO Box 632
BIDDEFORD, Maine 04412
T 207-933-2024
F 207-933-4809



Angus Jennings <townmanager@hampdenmaine.gov>

RE: Hampden Zoning performance standards

1 message

Churchill, Julie M <Julie.M.Churchill@maine.gov>
To: Angus Jennings <townmanager@hampdenmaine.gov>
Cc: "Pizzuti, Lou S" <Lou.S.Pizzuti@maine.gov>

Thu, May 12, 2016 at 1:11 PM

Thank you Angus,

Regulations that apply to odor at the proposed Solid Waste Processing Facility:

Maine Solid Waste Management Rules: CHAPTER 409 PROCESSING FACILITIES...

Section G. Odor Control

- (1) For facilities other than those that process wastewater treatment sludge from publicly owned treatment works and facilities that process septage: Based upon the location, design, and operational procedures of the proposed facility, the applicant must demonstrate that the facility will not cause an odor nuisance. This demonstration may be done by one or more of the following:
 - (a) A demonstration that the materials handled at the facility do not generate objectionable odors;
 - (b) Comparative studies with similar existing facilities taking into account similarities and differences in materials handled, facility design, throughput, proximity to neighbors, meteorological conditions and topography; or
 - (c) Odor dispersion modeling studies demonstrating that the facility will not cause more than a one hour average odor impact of 2 dilutions to threshold (2D/T), in any calendar year at any occupied buildings.

NOTE: D/T is defined by ASTM Method 679-91, "Standard Practice for Determination of Odor and Taste Thresholds By a Forced-Choice Ascending Concentration Series Method of Limits". The applicant may wish to demonstrate that it will meet this standard at the processing facility's property boundary, to ensure that nuisance odors at occupied buildings will not occur if the areas near the facility are subsequently developed.

(2) For facilities that process wastewater treatment sludge from publicly owned treatment works and facilities that process septage: An odor management plan must be submitted that includes provisions for the prevention and control of nuisance odor during routine operations and construction activities based upon the location, design, and operational procedures of the proposed facility. The odor management plan must include the following information:

- (a) An evaluation of potential process odor and potential off-site influences;
- (b) Proposed methods to prevent nuisance odor which may include systems for the enclosure of nuisance odor-producing materials and processes;
- (c) Proposed methods to control, reduce or eliminate nuisance odor; and proposed uses of technology and an evaluation of the effectiveness of the technology to control, reduce or eliminate nuisance odor;
- (d) Provisions to monitor and formally document facility nuisance odor if identified at the property boundary;
- (e) A procedure to formally record and respond to odor complaints in a timely manner;
- (f) Odor response procedures that include response actions to be implemented after the occurrence of an odor event or the determination of nuisance odor is made. The procedures must outline the responsibilities of facility personnel, notification provisions to the Department and the community, and include potential actions that may be taken along with associated timeframes for implementation;
- (g) Provisions to maintain and store back-up equipment or obtain replacement equipment in a timely manner during shutdown and malfunction events that is critical to the function of the odor control system; and
- (h) Provisions to record odor related information including monitoring data, including any exceedances.

NOTE: The scope and detail required in this plan will be determined by facility-specific conditions including the complexity of the facility and waste type(s). Existing plans may be used to demonstrate compliance provided that they meet, or are modified to meet, the requirements of this section.

This is addressed in their Operations Manual and Tipping Floor Management Plan.

Julie

287-7881

From: Angus Jennings [mailto:townmanager@hampdenmaine.gov]

Sent: Thursday, May 12, 2016 12:34 PM

To: Churchill, Julie M

Subject: Hampden Zoning performance standards

Julie,

Thanks for your time on the phone. The performance standards governing odor in Hampden's Zoning Ordinance are located in Sec. 4.4.1, on page 38 of the Ordinance:

http://www.hampdenmaine.gov/vertical/sites/%7B1FCAF0C4-5C5E-476D-A92E-1BED5B1F9E05%7D/uploads/Zoning_Ordinance_3.2.16.pdf

I'll get in touch with Paul White to get a copy of the Orrington protocols. If you can send the DEP statutory framework and regs/rules, that'd be great; otherwise I'm sure we can track them down.

Thanks,

Angus

Angus Jennings
Town Manager

Town of Hampden

*106 Western Avenue
Hampden, ME 04444
(207)-862-3034
townmanager@hampdenmaine.gov*

**Town of Hampden
Planning Board Meeting
Minutes
Wednesday May 11, 2016**

The meeting of the Hampden Planning Board was called to order at 7:02 pm Wednesday May 11, 2016 at the Hampden Municipal Building Council Chambers by Chairperson Weatherbee.

Attendees:

Peter Weatherbee - Chairperson
Eugene P. Weldon
Kelley Wiltbank
Jim Davitt
Joan Reilly
Mike Avery

Staff:

Dean Bennett, Community Development Director (CDD)
Ed Bearor, Town Attorney

1. Approval of Amended Minutes (April 13, 2016)

Minutes were approved by Vote: 5-0-1

2. Old Business - None

A. Site Plan/Conditional Use Review

Fiberight LLC/MRC: Solid Waste Recycling and Processing Facility

The Municipal Review Committee/Fiberight LLC, has proposed to construct a 44,000 square foot Solid Waste Processing Facility with an attached 9,800 square foot administration building accessed by a 4,600 newly constructed commercial road. The road and facility are proposed to be located east of the Coldbrook Road on Map 9, Lot 35, 39 and Map 14, Lot 7.

CONTINUATION OF PUBLIC HEARING FROM APRIL 13, 2016

Chairperson Weatherbee opened the meeting at 7:02pm and stated if there were no objections, he would like to move New Business to the top of the Agenda to review the other two matters before the continuation of the Fiberight Public Hearing.

Hearing no objections, Chairperson Weatherbee moved to the first item under New Business.

3. New Business

A. Site Plan Review/Approval (Permitted Use)

Justin Lewis is seeking Site Plan approval to establish a Speech Therapy Office at 626 Main Road North. He indicated his wife was a speech therapist and this would be her office location.

Chairperson Weatherbee asked if there was anyone in attendance that would like to speak in favor of the application. Seeing none, Chairperson Weatherbee asked if there was anyone would like to speak in opposition to the application. Again, seeing none, Chairperson Weatherbee closed the Public Hearing and asked for staff overview and recommendation.

Community Development Director (CDD) presented a brief overview of the application, indicating the application was for a Permitted Use within the Business District, in conformance with the submission requirements of Article 4.1 Site Plan Review and the Article 4.8.7 Sign provisions of the Zoning Ordinance.

The application proposes to utilize the existing single family dwelling with no exterior improvements other than a handicapped ramp, and new gravel for the existing driveway and parking areas.

CDD noted that the planned parking spaces exceeded the number of spaces required by the Zoning Ordinance, which is (1) space for every 250 Square feet of building. Applicant is aware of the sign provisions of the Ordinance and the need to obtain a permit from Code Enforcement.

Given the application involves no exterior additions or alterations, does not propose any increase in impervious surface, and is appropriately zoned for the proposed use, CDD recommendation to the Planning Board is the approval of the application as submitted.

The Planning Board, with no additional questions, moved and seconded to approve the Site Plan of Justin Lewis to establish a Speech Therapy Office at 626 Main Road North, per the submitted application. Vote: 6-0

B. Home Occupation Review/Approval

Brandy Webb is seeking approval for a Home Occupation for a Hair Salon in her home at 1245 Western Avenue. Mr. and Mrs. Webb explained that they previously had a Home Occupation in their home but have relocated and wish to continue her Salon.

Chairperson Weatherbee asked if there was anyone in attendance that would like to speak in favor of the application. Seeing none, Chairperson Weatherbee asked if there was anyone would like to speak in opposition to the application. Again, seeing none, Chairperson Weatherbee closed the Public Hearing and asked for staff overview and recommendation.

Community Development Director (CDD) presented a brief overview of the application, indicating the application was for a Permitted Use within the Rural District. The application as proposed appears to be in

conformance with the Home Occupation Standards of Article 4.10 of the Zoning Ordinance.

The application proposes a single-chair salon, operated by the owner, and located within a portion of the basement area of the three story dwelling. There are no proposed exterior changes to the outside of the building, larger parking area than required by the Standards, and no sign is proposed. The site, being set back from the road is well screened and easily accessible. Supply deliveries would typically utilize UPS service.

Given the application appears to exceed the minimum standards of Article 4.10, and poses little if not any impact to the character of the area, CDD recommendation to the Planning Board is the approval of the application as submitted.

The Planning Board, having no additional questions, moved and seconded to approve the Home Occupation application of Brandy Webb for the establishment of a Hair Salon in her basement at 1245 Western Avenue. Vote: 6-0

Chairperson Weatherbee asked for a motion to reopen the Public Hearing on the MRC/Fiberight application that was suspended on April at 7:05pm. Motion was moved and seconded. Vote 6-0

Chairperson Weatherbee opened the public hearing at 7:10pm.

Chairperson Weatherbee explained that the Public Hearing would be conducted as it was at the last meeting. He inquired if there was any additional information to be presented by the Applicant.

Applicant:

Sean Theis, Senior Project Manager, of Civil Engineering Services (CES) of Brewer, indicated they had prepared additional information for presentation to the Board.

Chairperson Weatherbee asked that the applicant briefly review the issues that were covered at the last meeting and then move forward with any additional information.

Kyle Sullivan, CES, briefly reviewed the odor discussions of the last meeting and explained that they had prepared an Operations Manual, which was submitted to the Department of Environmental Protection and he would like to explain the developed protocols for reporting and handling odor complaints.

Kyle spoke on the following protocols:

1. The establishment of a 24 hour/7-day a week Odor Complaint Hotline that can be called directly by residents. If a complaint came to the town, the town would have this number to provide to the resident.
2. Once call was received and validated, the Code Enforcement Officer and DEP would be notified of the complaint.
3. The complaint would be responded to by a person, followed up upon and response to the complaint filed within 30 days.
4. Furthermore, Mr. Sullivan indicated that the MRC would be acting in a landlord capability providing oversight of Fiberight.

Question/Comment: Chairperson Weatherbee.

Who is in charge and by what authority?

Answer: MRC has landlord position with Fiberight.

Follow-up Question: Attorney Bearor.

Where are the provisions that empower MRC over Fiberight?

Answer: Section 5.4 of the Agreement.

Mr. Bearor asked for a copy of the Agreement.

Jonathan Pottle, Attorney for MRC.

Attorney Pottle offered the following:

1. Primary objective is the avoid and complaints
2. If complaint is received, a clear process is established.
3. Transparency is the key.

Attorney Pottle explained that the protocol is not intended to put any obligation on the Town of Hampden, but in fact, ensure the lines of communication are open and clear so that the Town of Hampden as full access to the status of the reported odor complaint investigation.

Sean Theis, CES

Mr. Theis referenced the most recent traffic addendum submittal. He explained that traffic counts were initiated and completed at all of the areas of concern identified by the Planning Board. Traffic counts were performed at the PERC facility, logging time of truck arrivals, looking for peak periods. There was no peak periods identified. They counted the off-ramps at I-95 and the location of the proposed access road. There were no areas of major concern identified.

Question/Comment: Member Wiltbank

How many trucks are coming into town and from where are they coming?

Answer: Mr. Theis presented a truck route map which indicated from which direction trucks are anticipated to come and how many on each of the identified roadways.

Question/Comment: Member Wiltbank

Is there any reason for any truck to come into the middle of Hampden on Route 1A?
Mr. Wiltbank noted that from every direction an alternate route is possible.

Answer: Mr. Theis stated that it is there opinion that it is likely that trucks will chose to go on those most direct routes with least resistance. Perhaps suggested routes could be provided.

Question/Comment: Member Wiltbank

The residents do not like feeling that Hampden is the garbage site of the State. They do not want to be reminded. If there was a way for trucks to by-pass the downtown area, it would help. Who contracts with garbage haulers to bring trash to Hampden?

Answer: Greg Lounder, Executive Director of the Municipal Review Committee, explained that it is the community that contracts directly with the garbage haulers. If thought has been given to the issue, perhaps the community contracts between MRC and the Communities could have addressed it, however, the community often changes haulers and continued contract changes would be necessary if that should happen.

Question/Comment: Member Wiltbank

The issue is to do what you can to control truck traffic in certain areas of Hampden.

Question/Comment: Member Avery

Perhaps providing suggested Routes would be a means to address the concern.

Question/Comment: Member Wiltbank

I noticed on your map that the Odlin Road is not selected as a probable route. It functions as an industrial road and has many trucks that utilize it. It would hide the trucks from public view.

Victor Smith, CES

The routes were selected because they are the most probable route that trucks will take. They were not selected due to their ability to make trucks invisible.

Question/Comment: Member Wiltbank

Perhaps the trucks should be routed where they can't be seen?

Answer: Mr. Theis offered that the Odlin Road is not the same as Route 202. Route 202 is a large highway built for the purposes of truck transportation.

Attorney Pottle, MRC

Attorney Pottle indicated that these are valid concerns, but felt that truck routing should not be addressed in Planning Board site plan conditions, but that they would explore options.

Question/Comment: Member Wiltbank

Clarified he is not suggesting that the issue should be a standard or condition of approval, just that perhaps the member MRC towns would be sympathetic to the concerns of the Hampden citizens if approached with the situation.

Attorney Pottle said that they would look into ways to control the use of Hampden's roads.

Chairperson Weatherbee asked for any public comments?

Jim Hornbrook, Resident on Main Trail Subdivision, referenced last month's discussion on prevailing winds. He indicated that on a hot summer day, with no wind and high humidity, there was going to be a smell. He expressed his concern about the plant going down for whatever reason and the potential for a wedding reception in his subdivision to be affected. He explained that he has asthma and a sensitivity to perfume and he could smell the flare of the landfill from his home. He is familiar with anaerobic digesters and that fact that they are tanks with rubber covers that can explode. He is very concerned about the diminishment of air quality.

Mike Robson, Resident of Main Trail Subdivision stated that he "doesn't want to be the garbage capital of the world". He suggested a consideration might be to use digital media for reporting of odors. Create a template on a website, indicating location, time of incidents etc.. He is familiar with the use of dumpsters having been in retail for many years. He questioned about the liquid that flows out of trash trucks and its potential to damage vehicles or health. What is the enforcement and fine for truck that do not comply with the regulations. He suggested record keeping of deliveries so that if a hauler repeatedly does not cover the load, truck is rejected.

Keith Bowden, Resident of Orrington expressed his concerns for air emissions, odor associated with digesters and the release of Hydrogen Chloride. He stated there is Hydrogen Sulfide in digester gas. Keith suggested a means by which outgoing trucks could be odor neutralized, deodorized with cleaning agents. He further noted that the Zoning Ordinance Odor provisions refers to air emissions.

Questions/Comments: Member Weldon

Member Weldon addressed his question to Mr. Bowden. Member Weldon confirmed that Mr. Bowden was a resident in Orrington for a time. Member Weldon asked Mr. Bowden if he has ever filed an odor complaint in Orrington?

Mr. Bowden indicated that he had never done so. He further stated he lived a considerable ways away from the facility.

Kathy Walker, Resident of Hampden asked if the MRC was staffed for a 24 hour hotline?

Greg Lounder, MRC Executive Director responded that they were not and would need to make provisions for such a hotline.

David Ryder, longtime Hampden resident and current Town Councilor spoke of his recent trip to Virginia on family business and a Saturday afternoon visit to the Fiberight Facility in Lawrenceville. Mr. Ryder indicated he was surprised at what he found at the facility. He stated the "it didn't look like a trash facility", "he has smelled worse smells at the Hampden transfer station", "when the trash comes in, processing starts quickly and the trash is sprayed with an enzyme for flies and odors", "neither he, nor his wife, say any flies in the facility", and "there are houses within a 1/8 mile and apartment houses at 1/4 of a mile". He further explained that he has spent some time in Dunkin Donuts recently and counted the number of tractor trailers that passed through the intersection in town. In a short period of time, he counted 31, further stating, that any increase in traffic associated with the Fiberight facility was would be insignificant, when mixed with what is currently traveling the roads of Hampden. He recalled a time when there was an issue of traffic on the Emerson Mill Rd and residents complained. The problem was fixed, traffic was re-routed.

Question/Comment: Member Avery

Member Avery asked Mr. Ryder how did the town control those trucks back then?

Mr. Ryder explained that it was a town road and they town shut off truck traffic on that road.

Mr. Bowden asked Mr. Ryder how many tons a day was the facility processing when he was there?

Mr. Ryder indicated there were done as the facility is only open 5 days a week. Further clarifying, garbage smells, if your processing garbage and it smells, it would smell a day or two later.

Jim Hornbrook, Resident of Main Trail, indicated that if it smells he is going to call and complain every day about the odor.

Dale ?, indicated he was familiar with the protocols on Orrington and he said they would hold back trucks during school zone hours. The existing trucks were the worse smelling.

Chairperson Weatherbee: Announced a 5 minute break at 7:27pm

Chairperson Weatherbee suspended the Public Hearing, to be continued at a Special Planning Board Meeting on May 25, 2016 in the Town Council Chambers. Discussion would continue on odor and traffic.

5. Planning Board Concerns - None

6. Meeting adjourned at 9:30pm.

Respectfully Submitted,

Michael Avery
Secretary Hampden Planning Board

May 19, 2016

Mr. Peter Weatherbee
Planning Board Chairman
Town of Hampden
106 Western Avenue
Hampden, Maine 04444

Re: MRC/Fiberight Supplemental Submission

Dear Chairman Weatherbee:

We are providing this letter and the accompanying information in support of the application for Site Plan Review for the MRC/Fiberight Processing Facility. Based on feedback we received from the Planning Board at the meeting on May 11th and subsequent discussions with Town staff we wish to provide additional information that we believe will be helpful to the Planning Board in their review of this application. We have also received a memo from Maine Traffic Resources dated May 17th regarding their review of the traffic submission. We have not received any peer review comments related to odor or other issues since the review letter dated April 7th. We believe we have addressed those issues through our responses dated April 8th and May 2nd.

Included with this letter are:

- ♦ May 19, 2016 memo from Eaton Peabody
- ♦ Mitigation Plan
- ♦ Copy of email correspondence from Emera regarding capacity to serve
- ♦ Copy of lease agreement between MRC and Fiberight
- ♦ Updated odor complaint protocol to include Town of Hampden in the process
- ♦ Copy of the draft Operations and Maintenance Manual for the facility dated May 2016
- ♦ Response to Maine Traffic Resources memo dated May 17th.
- ♦ Memo to the board providing comparative information of odor from trucks and the tipping floor of the proposed facility and the Ecomaine facility in Portland.
- ♦ General Project Area Overview
- ♦ Preferred Truck Route Policy Statement
- ♦ Best Available Control Technology (BACT) Analysis
- ♦ General Arrangement Process Flow Diagram

Please let us know if you have any questions or need additional information. We look forward to discussing these items in more detail with the town and Planning Board on May 25th.

Sincerely,
CES, Inc.



Sean Thies, P.E.
Senior Project Manager

SMT/gdr
Enc.

cc: Greg Louder, MRC
Jon Pottle, EP

Mr. Peter Weatherbee | 05.19.2016 | 10973.002 | Page 1

Memorandum

To: Hampden Planning Board
From: Jonathan Pottle, Esq.
Date: May 19, 2016
Re: Application for Processing Facility
Applicants: Municipal Review Committee, Inc.
Fiberight, LLC

INTRODUCTION

On behalf of Municipal Review Committee, Inc. (“MRC”), we respectfully submit this memorandum setting forth the standard of review, rules of ordinance interpretation under Maine law, and our analysis on why the pending application for a solid waste processing facility before the Hampden Planning Board (the “Application”, “App.”, or “Project”) satisfies all applicable ordinance standards within the Planning Board’s review authority.

STANDARD OF REVIEW

When determining whether a review standard is met the Planning Board considers whether an applicant has met their evidentiary burden of proof. Under Maine law, that evidentiary burden, and the Planning Board’s consideration of that burden, is described as follows:

1. Whether the evidence is relevant to the review standard;
2. Whether the evidence is credible;
3. Whether the evidence is substantial, in that a reasonable person could accept it as true; and
4. Whether the evidence is outweighed by conflicting evidence (that must also be relevant, credible, and substantial).

WELL-ESTABLISHED RULES OF ORDINANCE INTERPRETATION

The Maine Law Court has established clear rules of ordinance interpretation that municipal boards, such as the Hampden Planning Board, must follow. These rules are:

1. Planning boards must apply the plain language of an ordinance when interpreting specific provisions; new standards, terms, and/or language can only be added by the municipal legislative body. *Gensheimer v. Town of Phippsburg*, 2005 ME 22, ¶ 22, 868 A.2d 161, 167.

2. Ordinances are not to be read expansively and when an ordinance defines a term, that defined meaning must be applied. *Maloson v. Town of Berwick*, 2004 ME 96, ¶ 5, 853 A.2d 224, 226
3. If ordinance terms are not defined, then those terms are given their plain and ordinary meaning. *Maloson v. Town of Berwick*, 2004 ME 96, ¶ 5, 853 A.2d 224, 226
4. A zoning ordinance must be construed reasonably with regard to the objects sought to be attained and to the general structure of the ordinance as a whole. *Moyer v. Board of Zoning Appeals*, 233 A.2d 311 (Me. 1967); *George D. Ballard, Builder v. City of Westbrook*, 502 A.2d 476 (Me. 1985); *Nyczepir v. Town of Naples*, 586 A.2d 1254 (Me. 1991); *Dyer v. Town of Cumberland*, 632 A.2d 145 (Me. 1993); *C.N. Brown, Inc. v. Town of Kennebunk*, 644 A.2d 1050 (Me. 1994); *Buker v. Town of Sweden*, 644 A.2d 1042 (Me. 1994); *Christy's Realty Ltd. v. Town of Kittery*, 663 A.2d 59 (Me. 1995); *Peterson v. Town of Rangeley*, 715 A.2d 930 (Me. 1998); *Oliver v. City of Rockland*, 710 A.2d 905 (Me. 1998); *Town of Union v. Strong*, 681 A.2d 14 (Me. 1996).
5. Some ordinance terms are ambiguous. An ordinance term is “ambiguous” if it is “capable of being understood in two or more possible senses or ways.” *Webster's Collegiate Dictionary*, 11th ed. (2003)
6. Land use ordinances are in derogation of common law private property rights. Any ambiguities in an ordinance must be resolved in favor of the property owner's proposed use. *Forest City, Inc. v. Payson*, 239 A.2d 167, 169 (Me. 1968)
7. The ordinance is the source of the requirements that an applicant must meet to obtain a permit. Administrative bodies, such as the Hampden Planning Board, cannot apply arbitrary standards. This includes standards that do not legally exist. *See Tenants Harbor Gen. Store, LLC v. Dep't of Env'tl. Prot.*, 2011 ME 6, 10 A.3d 722, 723 (stating the Maine DEP cannot apply unannounced rules or criteria not promulgated by statute or regulation).

THE RECORD EVIDENCE DEMONSTRATES THE APPLICANTS HAVE MET THE HAMPDEN ORDINANCE STANDARDS

The record evidence shows the Application meets the applicable submission requirements (Section 4.1.6), zoning and dimensional requirements (Section 3.2 Industrial District), and applicable review standards (Section 4.1.7, Section 4.2, and Section 4.4) of the Hampden Zoning Ordinance (the “Ordinance”).

I. The Ordinance Submittal Requirements are Satisfied.

With respect to submission requirements, below is a summary table demonstrating all submittal requirements have been satisfied.

Section 4.1.6 - Required Information on Plans	Requirement	Application Materials
Section 4.1.6.1	Scale of the map	<i>See</i> Sheets C-101 through C103 ¹
Section 4.1.6.2	Name of applicant	<i>See</i> Sheets C-101 through C103
Section 4.1.6.3	Boundaries of the tract of land.	<i>See</i> Sheets C-101 through C103
Section 4.1.6.4	Location of existing and proposed buildings and other structures, including use and proposed use thereof	<i>See</i> Sheets C-101 through C103
Section 4.1.6.5	Location of buildings on abutting properties or within three hundred (300') feet of the property line of the proposed development.	<i>See</i> Sheets C-101 through C103
Section 4.1.6.6	Location of existing public streets	<i>See</i> Sheets C-101 through C103
Section 4.1.6.7	Location of proposed access drives to the lot from public streets	<i>See</i> Sheets C-101 through C103
Section 4.1.6.8	Location and arrangement of proposed off-street parking and loading areas and their appurtenant drives and maneuvering areas	<i>See</i> Sheets C-101 through C103
Section 4.1.6.9	Location of existing and proposed pedestrian walkways	<i>See</i> Sheets C-101 through C103
Section 4.1.6.10	Location of existing and proposed utilities and easements thereof, including sanitary sewerage, water, and electricity	<i>See</i> Sheets C-101 through C103
Section 4.1.6.11	Location of existing natural drainage ways and proposed storm drainage facilities, including dimensions of culverts, pipes, etc	<i>See</i> Sheets C-101 through C103
Section 4.1.6.12	Location, intensity, type, size and direction of all outdoor lighting	<i>See</i> Sheets C-101 through C103
Section 4.1.6.13	Location and proposed use of areas proposed for outdoor recreation	<i>See</i> Sheets C-101 through C103
Section 4.1.6.14	Location and type of existing and proposed fences, hedges, and trees of twelve (12") inch diameter and over at a point four and one half (4.5') feet above ground level	<i>See</i> Sheets C-101 through C103; per the Section 4.1.6 of the Application, the entire site is wooded and all trees within the development envelope will be removed except for buffer areas. Trees outside the development envelope will be the subject to a conservation easement as part of a mitigation plan (<i>see Letter from CES (May 19, 2016), enclosing the Project Mitigation Plan</i>). The existing types of trees are red maple, balsam fir, white pine, white ash, and quaking aspen in upland areas, with red maple and balsam fir in forested wetland areas. (<i>See Letter from CES (May 19, 2016), enclosing additional Project Description Materials.</i>)
Section 4.1.6.15	Contour lines at appropriate intervals to show the effect on the land of existing and proposed grades for areas proposed to be excavated or filled	<i>See</i> Sheets C-101 through C103
Section 4.1.6.16	Location and size of signs and all permanent outdoor fixtures	<i>See</i> Sheets C-101 through C103
Section 4.1.6.17	Existing zoning	<i>See</i> Sheets C-101 through C103

¹ Per the letter from CES, Inc. dated May 2, 2016, with enclosures, Sheets C-101 through C-103 were revised and re-submitted to replace the original Sheets C-101 through C-103.

II. The Industrial District Zoning and Dimensional Standards are Satisfied.

The Project parcel is located in the Industrial District, which permits processing facilities having more than 5,000 square feet of gross floor area as a conditional use, such as the Project facility. As demonstrated on the Project plans and letter from Eaton Peabody dated April 8, 2016, the Project satisfies the applicable lot dimensions and special district regulations. (*See App. at Sheets C-101 through C-103; see also Letter from Eaton Peabody (April 8, 2016).*)

III. The Ordinance Review Standards are Satisfied.

The Ordinance identifies three categories of standards that apply to the Project: (1) standards governing site plan review; (2) conditional use standards; and (3) performance standards. Below is our detailed analysis of the record evidence that shows each applicable standard in these three categories has been met.

A. Standards Governing Site Plan Review

1. Section 4.1.7.1 – “The proposed use, buildings, design and layout meets the provisions of all applicable regulations and ordinances of the Town of Hampden and meets the intent of the comprehensive plan, as amended.”

As set forth above in the submittal requirements table, and below on each specific review standard, the Project satisfies all applicable standards of the Ordinance. The Applicants acknowledge separate Town approvals are contemplated by the Project’s design under the Town Ways Ordinance and Sewer Ordinance from other Hampden reviewing authorities (e.g., the Town Council).

2. Section 4.1.7.2 – “The proposed buildings, design, and layout shall, consistent with generally acceptable engineering and architectural design practices, be properly integrated with the terrain and the existing buildings in the vicinity which have a visual relationship to the proposed buildings. Special attention shall be paid to the bulk, location, and height of the building(s) and such natural features as soil type, slope and drainage ways.”

As set forth in Sheets C-101 through C-103 and Section 4.1.7 – 2 of the Application, the Project development site is located in an industrial zoned area of the Town that is wooded and undeveloped. The nearest development is the interstate, approximately 1,800 feet away, and a residential development approximately 3,400 feet away. The Project facility is thus surrounded by a very large wooded buffer that, in combination with the topography, screens the development to fit in with the existing terrain and surrounding areas. The Project building itself is an industrial building, similar to the other industrial buildings in the surrounding areas, and is located on the Project parcel on the upland area to avoid wetland soils, low lying areas, and drainage ways. (*See App. at C-101 through C-103, Section 4.1.7-2.*)

3. Section 4.1.7.3 – “The proposed site layout shall provide for safe ingress and egress to and from public and private roads by providing adequate location, numbers, and control of access points including sight distances, turning lanes, and traffic signals, if necessary. Factors for the planning board to consider in this determination are the turning movements in relation to traffic flow, proximity to intersections, location and access of off street parking, provisions of pedestrian traffic, access by emergency vehicles, and minimization of pedestrian-vehicular contacts”

The Project was issued a MDOT entrance permit on March 22, 2015, demonstrating the it has safe ingress and egress to and from the access road onto Coldbrook Road with adequate sight distances, turning lanes, and traffic signage (e.g., stop sign). (*See App. at Appendix 1; see also App. at C-201.*) Ingress and egress from the Project site onto the access road itself is also safe. The access road is a dead-end road terminating at the Project facility with adequate sight distances, turning lanes, and traffic signage, with adequate access for emergency vehicles and minimal contacts between vehicles and pedestrians. (*See App. at Appendix 1, Sheet C-204; see also Letter from CES (May 2, 2016), enclosing a Traffic Impact Study.*)

4. Section 4.1.7.4 – “The layout and design of on-site vehicular and pedestrian traffic patterns shall provide for safe interior circulation, access by emergency vehicles, separation of pedestrian and vehicular traffic and storage of plowed snow.”

As set forth in Sheets C-101 through C-103, the site is designed for safe maneuvering of trucks and other motor vehicles, such as passenger cars and emergency vehicles. The parking lot is separated from the truck traffic in order to minimize contacts between any vehicles and pedestrians going to and from the Project building. There are also sufficient open areas within the development envelope to handle and stockpile snow. (*See App. at C-101 through C-103; see also Letter from CES (May 2, 2016), enclosing a Traffic Impact Study.*)

5. Section 4.1.7.5 – “Signs and exterior lighting shall be in accordance with the regulations in this Ordinance and in addition shall be so designed and located so as not to present a hazard, glare, reflection or unattractive appearance on or to adjacent properties and the traveling public.”

One unlit sign at the northeast side of the entrance to the Project facility is proposed, which will not exceed 100 square feet in size. (*See App. at Section 4.1.7-5.*) This sign will also not exceed 25 feet in height, and be erected in accordance with State Law (23 M.R.S. §§ 1901-1925) and Ordinance Section 4.8.2.

The Project facility will have lighting as designed and laid out in the lighting plan. (*See App. at Appendix 8.*) The location of lights shows there are no impacts on adjacent properties and the traveling public, as lighting is all contained within the Project parcel.

6. Section 4.1.7.6 – “Buildings shall, consistent with generally acceptable engineering and architectural design practices, be designed and located so as to be properly integrated with the existing topography, terrain, and other natural features of the site.”

See Part III.A.2 above, addressing compliance with Section 4.1.7.2 that has similar Ordinance language to Section 4.1.7.6 that also addresses buildings.

7. Section 4.1.7.7 – “The development shall be designed and constructed to preserve the landscape in its natural state in so far as practicable by minimizing earthmoving, erosion, tree clearance, disturbance of existing vegetation, and the destruction of natural amenities.”

As set forth in Sheets C-101 through C-103 and Sheets C-201 through C-204, the Project is designed to minimize earthmoving, erosion, tree clearance, disturbance of vegetation, and any destruction of natural amenities. The access road is designed to follow an existing road footprint to the Project parcel. Further, the development envelope is focused on the upland area of the Project parcel, where cuts and fills are minimized, and the remaining 80+/- acres of the Project parcel will be conserved in an undeveloped state. (See App. at C-101 through 104, C-201 through 204, and *Letter from CES (May 19, 2016), enclosing the Project Mitigation Plan.*)

8. Section 4.1.7.8 – “All manufactured slopes, other than those constructed of stone, concrete or other impervious materials shall be planted or otherwise protected from the effects of storm runoff erosion. All graded slopes shall be of a character so as to cause the slope to blend with the surrounding terrain and development.”

As set forth in the Application, all manufactured slopes will be stabilized with vegetation and rip rap at the outlet of culverts, and graded slopes will be conducted to blend with the surrounding terrain and development. (See App. at Section 7.1.7-8, Appendix 2, Appendix 3, Sheets C-101 through C-103, and Sheets C-201 through C-204.)

9. Section 4.1.7.9 – “Adequate provisions shall be made for surface drainage so that removal of surface waters will not adversely affect neighboring properties, downstream water quality, soil erosion, or any public or private storm drainage system. Whenever possible, on-site absorption shall be utilized to minimize discharges from the site. In reviewing the adequacy of surface water drainage plans, the planning board shall emphasize protection of flood plains, reservation of stream corridors, establishment of drainage rights-of-way and the adequacy of the existing system, and the need for improvements, both on-site and off-site, to adequately control the rate, volume, and velocity of storm drainage. In addition, the planning board shall review maintenance responsibilities to determine their adequacy.”

Stormwater management for the Project site is designed and will be constructed and maintained consistent with the Chapter 500 Stormwater Management regulations of the MDEP that require treatment of at least 95% of impervious areas and at least 80% of developed area. Further, post-development runoff from the site is designed and will be constructed and maintained so that it does not exceed pre-development runoff conditions. The Project also utilizes natural features and vegetated underdrained soil filters to treat stormwater before it leaves the Project site. (See App. at Section 4.1.7-9, Appendix 2, and Appendix 3.)

The Project’s access road is also designed and will be constructed and maintained consistent with Chapter 500 Stormwater regulations of the MDEP. These require treatment of at least 75% of impervious area and at least 50% of the total developed area, which the Project satisfied by utilizing six Filterra tree box filters. (See App. at Section 4.1.7-9, and Appendix 3.)

All stormwater management measures for the Project will be properly constructed and maintained. (See App. at Appendix 4.)

10. Section 4.1.7.10 – “Adequate provisions shall be made to mitigate any adverse impact on existing scenic or natural beauty, rare or irreplaceable historic sites, or other features of importance to the community.”

The Project does not involve any known existing scenic or natural beauty, rare or irreplaceable historic sites, or other features of importance to the community, per inquiry with the Maine Natural Areas Program and Maine Historic Preservation Commission. (See App. at Section 4.1.7.11.)

11. Section 4.1.7.11 - The development shall not impose an unreasonable burden on, nor exceed the capacity of, utilities such as sewer, sanitary and storm drains, water lines, or on municipal services such as, but not limited to, fire, police, solid waste disposal, schools, open spaces, recreational programs and facilities, roads, or other municipal services and facilities.

As set forth in utility letters, there is no unreasonable burden or capacity issues regarding utilities or municipal services created by the Project. (See App. at Appendix 5; see also *Letter from CES (April 8, 2016), enclosing letters from Hampden Public Works and Bangor Gas, and Letter from CES (May 19, 2016), enclosing letter from Emera Maine.*)

12. Section 4.1.7.12 – “Exposed storage areas, exposed machinery installations, service areas, truck loading areas, utility buildings and structures, and similar accessory areas and structures shall have sufficient setbacks and screening to provide an audio/visual buffer sufficient to minimize any adverse impact on other land uses within the development area and surrounding properties.”

In addition to meeting all applicable Ordinance setbacks, the Project facility is 3,400 feet from the nearest residential area and surrounded by a large wooded area (including the conservation area), which is more than sufficient to provide audio/visual screening on other land uses in the development area and surrounding properties (which are either undeveloped or used for industrial purposes). (See App. at Sheets C-101 through C-103.) Moreover, the majority of all activity occurring at the Project facility (e.g., loading and unloading; storage; and machinery) is all contained inside the Project building, which provides even further screening for, among other things, noise attenuation and visual screening. (See App. at C-103, Section 4.1.7-12; testimony of Kyle Sullivan and Sean Thies, P.E. (April 13 & May 11, 2016); Project General Arrangement Process Diagram.)

13. Section 4.1.7.13 – “The proposed use, buildings, and site development shall have no unreasonable adverse effect on surface water quality ground water quality, ground water quantity, soil quality, or air quality.”

As noted above, the Project development envelope is located in the upland area of the Project parcel, and the Project facility is designed and will be constructed and maintained consistent with stormwater management regulations of the MDEP. The Project also utilizes municipal water and sewer, and therefore will not impact ground water quality or quantity. Further, the Project is designed and will be constructed and maintained such that there will be no unreasonable adverse effect on air quality, as also required by the MDEP air regulation that the Project must satisfy. (See App. at Appendix 9; Appendix 6; see also *Letter from CES (May 19, 2016), enclosing the Project Operations and Maintenance Manual and detailed Air BACT Analysis.*)

B. Conditional Use Standards

1. Section 4.2.3.1 – “The proposed use is designed and sited so as to comply with all provisions of this Ordinance, and the applicant shall demonstrate that the use will be operated and maintained in compliance with the performance standards set forth in Article 4.4 of this Ordinance.”

As set forth above and below in this memorandum, the Project complies with all provisions of the Ordinance including the performance standards in Article 4.4.

2. Section 4.2.3.2 – “The proposed use will provide adequate and safe provision for the collection, storage, and disposal of all wastes generated or stored on the site.”

As a solid waste processing facility, the Project itself provides for collection, storage, and disposal of all wastes generated or stored at the site. (See App. at Site Plan-Permitted/Conditional Use Application Form and Section 4.1.7-1; *testimony of Sean Thies, P.E. (April 11, 2016)*; see also App. at Section 4.2.3-2 and *Letter from CES (May 19, 2016), enclosing the Project Operation and Maintenance Manual.*)

3. Section 4.2.3.3 – “The proposed use will not significantly devalue abutting property or property located across a public or private way. In making its determination, the board shall take into consideration the following facts: the type, size, bulk, height, architecture, and use of the structure proposed, the topography of the area, the market value of the surrounding real estate, the availability of utilities, traffic conditions, and other relevant facts.”

The property abutting and located across the Project access way is undeveloped land in the Town’s Industrial Zone. The Project, by constructing an access road with associated utilities, has the potential to increase the value of abutting properties and property located across the access way. Furthermore, the conservation of 80 +/- acres of land also presents the potential to increase the value of abutting properties and property located across the access way.

4. Section 4.2.3.4 – “The proposed use will not cause unreasonable noise, odors, dust, gas, fumes, smoke, light or other annoying or dangerous emissions. In making its determination, the board shall require the applicant to demonstrate that none of the foregoing will interfere with the peaceful use and enjoyment of residential properties located in the area of the proposed use.”

The Project facility is designed and will be constructed and maintained such that noise generating equipment and solid waste handling and processing all occur inside the Project building. (See App. at Sheet C-103; see also *Project General Arrangement Process Diagram.*) Moreover, the Project access road and areas surrounding the Project building will be paved, and the Project’s operations and maintenance activities require control of any dust that may be

generated. (See App. at Appendix 9; see also *Letter from CES (May 19, 2016), enclosing the Project's Operations and Maintenance Manual.*) Further, as previously noted, the Project lighting plan contains all light on the Project parcel, which is limited to one area as the majority of the parcel will be conservation area (80 +/- acres).

Regarding odors, all transport trucks associated with the Project must comply with MDOT regulations that require such trucks to be sealed. If transport trucks are observed to potentially be out of compliance, they will be warned and/or reported to MDOT. Furthermore, regarding truck routes, MRC and Fiberight will maintain a Preferred Truck Route Policy that directs trucks to utilize certain identified state and federal highways as depicted in the Identified Haul Routes Plan to avoid the intersection of Route 1A and Western Avenue and secondary streets and roads of Hampden. The Preferred Truck Route Policy with corresponding Identified Haul Routes Plan will be provided to all contractors that transport solid waste to the Project facility, and be available at the facility itself and provided to drivers. In addition, municipalities or other entities that send solid waste to the Project facility will be provided with the Preferred Truck Route Policy and associated Identified Haul Routes Plan, with a written request to require all contractors hauling for such municipalities or entities to follow the Preferred Truck Route Policy and Identified Haul Routes Plan. The combination of these efforts (a) help ensure trucks comply with MDOT solid waste containment regulations; and (b) direct travel on identified haul routes that avoid developed areas of Hampden. (*Testimony of Kyle Sullivan (April 13 & May 11, 2016; Letter from CES (May 19, 2016), enclosing MRC/Fiberight Truck Route Policy.*)

With respect to solid waste handled and processed at the Project facility, these activities are all performed inside the Project building. (See App. at Appendix 6, *Letter from CES (May 2, 2016), enclosing April 8, 2016 Response that includes excerpts of the Project Operation and Maintenance Manual; see also Letter from CES (May 19, 2016), enclosing the entire Project Operations and Maintenance Manual.*) As detailed in the Application materials and testimony of Kyle Sullivan, trucks enter the Project facility through a high speed automatic bay door that promptly opens and closes (less than 20 seconds to open and close, with three automatic bay doors to reduce queues). In addition, regarding any truck queues at the Project facility, any trucks transporting solid waste with the potential for more odorous characteristics are given priority in order to get them inside the Project building. The Project building is also outfitted with an industrial fan system that continuously maintains negative air pressure within the building to keep any odors inside. Finally, the Project facility is designed with capacity for two days of receipts of solid waste and two days of primary processed materials. This significantly limits the amount of time solid waste is on the tipping floor, which further reduces any potential nuisance odors. A comparable design capacity and tipping floor time exists at the EcoMaine facility that, as stated in the materials, has never had an odor complaint and which has residences much closer to that facility in comparison to the Project. (See App. at Appendix 6; *Letter from CES (May 2, 2016), enclosing April 8, 2016 Response that includes additional information on odor control operations and maintenance; see also Letter from CES (May 19, 2016), enclosing the Project's Operations and Maintenance Manual.*)

It also bears emphasis that the Project facility self-generates its own electricity, and will also be interconnected with the electrical grid (with required interconnection equipment to comply with Emera Maine standards) as a back-up power source. In addition, the Project include

equipment redundancies for all material components to ensure efficient operations to prevent any unexpected down times. Moreover, in the unlikely occurrence of a catastrophic event, the Project facility has the ability to remove solid waste stored inside the building to a separate location outside the boundaries of Hampden (e.g., Norridgewock), so solid waste residence time at the Project building is kept at a minimum to avoid any potential nuisance odor generation. *(Testimony of Sean Thies, P.E. and Kyle Sullivan (April 13 & May 11, 2016).)*

Furthermore, trained personnel will be conducting periodic post construction monitoring of the Project facility, including daily inspections in the first 6 months of operations (which must include, regardless of timing, summer months). Thereafter, provided no odor issues are identified, weekly monitoring of the Project facility shall be conducted for the life of the Project. *(See Letter from CES (May 2, 2016), enclosing April 8, 2016 Response that includes excerpts of the Project Operation and Maintenance Manual; see also Letter from CES (May 19, 2016), enclosing the full Project Operation and Maintenance Manual.)*

Finally, the Project facility has and will follow a comprehensive Complaint Response Protocol that provides a clear process for complaints to be submitted, processed, and adequately addressed, including any corrective actions, within a 30-day time frame. *(See Letter from CES (May 19, 2016), enclosing the MRC/Fiberight Complaint Response Protocol.)*

Accordingly, the collective approach above to odor, through the Project's location (far away from developed areas, including residences), design, operations, maintenance, backups, equipment redundancies, post construction monitoring, and complaint response protocol, provides ample evidence that the Project facility will not cause unreasonable odors.

5. Section 4.2.3.5 – “The proposed use will not cause or aggravate hazardous traffic congestion on contiguous or adjacent streets.”

The Project will not cause or aggravate hazardous traffic congestion on contiguous or adjacent streets, as demonstrated by the numerous traffic analyses and information submitted to the Planning Board in this proceeding.

The Project has already secured a MDOT entrance permit where the access road intersects with the Coldbrook Road. *(See App. at Appendix 1.)* At this intersection, the sight distance to the left is over 2,000 feet and is 740 feet to the right, providing more than adequate sight distance for safe and efficient access to and from the Coldbrook Road. *(See App. at Appendix 1.)*

Although traffic generated from the Project is not significant enough to warrant a traffic study for a MDOT Traffic Movement Permit, the Applicants have nonetheless performed a comprehensive analysis on potential traffic impacts. This included detailed research on the historical traffic data from the MDOT, solid waste truck traffic within the MRC region, field studies involving traffic counts, and a Traffic Impact Study. *(See App. at Appendix 1; Letter from CES (May 2, 2016), enclosing a Traffic Impact Study; see also Letter from CES (May 19, 2016), enclosing Traffic Impact Study Addendum 2.)*

With respect to truck traffic, the majority of trucks will travel to and from the Project facility I-95 and Route 202 without traveling through the intersections of Route 1A and Western Avenue and Western Avenue and Route 202 (i.e., away from developed areas of Hampden). To further deter truck traffic at through Route 1A/Western Avenue and Western Avenue/Route 202 intersections, the Applicants will implement a Preferred Truck Route Policy with corresponding Identified Haul Routes Plan (with specific requests to municipalities and any other entities to require these routes as part of any transport contracts) to avoid any trucks traveling through Route 1A/Western Avenue and Western Avenue/Route 202 intersections. This Preferred Truck Route Policy will also be provided to all transporters, and be available and provided to specific truck drivers at the Project facility. (*Letter from CES (May 19, 2016), enclosing MRC/Fiberight Truck Route Policy.*)

Based upon the detailed Traffic Impact Study, corresponding traffic data, and implementation of the Preferred Truck Route Policy, there is ample evidence that demonstrates the Project has been designed to avoid and will not generate traffic that would cause or aggravate hazardous traffic congestion on the access road or adjacent streets. Simply stated, the Coldbrook road and its intersections with Route 202 and I-95 are designed to handle both passenger cars and truck traffic associated with the Project facility, whose safety is supported by the historical traffic data within this corridor including at specific intersections.

6. Section 4.2.3.6 – “The proposed use will not deny light and air to surrounding properties.”

As set forth in Sheets C-101 through C-103, the Project will not deny light and air to surrounding properties. (*See App. at Sheets C-101 through C-103.*)

7. Section 4.2.3.7 – “The proposed use will: (a) Maintain the existing level of safe and healthful conditions; (b) not cause water pollution, erosion, or sedimentation; (c) not have an adverse impact on spawning grounds, fish, aquatic life, bird or other wildlife habitat; (d) conserve shore cover and visual, as well as actual, access to water bodies.”

As detailed above and below in this memorandum regarding environmental standards, the Project will maintain existing levels of safe and healthful conditions as it is self-contained, not cause water pollution, erosion, or sedimentation, not have any adverse impact on any spawning grounds, fish, aquatic life, bird or other wildlife habitation, and is not located proximate to any water bodies.

8. Section 4.2.3.8 – “The applicant has adequate financial and technical capacity to meet the requirements of this Ordinance and any conditions imposed by the planning board under the provisions of Article 4.2.4.”

As set forth in the Application materials, the Co-Applicants, MRC and Fiberight, have adequate financial and technical capacity to meet the requirements of this Ordinance and any reasonable conditions of approval. (*See App. at Section 4.2.3-8, Appendix 7.*)

C. Performance Standards

1. Section 4.4.1 – “Odorous Matter - The emission of odorous or toxic matter in such quantities as to be readily detectable at any point along lot lines so as to produce a public nuisance or hazard is prohibited. Such activities as might produce such emission, or which might produce smoke, dust, or other particulate matter, shall comply with applicable minimum Federal, State and local requirements and detailed plans for abatement shall be submitted to the code enforcement officer for approval before a building permit is granted. Violations of this standard shall be considered a public nuisance.”

As detailed and analyzed above, the Project will not cause any unreasonable odors or emissions, which the Applicants interpret as a more restrictive standard than emissions or odors “at any point along lot lines so as to produce a public nuisance or hazard” (which, if present, would be one type of condition that results in unreasonable odors or emissions). A public nuisance is not defined in the Ordinance, but is commonly considered to occur when there is “an unreasonable interference with a right common to the general public.” *Restatement (Second) of Torts § 821B*; see also *Bragg v. Soley*, 2004 W.L. 159876 (Crowley, J.) (Me. Super. Ct. May 26, 2004) (citing the Restatement). Circumstances that may sustain a holding that an interference with a public right is unreasonable include the following: (a) Whether the conduct involves a significant interference with the public health, the public safety, the public peace, the public comfort or the public convenience, or (b) whether the conduct is proscribed by a statute, ordinance or administrative regulation, or (c) whether the conduct is of a continuing nature or has produced a permanent or long-lasting effect, and, as the actor knows or has reason to know, has a significant effect upon the public right. *Restatement (Second) of Torts § 821B*.

Here, the Project parcel is surrounded by privately held land, on which the public has no common rights, and a dead-end access road that will provides ingress and egress for trucks and workers traveling to the Project facility. Accordingly, the only possible public rights implicated is the right to travel to the end of a dead-end road, which the Project does not, in any manner, unreasonably interfere with that would potentially cause a public nuisance.

Moreover, as noted above, the Project must comply with all applicable Federal, State, and local requirements, such as the issuance of an air emissions license from the MDEP, which will be provided to the code enforcement officer before issuance of a building permit.

2. Section 4.4.2 – “Electromagnetic Interference - No use, activity, or process shall be conducted which produces electromagnetic interference in the transmission or reception of electrical impulses beyond the lot line, including radio and television. Provided that wireless telecommunications facilities as defined in Article 7.2 shall be subject to Federal Communications Commission (FCC) requirements, not to provisions of this section with respect to the environmental or health effects of electromagnetic or radio frequency emissions.”

The Project does not produce any potential electromagnetic interference. (*See App. at Section 4.4.2; see also Letter from CES (May 19, 2016), enclosing the Project’s Operations and Maintenance Manual that describes its operations.*)

3. Section 4.4.3 – “Fire Safety - All uses, activities, structures, and processes shall comply with applicable Federal, State and local fire safety standards. Upon request of the code enforcement officer, detailed plans for fire safety shall be submitted for approval before a building permit is granted.”

The Project has been designed and will be constructed and maintained with all applicable Federal, State, and local fire safety standards. The Applicants acknowledge that the Project facility will require approval from the State of Maine Fire Marshal’s Office regarding fire safety standards prior to the issuance of any building permit.

CONCLUSION

As set forth above, MRC and Fiberight have provided relevant, credible, and substantial evidence on all applicable standards, demonstrating the Project’s full compliance with the Hampden Zoning Ordinance

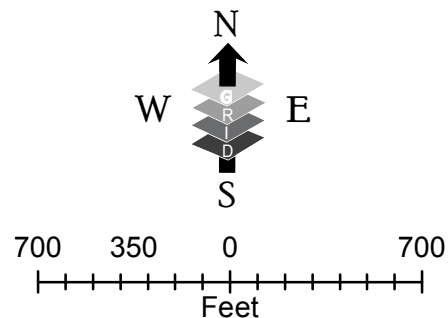
We therefore respectfully request that the Planning Board approve the Application.

Dated in Bangor, Maine, this 19th day of May, 2016.

By /s/Jonathan A. Pottle
Jonathan A. Pottle, Esq.

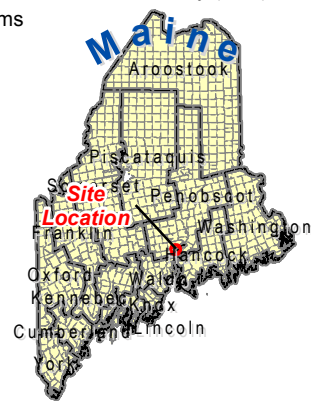
Eaton Peabody
80 Exchange Street
P.O. Box 1210
Bangor, Maine 04402-1210
(207) 947-0111

Mitigation Plan



Legend

- Approximate Proposed Road Location
- Approximate Proposed Building Location
- Approximate Proposed Facility Property Boundary
- Parcels
- Town-owned Lands
- Conserved Lands
- National Wetlands Inventory (NWI)
- Streams

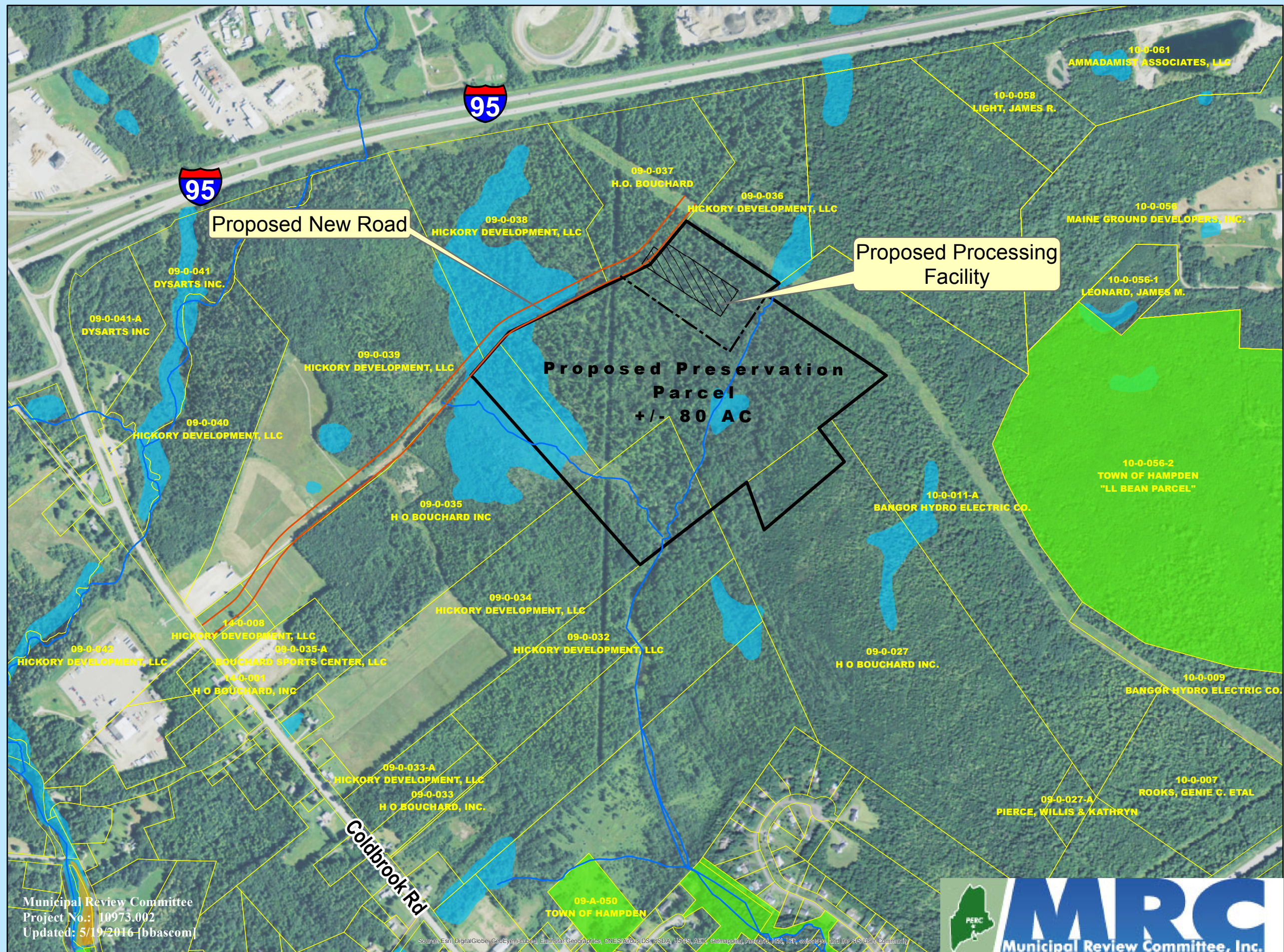


MAP NOTES:

- 1: SITE DATA DEVELOPED BY CES, INC., DECEMBER, 2015.
- 2: ABUTTING PARCEL DATA AND LOT NUMBERS COURTESY OF THE TOWN OF HAMPDEN. PARCEL IDS ARE MAP AND LOT NUMBERS POPULATED FROM THE (MAP_LOT) FIELD. ALL PARCEL BOUNDARIES SHOULD BE CONSIDERED APPROXIMATE. THIS MAP DOES NOT REPRESENT A SURVEY.
- 3: OWNERSHIP RECORD OF LOT 09-0-037 IS BASED OFF OF THE LATEST ASSESSMENT RECORD WHICH WAS UPDATED MORE RECENTLY THAN ARCHIVE GIS DATA RECORDS.
- 4: BASE MAPPING LAYERS ARE SERVER-BASED IMAGERY, TOPOGRAPHIC IMAGES, OR TERRAIN DEPICTIONS COURTESY OF ESRI. ACQUIRED OCT., 2014.
- 5: MAP IS PROJECTED USING THE UNIVERSAL TRANSVERSE MERCATOR (UTM) PROJECTION, ZONE 19 NORTH, METERS AND REFERENCES THE NORTH AMERICAN DATUM OF 1983 (NAD83).
- 6: NORTH ARROW IS REFERENCED TO GRID NORTH.
- 7: INTENDED FOR REFERENCE PURPOSES ONLY. THE MRC & CES, INC. AND THEIR AFFILIATES ARE NOT RESPONSIBLE FOR THE MISUSE OF THIS MAP OR DATA DEPICTED HEREIN. ALL ACREAGES ARE APPROXIMATE.



Municipal Review Committee
Project No.: 10973.002
Updated: 5/19/2016 [bbascom]



Source: Esri, DigitalGlobe, GeoEye, AeroMap, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, SRTM3, and the GIS User Community

Gayle Russell

From: KING, DONALD <don.w.king@emeramaine.com>
Sent: Friday, May 06, 2016 10:35 AM
To: Sean Thies
Subject: RE: Fiberight - Hampden

Sean,

Based on preliminary study results, Emera Maine can support the projected load requirement of 4.75MW (100% power factor) at the planned site off Coldbrook Road. The following information will be required to confirm service:

- (1) Emera Maine Load Sheet plus detailed load list
- (2) Reactive power requirement
- (3) Soft-starts included for all large motors
- (4) Power one-line diagram
- (5) Interconnect Application for generator interconnect (Non-export is Level 3 under Chapter 324).

Don King

Senior T&D Construction Planner

Emera Maine

T: 207-973-2696 | C: 207-949-3957 | F: 207-973-2655

E: don.w.king@emeramaine.com

www.emeramaine.com

From: Sean Thies [<mailto:sthies@ces-maine.com>]
Sent: Friday, May 06, 2016 8:04 AM
To: KING, DONALD
Subject: Fiberight - Hampden

Hi Don,

Any luck getting a capacity statement as we discussed on Monday?

Sean Thies, P.E. ♦ Senior Project Manager
P 207.989.4824 | F 207.989.4881 | C 207.341.0588

CES_{INC}

Engineers ♦ Environmental Scientists ♦ Surveyors

465 South Main St., P.O. Box 639, Brewer, Maine 04412 | www.ces-maine.com

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SITE LEASE

This Site Lease (the “*Site Lease*” or “*Lease*”) is made and executed on this ____ day of _____, 2016 (the “*Effective Date*”), by and between the Municipal Review Committee, a Maine nonprofit corporation with offices at 395 State Street, Ellsworth, Maine 04605 (the “*MRC*” or “*Landlord*”) and FIBERIGHT, LLC, a Delaware limited liability company with offices at 1450 South Rolling Road, Baltimore, Maryland 21227 (“*Fiberight*” or “*Tenant*”).

WHEREAS, the Landlord is or will be on or before the Effective Date the owner of a certain lot or parcel of land containing approximately 90 acres located on the easterly side of the Coldbrook Road in Hampden, Maine, in substantially the same location and configuration as generally depicted on **Exhibit A**, and bounded northeasterly by land and/or easements now or formerly of Emera Maine (formerly Bangor Hydro Electric Company), bounded southerly and southwesterly by land now or formerly of H.O. Bouchard, Inc., and bounded northerly by the centerline of a private road leading from Coldbrook Road to the northeasterly corner of the Property in substantially the same location as depicted on **Exhibit A** (the “*Property*”); and

WHEREAS, the Landlord and the Tenant have entered into a Development Agreement dated February 4, 2015 (the “*Development Agreement*”) pursuant to which Fiberight proposes to develop, construct, maintain and operate on the Property a municipal solid waste processing facility (the “*Facility*”), as more particularly described in **Exhibit B**; and

WHEREAS, the Landlord and the Tenant have entered into a Master Waste Supply Agreement as of December____, 2015 setting forth the terms on which members of the MRC will deliver waste to the Facility for processing; and

WHEREAS, the Landlord has entered into Joinder Agreements with Joining Members pursuant to which each Joining Member has agreed to deliver waste to the Facility pursuant to the Master Waste Supply Agreement; and

WHEREAS, the Tenant has determined that such Joinder Agreements will assure delivery of a sufficient quantity of waste to the Facility in order for the Tenant to proceed with financing and construction of the Project; and

WHEREAS, the Tenant and the Landlord are sufficiently advanced in the permit acquisition process to allow the Project to proceed and, accordingly, wish to enter into this Lease as contemplated by the Development Agreement; and

WHEREAS, the Board of Directors of the Landlord and the duly authorized managers of the Tenant have each approved the execution and delivery of this Lease; and

WHEREAS, the Parties acknowledge that the Tenant's use of the Property and the Leased

Premises is to be at all times subject to terms and conditions imposed by applicable law or regulation including, without limitation, rules and regulations of the Town of Hampden, Maine, and the Maine Department of Environmental Protection;

NOW, THEREFORE, in consideration of the mutual promises of the parties contained herein, and other good and valuable consideration each to the other paid, receipt of which hereby is acknowledged, the parties hereby agree as follows:

SECTION 1.0 DEFINITIONS

Capitalized terms when used herein shall have the meanings set forth below:

"Affiliate" means a person or entity controlled by, or under common control with, another person or entity.

"Capital Improvements" means alterations, improvements and changes to the Facility other than those considered normal maintenance or equipment replacement and which either (i) cause a material change in the process flow for the Facility as described in **Exhibit B**, (ii) have a material impact on Facility performance or compliance capability, or (iii) trigger a need for a modification to any of the Facility Permits

"Change in Law" means any of the following that has, or could reasonably be anticipated to have, a material affect on the rights or obligations of a party under this Agreement: (a) the adoption, modification, promulgation or interpretation after the date of the Financial Close of any federal, state or local statute or regulation or ordinance relating to the Facility or the Project Site that is inconsistent with and more stringent than what was in effect on the Financial Close; (b) the imposition after the date of the Financial Close of any material new condition or requirement in connection with the issuance, renewal, or modification of any governmental permit, license or approval relating to the Facility or the Project Site that is inconsistent with and more stringent than what was in effect as of the Financial Close or that had been agreed to in any application of the Tenant or Landlord for official permits, licenses or approvals that was pending as of the date of the Financial Close; (c) a condemnation or taking by eminent domain having a material adverse effect on the Property or the Facility; or (d) an order or judgment of any federal, state or local court, administrative agency or governmental body relating to the Facility or the Project Site that is inconsistent with and more stringent than the law or any legal requirement in effect as of the date of the Financial Close; provided that changes in federal or state tax laws or tax credits or incentives shall not be construed as a Change in Law.

"Commercial Operation Date" has the meaning set forth in Section 7.4.

“Construction Access Date” has the meaning set forth in Section 7.2.

“Construction Date” has the meaning set forth in Section 6.

“Contract Year” shall mean the twelve (12) month period that begins on the first day of the calendar month that immediately follows the Commercial Operation Date and each twelve (12) month period thereafter, provided that the last Contract Year shall end as of the date of termination of this Site Lease.

“Development Agreement” means the Development Agreement between the Landlord and the Tenant dated February 4, 2015.

“Effective Date” means the date of this Lease as set forth in the Preamble.

“Environmental Attributes” shall include renewable identification number products (RINs), carbon emissions offsets or greenhouse gas reduction credits, renewable energy certificates associated with the production of electricity or other products from biogas, and similar products whose value is created by the processing of solid waste or production of biogas or other products at the Facility.

“Environmental Laws” has the meaning set forth in Section 23.

“Event of Default” has the meaning set forth in Section 18.

“Excused Delay Period” means the period of delay, if any, in achieving the Commercial Operation Date beyond April 1, 2018 attributable to delays not under the control of the Tenant, including delays in the Construction Access Date and the Infrastructure Completion Date as described in Section 7.2 hereunder, or delays in the supply of Acceptable Waste for the Performance Test as described in Section 7.4 hereunder, but excluding performance of subcontractors and equipment suppliers not deemed due to Force Majeure.

“Extension Term” has the meaning set forth in Section 3.

“Facility” has the meaning set forth in the Preamble.

“Facility Permits” means permits, approvals, licenses and directives applicable to the Facility issued by federal, state or local government authorities pursuant to applicable law, rule or regulation.

“Financial Close” has the meaning set forth in Section 6.5.

“First Responders” has the meaning set forth in Section 5.8.

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SITE LEASE

“Force Majeure” means any unforeseeable act, event or condition occurring after the Effective Date that has had, or may reasonably be expected to have, a material adverse effect on the rights or the obligations of either party under this Agreement or on the Facility, the Property or the Infrastructure or on the construction, ownership, possession or operation of the Facility, the Property or the Infrastructure, provided that such act, event or condition (a) is beyond the reasonable control of the party relying thereon as justification for not performing an obligation or complying with any condition required of such party under this Agreement; (b) is not the result of willful or negligent action, inaction or fault of the party relying thereon; and (c) which, by the exercise of reasonable diligence, such party is unable to prevent or overcome.

Acts, events or conditions of Force Majeure shall include, without limitation; (i) acts of God, epidemics, landslides, lightning, earthquakes, fires, hurricanes, floods, high-water washouts, and extraordinary storms (but excluding reasonably foreseeable weather conditions); (ii) a strike, work slowdown or similar industrial or labor action not exclusive to the Facility (iii) acts of the public enemy, wars, blockades, insurrections, riots, arrests and restraints by governments, civil disturbances, sabotage, and acts of terrorism or similar occurrences; (iv) catastrophic events such as explosions, breakage or accident to machinery or lines of pipe caused by the foregoing; (v) condemnation or taking by eminent domain of the Property or the Facility, in whole or in part, and (vi) a Change in Law. Force Majeure shall not include changes in market conditions for the supplies to or products of the Facility, and shall not include changes in the cost of the supplies, materials or labor needed to construct or operate the Facility, or that reduce the profitability of the Facility, unless specifically attributable to a specific Force Majeure event that affects the non-performing party as enumerated above.

“Force Majeure Plan” means a plan developed in compliance with the requirements of Section 17.3.

“Hazardous Materials” has the meaning set forth in Section 23.

“Incurable Lease Defaults” has the meaning set forth in Section 18.1.

“Indemnified Parties” has the meaning set forth in Section 14.1.

“Infrastructure” means the access road to be constructed from Coldbrook Road to the Project Site and water and sewer lines constructed to serve the Project Site

“Infrastructure Completion Date” has the meaning set forth in Section 7.2.

“Initial Term” has the meaning set forth in Section 3.

"Investor" means any person or entity identified by the Tenant as holding an equity interest in the Tenant entitling such holder to an interest in profits of not less than 25%.

"Joining Member" means a municipality or other entity that has entered into a Joinder Agreement with the MRC pursuant to which it is obligated to deliver waste to the Facility for processing under the Master Waste Supply Agreement.

"Landlord" has the meaning set forth in the Preamble hereof.

"Law" means a federal, state or local statute, ordinance, regulation, rule or order issued by a governmental authority with jurisdiction over its subject matter.

"Lease" or **"Site Lease"** means this site lease.

"Leased Premises" has the meaning set forth in Section 2 and **Exhibit A**.

"Master Waste Supply Agreement" means the Master Waste Supply Agreement entered into by the Landlord and the Tenant dated [December 31, 2015] pursuant to which Joining Members will deliver waste to the Facility for processing or any successor agreement.

"MSW" means municipal solid waste.

"Out-of-State Waste" means MSW generated outside of the State of Maine.

"Performance Standards" means the standards referenced in Section 7.4.

"Performance Test" means the test described in Section 7.4.

"Permitted Uses" has the meaning set forth in Section 2 hereof.

"Pre-Construction Condition" means the physical and environmental condition of the Leased Premises on the Effective Date.

"Project Site" has the meaning set forth in Section 2 and **Exhibit A**.

"Property" has the meaning set forth in the Preamble.

"Property Permits" has the meaning set forth in Section 5.

"Related Entity" has the meaning set forth in Section 10.3.

“**Rent**” has the meaning set forth in Section 4 and **Exhibit D** hereof.

“**Substantial Damage**” has the meaning set forth in Section 23.

“**Tax Incentives**” means credits, deductions, rebates or other measures granted by a taxing authority which have the effect of reducing the taxes or assessments which otherwise would be imposed on the Tenant or its Affiliates, business partners or other entities that would realize the benefits of such incentives; the Leased Premises; or the Project; by such taxing authority.

“**Tenant**” has the meaning set forth in the Preamble hereof.

“**Tenant Permits**” has the meaning set forth in Section 6.

“**Tenant’s Work**” has the meaning set forth in Section 7 and **Exhibit B**.

“**Term**” has the meaning set forth in Section 3.

SECTION 2.0

DEMISE; DESCRIPTION OF THE LEASED PREMISES; PERMITTED USES

The Landlord leases to Tenant, and Tenant leases from the Landlord, that portion of the Property depicted in **Exhibit A** attached hereto (the “**Project Site**”), together with appurtenant rights thereto, to be used in common with others including the Landlord, (i) to use the private road leading from Coldbrook Road to the Project Site shown on said plan and described in **Exhibit A** to access the Project Site and for all other purposes for which public ways may now or hereafter be used, (ii) to drain stormwater from the Project Site and the private road identified in subsection (i) above and to tie into stormwater facilities, poles, wires, utilities, utility extensions and interconnections, metering facilities, management facilities, and other similar equipment, lines, facilities and items on the Property, all as further shown on the aforesaid plan, and (iii) to install, construct, use, repair, maintain, replace and relocate from time to time additional cables, conduits, pipes, pumps, poles, wires, utilities, utility extensions and interconnections, metering facilities, management facilities, and other similar equipment, lines, facilities and items on the Property, in each case on the portions of the Property more particular shown on the plan referenced in and described in **Exhibit A** (such locations identified in subsections (i), (ii) and (iii) above, together with Project Site, the “**Leased Premises**”). The Leased Premises are demised for the purposes of permitting, constructing, operating, and maintaining the Facility described on and generally in accordance with **Exhibit B** (the “**Permitted Uses**”). The Tenant shall own the Facility, which shall be and remain the personal property of the Tenant, and it shall

not become a fixture on the Leased Premises. Only the Leased Premises shall be leased. Subject to the provisions below, Landlord shall prepare and execute a Certificate of Personalty to this effect in recordable form reasonably acceptable to the parties.

Notwithstanding the foregoing lease of rights at subsections (i), (ii) and (iii) above, the Tenant acknowledges and agrees that it is Landlord's intention that the private road referred to above will be accepted by the Town of Hampden as a public way and, upon such acceptance, any private rights granted above that are included within any such acceptance are automatically terminated and the Landlord reserves the right to relocate or remove any appurtenances and improvements referred to above if a) required by the Town of Hampden and b) those services provided by or addressed by such appurtenances and improvements are otherwise substantially available to Tenant.

SECTION 3.0 TERM

3.1 Term. The initial term of this Site Lease shall commence on the Effective Date and shall continue through the later of April 1, 2033, or the fifteenth (15th) anniversary of the Commercial Operation Date (the "Initial Term") unless otherwise terminated in accordance with its terms. Subject to the limitations in Section 3.2 below, the Tenant shall have the right to extend the Lease on the same terms and conditions for up to five (5) consecutive periods of five (5) years each (each an "Extension Term," and together with the Initial Term, the "Term") by written notice to the Landlord exercising such right to an Extension Term, which notice shall be given by the Tenant no later than eighteen (18) months prior to the expiration of the then current Term, provided that Tenant shall provide notice to Landlord at the same time of a parallel extension of the Master Waste Supply Agreement. Upon timely exercise of each right to extend, the Term shall be automatically extended, provided that there is no then existing Event of Default on the part of the Tenant under this Lease at either the time of the Tenant's exercise of its right to extend the Term or the commencement of the applicable Extension Term. In the event that the Tenant elects not to extend the Term, then, upon expiration of the Term without further extension, the Tenant shall have not more than 180 days to remove all of the Tenant's equipment and personal property from the Property, leaving no further condition requiring remediation in order to comply with applicable law, permits or regulation; provided that the Tenant has left no further condition requiring remediation for compliance with applicable law, permits and regulations, and court and administrative orders, title to the building shall pass to the Landlord. If such a condition does exist, the Tenant shall proceed diligently and at its own cost to remediate such condition to the extent required in order to bring the Property into compliance with applicable law, permits and regulations. Unless the Landlord elects to take title sooner, title to the building and fixtures shall remain in the Tenant until completion of such remediation whereupon it shall pass to the Landlord. The Tenant agrees to execute and deliver such

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instruments of transfer as may be necessary or appropriate to pass title to the Landlord. Tenant shall cause to be performed, at its sole expense, such environmental site assessments as Landlord may reasonably require in order to provide assurance to Landlord that any conditions on the Property requiring remediation have been remediated to the extent required in order to bring the Property into compliance with applicable law, permits and regulations.

3.2 Right to Terminate. Notwithstanding receipt of a notice from Tenant exercising a right to an Extension Term, in the event that Joining Members have provided termination notices to the MRC under their Joinder Agreements such that the sum of the Estimated Delivery Amounts (as defined in the Waste Supply Agreement) of the Joining Members that have not provided notices would be less than 150,000 tons, then, provided that the Landlord is not in default hereunder, the Landlord shall have the right at the end of the Initial Term, or any Extension Term, to terminate this Agreement by written notice to the Tenant, which notice shall be given not later than eight (8) months prior to the expiration of the then current Term. In order to be effective, such notice of termination shall be accompanied by both of the following offers:

(a) An offer from Landlord to Tenant to purchase the building constructed by Tenant on the Project Site at the price and on the terms set forth for such sales in **Exhibit C** as of the date of termination. In the event that Tenant accepts such offer, Landlord and Tenant shall proceed in good faith to close such sale as soon as possible subject to customary terms and conditions. Unless agreed otherwise, Tenant shall remove all of Tenant's equipment and personal property from the Property and shall take such actions as may be necessary or appropriate in order to bring the Project Site into compliance with applicable law, permits or regulation, and court or administrative orders, prior to the effective date of termination on a schedule to be agreed upon by Landlord and Tenant. Tenant shall cooperate with the transfer of any applicable Facility Permits to Landlord, to the extent that they are transferable, and would survive the termination of the Site Lease and the removal of Tenant's equipment and property from the Property, and shall cooperate with such other arrangements as are necessary or appropriate for the transfer of the ownership of the building from the Tenant to the Landlord; or

(b) An offer from Landlord to Tenant to sell the Property to Tenant at the price and on the terms set forth for such sales in **Exhibit C** as of the date of termination. In the event that Tenant accepts such offer, Landlord and Tenant shall proceed in good faith to close such sale as soon as possible subject to customary terms and conditions. Unless otherwise agreed, Landlord shall remove all of Landlord's equipment and personal property from the Property by the date of termination on a schedule to be agreed upon by Landlord and Tenant, shall cooperate with the transfer of any applicable Facility Permits to Tenant to the extent that they are transferable and would survive the termination of the Site Lease and the removal of Landlord's equipment and property from the Property. Landlord shall cooperate with such other arrangements as are necessary or appropriate for the transfer of the ownership of the Property from the Landlord to

the Tenant. In the event Tenant does not accept such offer, then, as of the date of termination, provided that Tenant has left no further condition requiring remediation for compliance with applicable law, permits or regulation, Tenant will be deemed to have abandoned the building, title of which shall pass to the Landlord; provided, however, that if such a condition does exist, the Tenant shall proceed diligently and at its own cost to remediate such condition to the extent required in order to bring the Property into compliance with applicable law, permits and regulations. Unless the Landlord elects to take title sooner, title to the building and fixtures shall remain in the Tenant until completion of such remediation whereupon it shall pass to the Landlord. The Tenant agrees to execute and deliver such instruments of transfer as may be necessary or appropriate to pass title to the Landlord.

3.3 Survival. The terms of this Section 3.0 shall survive termination of this Agreement.

SECTION 4.0

RENT, ACCESS AND SERVICES

4.1 Rent. The Tenant shall pay the Rent and all other sums required to be paid by the Tenant under this Lease in the amounts, at the times, and in the manner provided in this Lease, and shall keep and perform all the terms and conditions on its part to be kept and performed hereunder. Except as otherwise specifically provided in this Lease, the Tenant shall not offset payments of Rent owed to the Landlord against any payments Landlord might owe Tenant. The Landlord and Tenant acknowledge and agree that the payments of Rent and other consideration for this Lease shall be as set forth in Exhibit D attached hereto.

4.2 Included Landlord Rights and Services. The Landlord shall provide to the Tenant with the following access and services on an ongoing basis, at the sole cost of the Landlord:

(a) an access road to be constructed by or on behalf of Landlord over an easement providing access from Coldbrook Road to the Leased Parcel until such time as the access road is accepted by the Town of Hampden as a public way;

(b) access to [electric power], water supply and sewer to be constructed by or on behalf of the Landlord or by a municipal authority running from Coldbrook Road or the Ammo Industrial Park to the Project Site;

(c) reasonable use of the Property outside the Leased Premises, not otherwise leased to a third party or developed or utilized by Landlord, on a temporary basis during construction of the Facility, as may be needed from time to time during such construction period, but only for Permitted Uses and only with Landlord's prior approval which shall not be unreasonably

withheld;

(d) maintenance and plowing of the access road leading from the public way to the Project Site until such road is accepted by the Town of Hampden as a public way.

4.3 Excluded Services. The Tenant shall be responsible for making its own arrangements for installation, connection and purchasing of the following utilities and services, if and as needed, and the Landlord shall cooperate with the Tenant's efforts for making such arrangements as are reasonably required:

(a) electricity service and implementation of an electrical interconnection with the Emera Maine electric distribution system;

(b) natural gas service and implementation of an interconnection with a natural gas distribution system;

(c) telephone service; and

(d) internet service.

SECTION 5.0 QUIET POSSESSION: LANDLORD RIGHT OF ENTRY; TENANT RIGHT OF ACCESS

5.1 Covenant of Quiet Enjoyment. The Landlord covenants that the Landlord has full right to make and enter into this Lease and that, subject to any rights of others lawfully entitled to use easements appurtenant to the Project Site, the Tenant shall have quiet and peaceable possession of the Leased Premises during the Term of this Lease free from interference by any party claiming by, through or under the Landlord, so long as the Tenant pays the Rent and observes and keeps the covenants of this Lease on its part to be kept. The Landlord reserves for itself, its agents and employees the right to enter and inspect the Leased Premises and the Facility subject to the provisions of this Lease.

5.2 Tax Incentives and Environmental Attributes. The Landlord acknowledges that all Tax Incentives and Environmental Attributes created as a consequence of the financing, construction or operation of the Facility by or on behalf of Tenant or its Affiliates shall belong solely to the Tenant.

5.3 Condition of Premises. The Tenant accepts the Leased Premises in the same condition in which they or any part thereof are as of the Effective Date, and except as otherwise provided in {EP - 02066197 - v1 }

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this Lease, waives all rights to object to the condition thereof and assumes all risks in connection therewith, without any representation or warranty, express or implied, in fact or in law, including but not limited to the suitability or fitness of the Project Site, Leased Premises or Property for Tenant's intended use, on the part of the Landlord other than as expressly set forth herein, and without recourse against the Landlord; provided, however, that Landlord shall be responsible for any remediation required by Law of a condition on the Leased Premises existing as of the Effective Date. The Tenant affirms that it has conducted its own due diligence with respect to the Leased Premises and is relying on its own judgment and not on any representations of the Landlord whether express or implied.

5.4 Facility Permits. The Tenant acknowledges that operation of the Facility is subject to applicable law, to regulation by federal, state and local government authorities and to permits, approvals, licenses and directives pertaining to such facilities (collectively, the "Facility Permits"). The Tenant covenants that the operation of its Facility and its use of the Leased Premises will not violate the terms of the Facility Permits, and that the Landlord has the right hereunder to ensure that the Facility and the Tenant's activities conducted on the Leased Premises are operated in compliance with the Facility Permits.

5.5 Environmental and Nuisance Impacts. The Tenant shall use reasonable efforts to operate and maintain the Facility in a manner that minimizes potential adverse environmental and nuisance impacts upon residents of the surrounding areas, which efforts shall include, without limitation, the following:

(a) The Tenant shall utilize measures to minimize and control fugitive odors and shall not allow production of objectionable odors that exceed ambient levels in violation of Law.

(b) The Tenant shall not allow the Facility to produce noise that exceed ambient levels as measured or detected at or outside the borders of the Property in violation of Law.

(c) Vehicular access to the Facility shall be restricted during non-delivery hours.

(d) The Leased Premises shall be kept reasonably free of waste and other debris other than in designated indoor waste delivery locations.

(e) Driveways and other roads on the Leased Premises shall be kept in good order and repair and relatively free of litter.

The Tenant shall maintain and publicize a means for residents of nearby areas to contact the Facility to report the occurrence of any potential adverse environmental or nuisance impacts. The Tenant shall respond promptly to all such reports and shall act diligently to address and make

efforts to mitigate such impact that are reasonable under the circumstances. The Tenant shall keep a log of the date, time and nature of all such contacts and responses, and shall provide the log to the MRC on request and on a regular basis. Notwithstanding the foregoing, the Tenant shall not be deemed to be in breach of this Lease so long as it is operating the Facility in full compliance with applicable Law.

5.6 Inspection Rights. The Tenant shall permit the Landlord, its agents, invitees and employees to enter into and on the Leased Premises at all reasonable times and upon reasonable prior notice, provided such notice is no less than twenty four (24) hours in advance, for the purpose of inspecting the Leased Premises and enforcing the obligations and requirements set forth in this Lease or under applicable law with respect to the construction, operation, maintenance or removal of the Facility and Tenant's use of the Facility, the Leased Premises and the Property; provided, however, that the Landlord shall not be permitted to access secure or restricted areas within the Leased Premises unless accompanied by a representative of the Tenant. The Landlord shall comply with all reasonable requirements of the Tenant for protection of health and safety during such entry and inspections. The Tenant shall cooperate fully with such inspections, which shall not interfere unreasonably with the Tenant's operation of the Facility or fulfillment of other obligations under the Lease.

5.7 Access. The Tenant and its employees shall be allowed 24-hour access to the Leased Premises, on each day of the Term, subject to compliance with the requirements of this Lease and applicable law.

5.8 Emergency Access. In coordination with the police and fire departments, and other emergency responders (together, "First Responders") that serve the Property, the Tenant shall develop and maintain a plan for continuous timely response to emergency situations that pose a potential adverse threat to the public health, safety, environment or the Property. The Tenant shall provide appropriate training and coordination to ensure that such First Responders are familiar with the Facility and with appropriate, proper and safe response measures to protect the public health, safety and environment. The Tenant agrees that, in the event of an emergency, First Responders shall have the right to enter the Leased Premises with or without permission from the Tenant or the Landlord. The Tenant shall provide the Landlord with emergency contact information for key personnel and shall ensure that such information is at all times current. Notwithstanding anything in this Lease to the contrary, in the event of an emergency to which the Tenant does not respond timely, the Parties acknowledge and agree that the Landlord and its agents and employees shall have the right (but not the obligation) to enter the Leased Premises at any time and without prior notice to Tenant, for the purpose of taking all actions necessary or reasonably appropriate to respond to such emergency condition.

SECTION 6.0 DEVELOPMENT OF THE FACILITY

6.1 Tenant Development Responsibilities. The Tenant shall take such actions as may be required to cause the Construction Date to occur no later than January 1, 2017. To complete such development, as applicable, the Tenant shall complete the detailed design of the Facility; acquire all permits and approvals that are necessary prerequisites to the leasing of the Leased Premises hereunder and commencement of construction of the Facility ("**Tenant Permits**"); enter into business and contractual arrangements to provide labor, equipment, services, materials, and supplies as necessary for construction; cooperate with the Landlord to arrange for the management or disposal of residual materials to be generated by the Facility; make arrangements to obtain financing for construction; and take all other necessary and appropriate actions related thereto. The Tenant shall be responsible for any indemnification, financial assurance, compliance or other obligations or requirements contained in any permits or approvals to the extent related to the Tenant's development of the Facility and use of the Leased Premises, including without limitation any host community agreements or payments. The Tenant shall provide the Landlord with copies of all permits, licenses and approvals, and with all correspondence with the issuing agencies and entities.

6.2 Landlord Development Responsibilities. The Landlord shall be responsible for the following: (i) the development and permitting, and arranging for construction and maintenance as described herein, of an access road from Coldbrook Road and related electrical utility line and water supply and wastewater collection infrastructure leading to the Project Site either, at Landlord's election, from Coldbrook Road or from the Ammo Industrial Park in Hampden, Maine; (ii) taking reasonable measures to cooperate with the Tenant's development efforts as described in Section 6.A, above including, without limitation, in connection with the submittal of additional permit applications, permit modifications, interpretation of key provisions, responses to agencies and in review and negotiation of conditions affecting the Leased Premises and the Property, potential environmental impacts or potential nuisance conditions. In connection therewith, the Landlord shall (a) provide available data and information regarding the Leased Premises and the Property to the extent necessary or appropriate to support the Tenant's efforts to obtain Tenant Permits, without any warranty or representation as to the accuracy or sufficiency thereof, and (b) shall (A) become a co-applicant and co-permittee with the Tenant for the purpose of seeking necessary permits or permit amendments and (B) coordinate with and make reasonable efforts to support the Tenant's access to the Property and the Leased Premises and with respect to the availability of and access to utilities, infrastructure, and other Landlord services available on the Property.

6.3 Design and Permit Application Review. The Landlord hereby acknowledges its consent to all Tenant work described in **Exhibit B** and to any future repairs, renovations, replacements, or

upgrades by Tenant of the work described in **Exhibit B**, subject to the terms hereof. The Tenant shall provide the Landlord with a reasonable opportunity to provide non-binding comments on (a) the detailed design of the Facility at appropriate stages prior to its completion; and (b) permit application materials prepared by the Tenant prior to their submittal to the applicable governmental agency or agencies. The Landlord shall have the option to respond with non-binding comments within a reasonable time. The Tenant shall retain complete responsibility for all aspects of the design of the Facility and for all content of applications and submittals for Tenant Permits.

6.4 Reports. The Tenant shall provide reports to the Landlord as set forth in **Exhibit E**.

6.5 Construction Date. The construction date (the “**Construction Date**”) shall be deemed to occur on the date that the Tenant has (a) acquired all Tenant Permits that are necessary prerequisites to construction of the Facility and related access, services and utilities and all such permits are final; (b) closed and/or arranged final terms of access granting to Fiberight construction financing sufficient to authorize commencement by the Tenant of construction of the Facility (the “**Financial Close**”); and (c) authorized commencement of construction activities at the Leased Premises on a continuous basis, as evidenced by the Tenant’s issuance of a notice to proceed to start construction or equivalent. The Tenant shall provide prompt notice to the Landlord upon achievement of each such milestone.

SECTION 7.0 CONSTRUCTION OF THE FACILITY

7.1 Tenant Construction Responsibilities. The Tenant shall construct the Facility in accordance with **Exhibit B** and **Exhibit E** attached hereto (hereinafter, the “**Tenant’s Work**”) in a good and workmanlike manner, at the Tenant’s sole cost and expense. The Tenant shall perform, or manage performance of, all aspects of construction of the Facility, in which capacity Tenant shall, among other things, manage labor, installation of equipment, acquisition and use of materials and supplies and all related administration; ensure that the Facility is constructed in accordance with the design, is capable of performing as intended, avoids unacceptable nuisance impacts, meets applicable safety requirements, and complies with all applicable permits, codes, requirements, and standards; respond to unforeseen conditions or impacts of the construction, and manage and mitigate adverse impacts; coordinate with the Landlord to ensure that activities on the Leased Premises and the Property are in compliance with all permits and approvals; coordinate with the Landlord regarding communications with approving authorities; fund any site improvements outside of the Project Site that are required to serve the Facility, including, but not limited to, electrical interconnections, utility service upgrades, and interconnections with gas and other facilities elsewhere on the Property, if applicable, but exclusive of those facilities that

are to be developed or upgraded by the Landlord as provided herein; conduct start-up and commissioning activities for the Facility; conduct the Performance Test for the Facility; and take other necessary and appropriate actions. Tenant shall work with the Landlord to ensure compliance with all directives of governmental authorities related to the Facility and the Leased Premises.

The Tenant shall use reasonable efforts to cause the Commercial Operation Date to occur on April 1, 2018, or as soon thereafter as feasible, provided that Tenant shall not be required to commence its construction activities if any of the following conditions exist (any of which conditions might be waived at the discretion of Tenant):

(a) Joinder Agreements have not yet been executed with commitments to provide a total of at least 150,000 tons per year of Acceptable Waste to the Facility.

(b) Any Facility Permit that must be acquired as a prerequisite to construction has not yet been issued despite the diligent efforts of the Tenant to obtain such Facility Permit; or the Tenant has identified at least one term or condition of an issued Facility Permit that would preclude construction or operation of the Facility on commercially reasonable terms.

(c) A Force Majeure or Change in Law has occurred and is ongoing that would preclude construction or operation of the Facility on commercially reasonable terms.

(d) The Tenant has not achieved Financial Close despite its diligent efforts to do so.

If for any reason not under the control of Tenant, the Commercial Operation Date is delayed beyond April 1, 2018, then the period of delay in Tenant's construction schedule attributable to the delays not under the control of Tenant, including delays in the Construction Access Date and the Infrastructure Completion Date as described in Section 7.2 hereunder, or delays in the supply of Acceptable Waste for the Performance Test as described in Section 7.4 hereunder, but excluding performance of subcontractors and equipment suppliers not deemed due to Force Majeure, shall be deemed an Excused Delay Period for the purposes of the Master Waste Supply Agreement.

7.2 Landlord Construction Responsibilities. The Landlord shall be responsible for constructing and maintaining an access road to the Project Site from Coldbrook Road, and for ensuring that electric, water and sewer lines are constructed to serve the Project Site (together, the ***"Infrastructure"***). Landlord and Tenant shall cooperate to confirm the occurrence of the date by which the Landlord shall have made sufficient progress in construction of the access road such that the Tenant's construction vehicles and equipment have reasonable access to the Project Site (the ***"Construction Access Date"***) and the date on which the Landlord shall have completed

installation of the Infrastructure such that its availability does not delay the Tenant's completion of construction and commencement of operation of the Facility (the "**Infrastructure Completion Date**"). In each case, upon occurrence of such date, the Landlord shall issue a completion certificate as evidence that the date has occurred. The Tenant shall provide written notice to the Landlord that it either accepts or disputes such certification, provided that such a certification shall be deemed accepted if the Landlord has not received a notice of dispute from the Tenant within five (5) business days. The Landlord shall use reasonable efforts to cause the Construction Access Date and the Infrastructure Completion Date to occur as quickly as feasible, provided that the Landlord shall not be required to commence its construction activities if any of the following conditions exist (any of which conditions might be waived at the discretion of Landlord):

(a) Joinder Agreements have not yet been executed with commitments to provide a total of at least 150,000 tons per year of Acceptable Waste to the Facility.

(b) Any Facility Permit that must be acquired as a prerequisite to construction has not yet been issued; or the Tenant has identified at least one term or condition of an issued Facility Permit that would preclude construction or operation of the Facility on commercially reasonable terms.

(c) A Force Majeure has occurred and is ongoing that would preclude construction or operation of the Facility on commercially reasonable terms.

(d) The Tenant has not achieved Financial Close.

If for any reason not under the control of Tenant (i) the Construction Access Date is delayed beyond [September 1, 2016], or (ii) the Infrastructure Completion Date is delayed beyond [July 31, 2017] **UPDATE BOTH DATES BEFORE SIGNING PER THEN-CURRENT SCHEDULE**, and, as a consequence, Tenant's construction schedule is delayed such that the Commercial Operation Date is delayed beyond April 1, 2018, then the period of delay in Tenant's construction schedule attributable to the delays in the Construction Access Date and the Infrastructure Completion Date shall be accounted for in the determination of the Excused Delay Period for the purposes of the Master Waste Supply Agreement.

7.3 Schedule and Excused Delay Period. The Tenant shall maintain a detailed construction schedule that identifies critical tasks on the path from Financial Close to the achievement of the Commercial Operation Date, including, but not limited to, key milestone dates for the Tenant as well as the Construction Access Date, the Infrastructure Completion Date, and any period of time previously agreed upon as an Excused Delay Period. The Tenant shall provide an updated version of the construction schedule to the Landlord at least once per month until the

Commercial Operation Date has been achieved, and otherwise upon request of the Landlord. Along with the construction schedule, the Tenant shall provide the Landlord with the most recently agreed upon determination of the length of the Excused Delay Period, if any, and any proposal for a further extension of the Excused Delay Period. The Landlord shall review the Tenant's proposal to add to the length of the Excused Delay Period and shall act timely to accept, dispute, or seek clarification or more time to review or negotiate such proposal. In the absence of a response from the Landlord within five days of receipt, the Tenant's determination of the length of the Excused Delay Period shall be deemed accepted.

7.4 The Performance Test. The Tenant shall perform the Performance Test as provided below in order to demonstrate the readiness of the Facility for commercial operation.

(a) Not less than ninety (90) days prior to the Commercial Operation Date, the Tenant shall provide to the Landlord a protocol for performing a test (the "**Performance Test**") that indicates (a) aspects of performance to be verified, which shall include, at a minimum, (i) capability to accept and process a minimum of 650 tons per day of Acceptable Waste on an ongoing basis over a period of three consecutive days while operating in compliance with all Facility Permits and without creating nuisance conditions, and without extraordinary outside support or staffing in excess of expected levels of staffing for the Facility; and (ii) capability to produce commercially saleable byproducts, or product precursors thereof, as appropriate, on a continuous and sustainable basis, with acceptable content of metals, plastics, COD and unconverted sugars in residual solid or liquid form, as applicable, within stated parameters; (b) procedures for conducting and monitoring the performance of the Facility during the Performance Test, including acceptable ranges for key operating parameters, and requirements for the availability of Acceptable Waste for the Performance Test to be performed as intended; and (c) specific levels of performance (the "**Performance Standards**") that must be exceeded for the Facility to be considered as having passed the Performance Test. The Tenant and the Landlord shall work in good faith to reach agreement on the protocol for the Performance Test by a date not less than thirty (30) days before the Performance Test date elected by the Tenant with reasonable notice to the Landlord.

(b) The Landlord shall have the right to witness and monitor the Performance Test. The Tenant shall provide the Landlord with ten (10) days' notice of a 14 day window that contains the scheduled date for the start of the Performance Test, and shall communicate changes in such scheduled date to the Landlord on a timely basis after such initial 10 day notice has been provided. The Tenant shall then provide the Landlord with 24 hours' notice of the actual start of the Performance Test.

(c) After completion of the Performance Test, the Tenant shall provide the Landlord with a test report, and all supporting data, stating whether (a) the Performance Test was performed in accordance with the test protocol; (b) the key operating parameters were within

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acceptable ranges and the Performance Standards were met or exceeded over the course of the Performance Test; and (c) the Facility operated during the Performance Test in compliance with all Facility Permits and without creating nuisance conditions. If the Tenant states that the Facility so performed during the Performance Test, and such statement is either accepted or not disputed in writing by the Landlord within five (5) business days of receipt of the test report, then the Commercial Operation Date shall be deemed to have occurred as of the later of (i) date on which the Performance Test was completed; and (ii) April 1, 2018. Landlord may dispute such result by written response stating the basis for the dispute, in which case the Commercial Operation Date shall be deemed to occur as if the Performance Test results had been accepted until the dispute is resolved, and thereafter in accordance with the decision resolving the dispute.

(d) The Landlord acknowledges that the Performance Test cannot be performed as intended unless sufficient quantities of Acceptable Waste are made available to the Facility for processing, which the Landlord, with the cooperation and support of the Tenant, shall use its best efforts to supply pursuant to the Master Waste Supply Agreement. In the event that the Tenant is not supplied on a timely basis with sufficient Acceptable Waste to perform the Performance Test, and the Commercial Operation Date is delayed as a direct result, then the length of the Excused Delay Period shall be increased by the duration of such delay.

SECTION 8.0 OPERATION OF THE FACILITY

8.1 Operation and Maintenance by Tenant. The Tenant shall manage all aspects of the operation and maintenance of the Facility, including management of labor, operation, maintenance and repair of equipment, acquisition and use of materials and supplies, production and sales of products, management of residual materials, and related administration. The Tenant shall use reasonable efforts to ensure that the Facility performs as intended, and shall otherwise ensure that the operation and maintenance of the Facility avoids and mitigates unacceptable nuisance impacts, meets applicable safety requirements, and complies with all applicable permits, codes, requirements, and standards. The Tenant shall acquire and accept waste and other materials to be processed; respond to unforeseen conditions or impacts of the Facility, and manage and mitigate adverse impacts; coordinate with the Landlord regarding communications with approving authorities; operate and maintain Tenant site improvements outside of the Leased Premises that are required to serve the Facility, including, but not limited to, electrical interconnections, utility service upgrades beyond anticipated line extensions, and interconnections with other facilities, if applicable.

8.2 Tenant Maintenance Standards. The Tenant shall, at its sole cost and expense, keep neat and clean, and replace and maintain in good order and condition, the Leased Premises throughout

the Term. Throughout the Term of this Lease, the Tenant shall comply, at its sole cost and expense, with all applicable federal, state and local laws, ordinances, orders, rules, regulations, and requirements affecting the Leased Premises; provided, however, that nothing in this Lease shall waive any right of the Tenant under applicable law to contest such laws, ordinances, orders, rules, regulations or requirements. The Tenant shall comply with all lawful directives of governmental authorities related to the Facility and the Leased Premises. The Landlord shall provide its reasonable cooperation, where appropriate, to facilitate such compliance.

8.3 Landfill Disposal of Residual Waste. The Tenant shall establish procedures, and shall use reasonable efforts to enforce such procedures, to minimize landfill disposal of incoming waste by ensuring that, to the extent commercially reasonable, (i) solid waste is not delivered to the Facility unless it can be accepted and processed at the Facility; and (ii) processed materials are marketed and sold as products for use off the Property rather than becoming residual waste that is either stockpiled or sent to a landfill for disposal. At the end of each month, the Tenant shall report to the Landlord the quantity of materials produced, the quantity sent to a landfill in such month, and the cumulative quantity of materials sent to a landfill in the then current Contract Year.

8.4 Record-keeping. During the Term of this Lease, and for a period of three (3) years thereafter, each party shall keep and maintain complete and accurate records and all other data required by each of them for the purposes of proper administration of this Lease. Each party shall have the right, at its sole expense during normal business hours upon seven (7) days prior written notice to the other party, to examine the other party's records and data relating to this Lease only to the extent necessary to verify the accuracy of any statement, charge, notice or computation made hereunder. Either party shall have the right to cause an audit to be made by an independent certified public accountant, at its own expense, reasonably acceptable to the other party with respect to any determination made hereunder. If the audit reveals that the record keeping or accounting of a Party is inaccurate in any material respect, then such Party shall be responsible to pay for the cost of the audit.

8.5 Reports and Oversight. The Tenant shall provide reports as detailed in **Exhibit E**. The Tenant shall meet with the Landlord at least quarterly to review its monthly written reports, and to report on, and permit the Landlord to comment on, MSW levels and sources received and processed, materials sold and produced, residuals generated and shipped, revenues, financial performance, compliance with permit conditions; status of permit approvals and renewals, and other material matters

8.6 Community Relations. The Tenant shall use reasonable efforts to cooperate with the Landlord to maintain good community relations.

8.7 Maintenance by the Landlord. During the Term of this Lease, the Landlord, at its sole cost and expense (subject to Section 7), and until such time as the same may have been accepted by the Town of Hampden, shall at all times keep the access road and related utility, sewer and water lines in good order, safe condition and repair, unless such repairs are required due to the fault or negligence of the Tenant or its servants, agents, employees, licensees or invitees.

SECTION 9.0 CAPITAL IMPROVEMENTS

9.1 Capital Improvements. Subject to the provisions of this Section 9.0, the Tenant shall have the right to make such alterations, improvements, and changes to the Facility and the Leased Premises as it may deem necessary from time to time in connection with Permitted Uses.

9.2 Conditions to Implementation of Capital Improvements. The right of the Tenant to make Capital Improvements shall be subject to the following conditions:

(a) The Tenant shall apply for and obtain necessary modifications to Facility Permits at the Tenant's sole cost and expense. The Landlord will use reasonable efforts to provide available data and information related to the Leased Premises and the Property to support the Tenant's efforts to modify such permits. The Tenant shall reimburse the Landlord for reasonable third party and external costs to the Landlord in connection therewith.

(b) The Tenant shall provide the Landlord with a reasonable opportunity to review and comment on permit application materials prepared by the Tenant prior to their submission to applicable regulatory authorities. The Landlord shall conduct any such review and comment within a reasonable time frame. The Tenant shall have the right to accept or reject any comments received and shall retain complete responsibility for all aspects of the design of the Facility and for all content of applications and submissions for permits and approvals.

(c) The Tenant shall certify to the Landlord in writing that the cumulative effect of such Capital Improvements will not have a material and adverse effect on the ability of the Tenant to perform its obligations under either this Lease or the Master Waste Supply Agreement.

(d) The Tenant shall provide updated versions of **Exhibit B** and **Exhibit C** to reflect the implementation of any Capital Improvements within a reasonable time following such implementation.

SECTION 10.0
ASSIGNMENT; TRANSFERS;
EFFECT OF BANKRUPTCY OR INSOLVENCY

10.1 Prohibition of Assignment. Except as otherwise provided in this Lease, neither this Lease nor the leasehold estate of the Tenant nor any interest of the Tenant under this Lease in the Leased Premises or in the buildings or improvements on the Leased Premises shall be assigned, transferred, or sold, including without limitation any transfer by operation of law, in any manner whatsoever without the prior written consent of the Landlord, the giving of which shall be in the Landlord's sole discretion. Any attempt at any such assignment, transfer, or sale without the Landlord's consent shall be void and of no effect, and shall, at the option of the Landlord, terminate this Lease.

10.2 Transfer of Ownership. Notwithstanding any other provision of this Lease to the contrary, direct and indirect ownership of the Tenant may be transferred at any time and from time to time only with prior notice to and approval from the Landlord, not to be unreasonably conditioned, withheld or delayed, whether by sale, statutory merger or consolidation, security interest, collateral assignment, sales of securities (whether by private sale, initial public offering, trading on public securities markets, over-the-counter, or pursuant to warrants or options or other rights) or otherwise; *provided, however*, in the case of any such approved transfer (i) the transferee has demonstrated to the reasonable satisfaction of Landlord its financial capability, including access to committed funds, sufficient to complete development and construction of the Project and to operate the Facility during the term of this Lease, (ii) unless the Landlord shall otherwise agree in writing, Fiberight shall continue to have day-to-day control of and responsibility for Tenant operations and the Facility, (iii) the person(s) with day-to-day management responsibility for, and that provide(s) day-to-day operational services to, the Facility following such assignment shall be approved by the Landlord, such approval not to be unreasonably withheld or delayed, (iv) unless the Landlord shall otherwise agree in writing, the Tenant and its permitted successors and assigns shall continue to be jointly and severally liable for all obligations of the Tenant under the Lease, the Tenant Permits, the Landlord Permits, and other project documents (subject to notifications and transfer requirements, if any, established by applicable law); and (v) such transfer shall not adversely affect the continued validity of the Facility Permits and, subsequent to such transfer, each such permit shall remain in effect or the transferee shall have acquired in its name equivalent permits necessary to the development, construction and operation of the Project.

10.3 Permitted Assignment. Notwithstanding the foregoing, Fiberight shall have the right at any time to assign its rights under this Lease, upon prior notice to the Landlord but without the Landlord's consent, to an Affiliate that is directly controlled by Fiberight (a "***Related Entity***") or to an investor which will own and operate the Facility in connection with financing of the

Facility; provided that in the case of any such permitted assignment, (i) the transferee has demonstrated to the reasonable satisfaction of Landlord its financial capability, including access to committed funds, sufficient to complete development and construction of the Project and to operate the Facility during the term of this Lease, (ii) unless the Landlord shall otherwise consent in writing, until the Commercial Operation Date, Fiberight shall continue to have day-to-day control of and responsibility for operations and the Facility, (iii) the person(s) with day-to-day management responsibility for and that provide(s) day-to-day operational services to the Facility following such assignment shall have been approved in writing by the Landlord, which approval shall not be unreasonably withheld or delayed, and (iv) unless the Landlord otherwise agrees in writing, Fiberight shall have confirmed to the Landlord in writing that both it and any assignee will remain jointly and severally liable for all obligations of the Tenant hereunder; and (v) such transfer shall not adversely affect the continued validity of the Facility Permits and, subsequent to such transfer, each such permit shall remain in effect or the transferee shall have acquired in its name equivalent permits necessary to the development, construction and operation of the Project. Any other attempt by Fiberight to assign, transfer, or pledge this Agreement, whether in whole or in part, to any person without the prior written consent the Landlord shall be null and void.

10.4 Effect of Bankruptcy. Without limiting the generality of the provisions of the preceding Subparagraph A of this Section, the Tenant agrees that in the event any bankruptcy or insolvency proceedings under the Bankruptcy Act or otherwise are commenced by or against the Tenant, and, if against the Tenant, the proceedings shall not be dismissed before either an adjudication in bankruptcy or the confirmation of a composition, arrangement, or plan of reorganization, or in the event the Tenant is adjudged insolvent or makes an assignment for the benefit of its creditors, or if a receiver is appointed in any proceeding or action to which the Tenant is a party, with authority to take possession or control of the Leased Premises or the business conducted on the Leased Premises by the Tenant, and such receiver is not discharged within a period of ninety (90) days after his or her appointment, any such event or any involuntary assignment prohibited by the provisions of the preceding Paragraph A of this Section shall be deemed to constitute a breach of this Lease by the Tenant and shall, at the election of Landlord, but not otherwise, without notice or entry or other action of the Landlord, terminate this Lease and also all rights of the Tenant under this Lease and in and to the Leased Premises and also all rights of any and all persons claiming under the Tenant.

SECTION 11.0

NOTICES

11.1 All notices, demands, or other writings in this Lease provided to be given or made or sent, or which may be given or made or sent, by either party to the other, shall be deemed to have

been fully given or made or sent if in writing and either (i) delivered in person, (ii) sent by recognized overnight courier with acknowledgement of receipt, (iii) sent by certified mail, return receipt requested, or (iv) sent by email, provided a confirmation copy is sent promptly by overnight courier or certified mail, in each case to the following addresses:

If to the MRC:	Municipal Review Committee 395 State Street Ellsworth, ME 04605 Attention: Executive Director Email: glounder@mrcmaine.org
With a copy to:	Eaton Peabody 80 Exchange Street P.O. Box 1210 Bangor, Maine 04402 Attention: Daniel G. McKay, Esq. Email: dmckay@eatonpeabody.com
If to Fiberight:	1450 South Rolling Road Baltimore, MD 21227 Attention: Craig Stuart-Paul Email: craigsp@fiberight.com

Either party may change the address at which notices are to be delivered by providing notice of such change in the manner provided above. If the Tenant shall so request, copies of all notices being provided to it shall also be provided to any Investor for which contact information has been provided in writing by Fiberight to the MRC for such purpose.

SECTION 12.0

TAXES AND ASSESSMENTS

The Tenant shall be responsible for any and all taxes, tax liabilities, assessments, levies or other governmental charges that may accrue with respect to the Leased Premises and any improvements thereon. The Tenant shall be responsible to file such applications with the appropriate authorities, on an annual basis, for an abatement, exemption or reduction in the tax liabilities due with respect to the Leased Premises.

SECTION 13.0

LIENS

13.1 Future Liens. Except as otherwise may be permitted under this Lease, Tenant shall keep all and every part of the Leased Premises and the Property free and clear of any and all mechanics', material suppliers', and other liens for or arising out of or in connection with work or labor done, services performed, or materials or appliances used or furnished for or in connection with any operations of the Tenant, any alteration, improvement, or repairs or additions that the Tenant makes or permits or causes to be made, or any work or construction, by, for, or permitted by the Tenant on or about the Leased Premises and the Property, or any obligations of any kind incurred by the Tenant, and at all times promptly and fully to pay and discharge any and all claims on which any such lien may or could be based, and to indemnify the Landlord from and against any and all such liens and claims of liens and suits or other proceedings pertaining to the Leased Premises and the Property.

13.2 Prior Liens. The Landlord warrants that the Leased Premises are, and shall remain throughout the Term, free of any prior liens or encumbrances that would interfere with Tenant's use and enjoyment of the Leased Premises.

13.3 Contest of Liens. The Landlord and the Tenant shall each have the right to contest any and all liens assessed against the Leased Premises in accordance with applicable provisions of Maine law.

SECTION 14.0

INDEMNIFICATION

14.1 Obligation to Indemnify. The Tenant shall indemnify, defend and hold the Landlord, the Joining Members, and their respective its members, directors, officers, elected and appointed officials, agents, employees, licensees and invitees (collectively the "***Indemnified Parties***") harmless against any and all claims, liability, losses, damages, suits, judgments and expenses whatsoever (including without limitation attorneys' and experts' fees): (i) arising from the Tenant's possession, use occupation or control of the Leased Premises, (ii) occurring while on or about the Leased Premises, or (iii) arising from a breach by the Tenant of this Lease, except in any case to the extent arising from the gross negligence or willful misconduct of the Landlord, its agents, or employees. Tenant shall, at its own costs and expense, defend any and all suits or actions (just or unjust) related to the foregoing that may be brought against the Indemnified Parties or in which the Indemnified Parties may be impleaded with others. The foregoing indemnity expressly extends to claims of injury, death, or damage to employees of the Tenant or of a subcontractor, anyone directly or indirectly employed by the Tenant, or anyone for whose acts they may be liable. In claims against any person or entity indemnified under this Section by

an employee of the Tenant or subcontractor, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Tenant or a subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts. The Tenant expressly waives immunity under workers' compensation laws for the purposes of this indemnity provision.

14.2 Survival. The provisions of this section shall survive termination of the Lease.

SECTION 15.0 INSURANCE

15.1 Insurance Coverage of Leased Premises. The Tenant shall, at all times during the Term of this Lease, and at the Tenant's sole expense, keep all improvements that are now or hereafter a part of the Leased Premises insured against loss or damage by fire and the extended coverage hazards for the full replacement value (or the actual cash value during any Extension Term) of the improvements, with loss payable to the Landlord and the Tenant as their interests may appear. During the Term, the Tenant shall also maintain for the benefit of the Tenant and the Landlord, as a named additional insured, such other insurance coverages as are customary in the industry including, but not limited to, (i) commercial general liability insurance, including products and completed operations coverage, against any claims for personal injury, death and property damage occurring upon, in or about the Leased Premises and on, in and about the adjoining sidewalks and passageways of at least \$_____ combined single limit, and \$_____ aggregate; (ii) worker's compensation in amounts required by Maine law; (iii) employer's liability insurance with limits of not less than \$_____ per coverage; (iv) automobile liability insurance, including the ownership, maintenance and operation of any automotive equipment, owned, hired or non-owned, in an amount not less than \$_____ combined single limit; and (v) environmental impairment insurance in an amount not less than \$_____.

15.2 Personal Injury Liability Insurance. The Tenant shall maintain in effect throughout the Term of this Lease personal injury liability insurance covering its activities on the Leased Premises for injury to or death of any number of persons in one occurrence, and property damage liability, in the minimum amount of \$_____ combined single limit and at least \$_____ of excess and/or umbrella liability insurance for any and all claims. Such insurance shall include the Landlord as an additional insured and shall require the insurer to give thirty (30) days' notice to the Landlord of any cancellation.

15.3 Insurance Carried by Contractors. During the period of any construction or renovation of the Facility, the Tenant shall also require the construction manager and/or general contractor for

the work to maintain (i) for the benefit of the Tenant and the Landlord, as additional insureds, commercial general liability insurance, including products and completed operations coverage, against any claims for personal injury, death and property damage occurring upon, in or about the Property and on, in and about the adjoining sidewalks and passageways during the construction of the work for at least \$_____ combined single limit, and \$_____ aggregate; (ii) worker's compensation in amounts required by Maine law; (iii) employer's liability insurance with limits of not less than \$_____ per coverage; (iv) automobile liability insurance, including the ownership, maintenance and operation of any automotive equipment, owned, hired or non-owned, in an amount not less than \$_____ combined single limit; and (v) for subcontractors engaged in work reasonably determined to pose an environmental threat, environmental impairment insurance in an amount not less than \$_____. The Tenant shall insure that all subcontractors involved in work at the Property either maintain the insurance coverage set forth in this section or are covered under the insurance policies of the Tenant or as a contractor of the Tenant.

15.4 Additional Insurance Coverage Required. If the Tenant is required by law, regulation or regulatory order to carry insurance with coverage limits in excess of those set forth in Sections A and B of this Section 18, the Tenant shall increase insurance coverage limits to the Landlord to meet such requirements.

SECTION 16.0 RIGHT OF FIRST OFFER

Provided that the Tenant is not otherwise in default hereunder, the Tenant shall have a right of first offer to purchase the Property in its entirety or the Leased Premises, as applicable, if the Landlord desires to sell the Property in its entirety, or the Leased Premises, during the term of this Lease. In the event that the Landlord desires to sell either the Property in its entirety or the Leased Premises during the term of this Lease, the Landlord shall first offer the same in writing to the Tenant, which shall have thirty (30) days to accept or reject the offer. In the event that the Tenant accepts the offer, the closing shall occur within forty-five (45) days from the date of acceptance. In the event that the offer is not accepted within the time period prescribed by this Section 16.0, the Landlord may sell the Property or the Leased Premises, as applicable, to a third party; provided, however, that without first reoffering the same to the Tenant, the Landlord shall not sell the same upon lesser terms than those which have been offered to the Tenant, nor upon any terms if more than six months have elapsed since the last offer to the Tenant. These rights of first offer shall not apply to a sale or transfer to any Affiliate or successor entity to the Landlord, provided, however, that the property sold or transferred to such entity shall remain subject to these rights of first offer.

SECTION 17.0 FORCE MAJEURE

17.1 Change In Law; Condemnation. The Tenant shall notify the Landlord, and the Landlord shall notify the Tenant, in writing, promptly as soon as either party has knowledge of any action of the federal government, state legislature, state administrative or regulatory authority, court of applicable jurisdiction, or any other governmental body that could lead to a condemnation or taking by eminent domain of the Property or the Facility or to the occurrence of a Change in Law. Tenant and Landlord shall use reasonable efforts to cooperate to avoid any such action and to mitigate its potential impact on the obligations set forth in this Lease or in the Master Waste Supply Agreement.

17.2 Suspension of Obligations. If either party is rendered unable, wholly or in part, by Force Majeure to carry out its obligations under this Lease, such party shall provide to the other party as soon as possible after the occurrence of the cause relied on a notice of Force Majeure which shall include a reasonably full description of the particulars of such Force Majeure. In such event, the obligations of the party giving such notice, other than the obligation to make any payment due hereunder, so far as they are affected by such Force Majeure, shall be suspended during the continuance of any inability so caused but for no longer period provided that:

(a) the burden of establishing whether an event of Force Majeure has occurred shall be upon the party claiming its existence;

(b) the nonperforming party shall exercise all reasonable efforts to continue to perform its obligations hereunder, to mitigate the impact of non-compliance, to claim and diligently seek to collect any insurance proceeds potentially available as a consequence of the Force Majeure, and the other party shall cooperate fully with and be supportive of such efforts;

(c) no obligation of either party that arose prior to the occurrence of the event of Force Majeure shall be excused as a result of such occurrence except to the extent a party is prevented from performing such obligation as a result of the Force Majeure event.

(d) the nonperforming party shall provide the other party with prompt notice of the cessation of the event of Force Majeure.

17.3 Force Majeure Plan. As soon as feasible after providing notice that a Force Majeure has occurred, the affected party shall provide the other party a plan (the "Force Majeure Plan") that contains sufficient information regarding the following:

(a) potential impacts of the Force Majeure on, as applicable, the Construction Access Date, the Infrastructure Completion Date, the Commercial Operations, the Excused Delay Period, other affected aspects of the performance of the Facility under this Agreement and the Master Waste Supply Agreement, including compliance with permit conditions; and other obligations;

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(b) proposed new Capital Projects or changes in operations or maintenance practices or other measures required to address the Force Majeure; the ability to meet performance obligations after such measures are implemented; and any reduce level of performance or ongoing level of obligation that cannot be fully mitigated or addressed;

(c) in the event that the Force Majeure Plan includes a proposal for costs to be passed through to the MRC and/or Joining Municipalities as part of the proposed response to address the Force Majeure, a description in reasonable detail of the costs, including, without limitation, one time payments, any increase in the Tip Fee under the Master Waste Supply Agreement and Joinder Agreements, or any other changes to payment provisions, proposed to be passed through, the basis upon which such costs will be calculated, the rationale for the proposed pass through, and any impact of the proposed pass through on the value of the Facility building as set forth in Exhibit C.

The party receiving the Force Majeure Plan shall review it with all deliberate speed and, if the receiving party is the Landlord, shall inform the Joining Members and afford them an opportunity to be heard, and shall negotiate in good faith with the other party for a period of not more than forty-five (45) days whether to accept, accept a modified version of, accept subject to dispute, or not accept the Force Majeure Plan. The receiving party's response shall set forth in writing and in reasonable detail the basis for such decision.

17.4 Acceptance of Force Majeure Plan. In the event that the Force Majeure Plan is accepted, the proposing party shall proceed to implement the Force Majeure Plan in the form accepted. In the event that the Landlord and the Tenant cannot reach agreement on a Force Majeure Plan; , the Tenant shall proceed to implement the proposal as anticipated therein and the dispute shall be resolved in accordance with Section 24.0.

17.5 Early Termination Upon Force Majeure. In the event that (i) the Landlord and the Tenant cannot reach agreement on a proposal that was proposed by the Tenant; and (ii) the Force Majeure has resulted in a material breach of this Lease that cannot be cured, , then, after 90 days from the receipt of the original proposal, either party can terminate this Agreement, provided that the Party simultaneously terminates the Master Waste Supply Agreement in accordance with its terms.

(a) In the event of a termination by Tenant, then Tenant shall have not more than ninety (90) days to remove all of its equipment and personal property from the Property and shall leave the Property with no condition requiring remediation for compliance with applicable law, permits or regulation. Provided that Tenant has left no further condition requiring remediation for compliance with applicable law, permits or regulation, title to the building and other fixtures shall pass to the Landlord. If such a condition does exist, the Tenant shall proceed diligently and at its own cost to remediate such condition to the extent required in order to bring the Property into compliance with applicable law, permits and regulations. In such event, and unless the Landlord elects to take title immediately, title to the building and fixtures shall remain in the

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Tenant until completion of such remediation whereupon it shall pass to the Landlord. The Tenant agrees to execute and deliver such instruments of transfer as may be necessary or appropriate to pass title to the Landlord.

(b) If terminated by the Landlord, such notice of termination shall not be valid unless accompanied by either of the following offers:

(i) An offer from the Landlord to the Tenant to purchase the building and fixtures constructed by the Tenant on the Project Site at the price set forth for such sales in Exhibit C as of the date of termination. In such event, the Landlord and the Tenant shall proceed in good faith to close such sale on customary terms. Unless agreed otherwise, the Tenant shall remove all of the Tenant's equipment and personal property from the Property, leaving no further condition requiring remediation for compliance with applicable law, permits or regulation on a schedule to be agreed upon by the Landlord and the Tenant, shall cooperate with the transfer of any applicable Facility Permits to the Landlord that would survive the termination of the Site Lease and the removal of the Tenant's equipment and property from the Property, and shall cooperate with such other arrangements as are necessary for the transfer of the ownership of the building from the Tenant to the Landlord; or

(ii) An offer from Landlord to Tenant to sell the Property to Tenant at the price set forth for such sales in Exhibit C as of the date of termination. In the event that the Tenant accepts such offer, the Landlord and the Tenant shall proceed in good faith to close such sale. The Landlord shall remove all of the Landlord's equipment and personal property from the Property by the date of termination on a schedule to be agreed upon by the Landlord and the Tenant, shall cooperate with the transfer of any applicable Facility Permits to the Tenant that would survive the termination of the Site Lease and the removal of the Landlord's equipment and property from the Property, and shall cooperate with such other arrangements as are necessary for the transfer of the ownership of the Property from the Landlord to the Tenant. In the event that the Tenant does not accept such offer, then, as of the date of termination, provided that the Tenant has left no further condition requiring remediation for compliance with applicable law, permits or regulation, Tenant will be deemed to have abandoned the building and fixtures, title to which shall pass to the Landlord. If such a condition does exist, the Tenant shall proceed diligently and at its own cost to remediate such condition to the extent required in order to bring the Property into compliance with applicable law, permits and regulations. In such event, and unless the Landlord elects to take title immediately, title to the building and fixtures shall remain in the Tenant until completion of such remediation whereupon it shall pass to the Landlord. The Tenant agrees to execute and deliver such instruments of transfer as may be necessary or appropriate to pass title to the Landlord.

17.6 Compliance with Law. Nothing in this article shall relieve the Tenant from its obligation to comply with any law, regulation or lawful order.

SECTION 18.0 DEFAULT AND TERMINATION

18.1 Landlord Right to Terminate. The Landlord may terminate this Lease by written notice to Tenant upon the occurrence and during the continuation of an “Event of Default.” An “*Event of Default*” shall mean any of the following:

(a) the Tenant fails to achieve the Construction Date on or before January 1, 2017 or such later date as may mutually be agreed upon;

(b) the Tenant fails to achieve the Commercial Operation Date on or before January 1, 2020, or such later date as may mutually be agreed upon, as extended by any Excused Delay Period;

(c) the Tenant shall be in default of its obligations under the Master Waste Supply Agreement and such default is not cured within any applicable cure period;

(d) the Landlord suffers the actual imposition of any fines or penalties imposed by a federal, state or local governmental agency or authority caused solely by the Tenant’s violation of conditions of the Tenant Permits or the Property Permits, and the Tenant fails to pay or contest such fines or penalties, or defend and indemnify the Landlord from and against such fines or penalties, within thirty (30) days of receiving written notice from the Landlord;

(e) Fiberight or any successor Tenant shall (a) file, or have filed against it a petition which is not dismissed within sixty (60) days, in bankruptcy, reorganization or similar proceedings under, or shall be adjudicated a bankrupt under, the bankruptcy laws of the United States, (b) have a receiver, permanent or temporary, appointed by a court of competent authority for it or on its behalf which is not dismissed within sixty (60) days, (c) request the appointment of a receiver, (d) make a general assignment for the benefit of creditors, or (e) shall have its bank accounts, property or receivables attached and such attachment proceedings are not dismissed within sixty (60) days;

(f) Fiberight or any successor Tenant shall dissolve or liquidate;

(g) the Tenant fails to make any undisputed payment due hereunder within thirty (30) days after the same is due;

(h) the Tenant abandons the Facility after achieving the Commercial Operation Date as evidenced by failure of the Tenant to operate, maintain or perform work necessary to the restoration of service of the Facility continuously for a period of sixty (60) days;

(i) the Tenant is otherwise in material breach of its obligations under this Lease or the Master Waste Supply Agreement; provided that no Event of Default, other than a payment default, shall arise or exist unless and until the Landlord has given the Tenant written notice of the alleged default, and the Tenant has failed to cure such default within a period of sixty (60) days thereafter or, if the default is of a such a nature that it cannot reasonably be cured within

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sixty (60) days, the Tenant has failed to commence to cure the default within such sixty (60) days and fails thereafter to prosecute such cure to completion with diligence and to cure such default within one hundred eighty (180) days of such notice.

18.2 Tenant Right to Terminate. The Tenant may terminate this Lease at any time by ninety (90) days' prior written notice to the Landlord upon the occurrence of any of the following, such termination to be effective as stated in such notice:

(a) Prior to the Construction Date, the Tenant reasonably determines that environmental compliance requirements for which the Facility is responsible, permit conditions, permit appeals, legal action or any other factor makes construction or operation of the Facility uneconomic or practically infeasible;

(b) The Landlord is in material breach of its obligations under this Lease, provided, however, no Event of Default shall arise or exist unless and until the Tenant has given Landlord written notice of the alleged default, and Landlord has failed to cure such default within a period of forty-five (45) days thereafter or, if the default is of a such a nature that it cannot reasonably be cured within forty-five (45) days, Landlord has failed to commence to cure the default within such forty-five (45) days and fails thereafter to prosecute such cure to completion with diligence and to cure such default within one hundred eighty (180) days of such notice; or

(c) The Landlord shall (a) file, or have filed against it a petition which is not dismissed within sixty (60) days, in bankruptcy, reorganization or similar proceedings under, or shall be adjudicated bankrupt under the bankruptcy laws of the United States, (b) have a receiver, permanent or temporary, appointed by a court of competent authority for it or on its behalf which is not dismissed within sixty (60) days, (c) request the appointment of a receiver, (d) make a general assignment for the benefit of creditors, or (e) shall have its bank accounts, property or receivables attached and such attachment proceedings are not dismissed within sixty (60) days;

(d) The Landlord shall dissolve or liquidate without designation of and transfer of obligations to a successor entity.

18.3 Limitation on Cure Period. Notwithstanding any other provision of this Lease, in the event that either party shall have breached a provision hereof and shall have relied upon a cure period in order to avoid termination under the provisions of this Section 18.0, such party shall not, within a period of two (2) years from the date of the initial breach, be entitled to the benefit of a cure period with respect to a subsequent breach of the same provision.

SECTION 19.0 INVESTOR RIGHTS

19.1 Investor Rights. Upon and during the continuance of an Event of Default, any Investor shall have the right, in each case with notice to the Landlord and subject to the provisions of this Lease, to: (i) do or cause to be done any act or thing allowed or required under this Lease to be performed or caused to be performed by the Tenant, and any such act or thing done by such Investor shall have the effect of having been done by the Tenant; or (ii) subject to Section 19.2

below, succeed to the Tenant's interest in this Lease. In no event shall the granting of such rights to an Investor, or the exercise by the Investor thereof, operate to make the Investor liable for any covenants or agreements of the Tenant under this Lease, unless, and then only to the extent that, the Investor shall succeed to the rights of the Tenant hereunder.

19.2 Conditions to Exercise of Rights. As condition to the right of any Investor to acquire the Tenant's interests hereunder, such Investor shall (i) provide evidence reasonably satisfactory to the Landlord and the Maine Department of Environmental Protection that it has the financial capacity and technical ability to assume the obligations of the Tenant hereunder and to operate the Facility; and (ii) accept in writing, and shall without further action thereafter be subject to, the terms and conditions of this Lease and the Master Waste Supply Agreement and shall be required to cure any defaults or breaches of the Tenant hereunder in accordance with the terms hereof.

19.3 Notice Regarding Default. Simultaneously with the giving of notice to the Tenant of any process in any action or proceeding brought to terminate or otherwise in any way affect this Lease, or any notice of (i) an Event of Default, or (ii) a matter on which an Event of Default may later be predicated or claimed, (iii) a termination hereof, or (iv) a condition which if continued may lead to a termination hereof, if requested in writing by the Tenant, the Landlord shall give duplicate copies thereof to each Investor as to which the Tenant provides such request at such address as the Tenant may direct.

SECTION 20.0 [RESERVED]

SECTION 21.0 WAIVER OF SUBROGATION

Notwithstanding anything in the Lease to the contrary, the Landlord and the Tenant hereby release the other from any and all liability or responsibility to the other (or anyone claiming through or under them by way of subrogation or otherwise) for any loss or damage to property caused by fire or any other casualty to the extent covered by insurance.

SECTION 22.0 MEMORANDUM OF LEASE

The Landlord and Tenant mutually agree to execute herewith a Memorandum of Lease attached hereto as **Exhibit F** in recordable form with respect to this Lease, which shall be recorded forthwith by the Tenant in the Penobscot County Registry of Deeds, and agree to execute, upon termination of this Lease for whatever cause, a Notice of Termination of Lease in recordable form for recording with said Registry of Deeds.

SECTION 23.0 ENVIRONMENTAL

23.1 Environmental Laws Defined. “*Environmental Laws*” means, collectively, any federal, state, or local law, rule or regulation (whether now existing or hereafter enacted or promulgated, as they may be amended from time to time) pertaining to environmental regulations, contamination, clean-up or disclosures, and any judicial or administrative interpretation thereof, including any judicial or administrative orders or judgments, including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601 *et seq.* (“*CERCLA*”); the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.* (“*RCRA*”); the Clean Water Act, 33 U.S.C. § 1251 *et seq.*; the Clean Air Act, 42 U.S.C. § 7401 *et seq.*; the Superfund Amendments and Reauthorization Act of 1986, 42 U.S.C. § 9601 *et seq.* (“*SARA*”); the Toxic Substances Control Act, 15 U.S.C. § 2601 *et seq.* (“*TSCA*”); the Hazardous Materials Transportation Act, 49 U.S.C. Appx. § 1801 *et seq.*; the Maine Uncontrolled Hazardous Substance Sites Act, 38 M.R.S.A. § 1361, *et seq.*, the Maine Hazardous Matter Law, 38 M.R.S.A. § 1317, *et seq.*; or any other applicable federal or state statute regulation or ordinance regulating the generation, storage, containment or disposal of any oil and hazardous wastes, substances and materials (as defined in the Environmental Laws and collectively referred to herein as “*Hazardous Materials*”) or providing for the protection, preservation or enhancement of the natural environment, any rules or regulations promulgated pursuant to any of the foregoing statutes or ordinances, including but not limited to laws relating to groundwater and surface water pollution, air pollution, transportation, storage and disposal of oil and hazardous wastes, substances and materials, storm water drainage, and underground and above ground storage tanks; and any amendments, modifications or supplements of any such statutes, ordinances, rules and regulations.

23.2 Environmental Covenants. The Tenant hereby represents, warrants and covenants as follows:

(a) Except as may be permitted by and only in accordance with Environmental Laws and permits and licenses, the Tenant shall establish, maintain and follow procedures that do not allow any Hazardous Materials to be stored, located, discharged, possessed, managed, processed, or otherwise handled on the Leased Premises, and shall strictly comply with all Environmental

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Laws affecting the Leased Premises.

(b) No activity shall be undertaken on the Leased Premises or the Property by the Tenant which would cause a release or threatened release of Hazardous Materials into any watercourse, surface or subsurface water or wetlands, or the discharge into the atmosphere of any Hazardous Materials which would violate any Environmental Law or the terms of any permit issued thereunder.

(c) To the extent the release of any Hazardous Materials at or from the Leased Premises or the Property is caused by the Tenant and is in violation of any Environmental Laws, the Tenant shall, with all due diligence, at its own cost and expense and in accordance with Environmental Laws (and in all events in a manner reasonably satisfactory to the Landlord), take all actions (to the extent and at the time or from time to time) as shall be necessary or appropriate for the remediation of said releases including all removal, containment and remedial actions. In such event, the Tenant shall pay or cause to be paid at no expense to the Landlord all clean-up, administrative, and enforcement costs of applicable government agencies or the parties protected by such Environmental Laws which may be asserted with respect to releases of Hazardous Materials on or from the Leased Premises.

(d) The Tenant shall provide the Landlord, in a timely manner, with copies of all notices, documents, records or other information in any way related to the Tenant's obligations under this section or received or created by the Tenant in relation to its obligations under this section.

23.3 Obligation to Notify. The Tenant or the Landlord, as the case may be, shall promptly notify the other party in writing should it become aware of any release or threatened release of Hazardous Materials or the occurrence of any other environmental problem or liability with respect to the Leased Premises or any real property adjoining or in the vicinity of the Leased Premises or such other property which could subject the Landlord, the Tenant, the Property or the Leased Premises to a claim under any Environmental Laws.

23.4 Environmental Indemnity. The Tenant expressly acknowledges and agrees that it will reimburse, indemnify, defend (with counsel reasonably acceptable to the Landlord), and hold the Indemnified Parties harmless from and against, any and all liabilities, claims, damages, penalties, suits, proceedings, judgments, expenditures, losses, charges, expenses and costs (including, but not limited to, all costs of investigation, monitoring, legal fees, remedial response, removal, restoration, or permit acquisition) that may now or in the future be undertaken, suffered, paid, awarded, assessed, or otherwise incurred as a result of Tenant's violation of any of the matters referred to in this Section 23.

SECTION 24.0

WAIVER

The failure of the Landlord to take action with respect to any breach of any term, covenant, or condition contained in this Lease shall not be deemed to be a waiver of such term, covenant, or condition. Any waiver by the Landlord of any breach of any term, covenant, or condition contained in this Lease shall be effective only if in writing and not be deemed to be a waiver of any subsequent breach of the same, or of any other term, covenant, or condition contained in this Lease.

SECTION 25.0

DISPUTE RESOLUTION

25.1 Resolution Mechanism. Any dispute arising under this Lease Agreement shall be resolved only in accordance with this Section 24.

25.2 Notice of Dispute; Informal Resolution. A dispute shall arise when one Party sends a written notice of dispute by certified mail to the other Party. The Parties shall first attempt to resolve the dispute through informal negotiations in which each party agrees to participate in good faith.

25.3 Arbitration. If the Parties cannot resolve the dispute informally within fourteen (14) days of such written notice, either Party may submit the dispute to arbitration to be conducted under the commercial arbitration rules of the American Arbitration Association. Arbitration shall be initiated by the serving of a written notice of intent to arbitrate (an "Arbitration Notice") by one party upon the other. Arbitration proceedings shall be conducted by a single arbitrator to be agreed upon by the parties; provided, however, that if the parties are unable to agree upon a single arbitrator within ten (10) days from the date of the Arbitration Notice, each party shall select an arbitrator and the two so named shall name a third arbitrator. The arbitration proceedings shall then be heard by the arbitrator(s) and the decision of the arbitrator, or of a majority if a panel of three has been selected, shall be final and binding on the parties. The arbitrator(s) shall have no authority to add to, detract from, reform or alter in any manner any provision of this Agreement. Judgment upon the arbitration award may be entered in any court of competent jurisdiction. Any Arbitration Notice must be served within two (2) years from the date on which the claim arose, and failure to bring such claim within such two year period shall constitute a waiver of such claim and an absolute bar to further proceedings with respect to it. All arbitration proceedings shall be conducted in Bangor, Maine unless the parties otherwise agree in writing. Notwithstanding the foregoing, nothing in this Agreement shall be deemed to preclude either party from seeking temporary or permanent injunctive relief from a court of competent jurisdiction with respect to any breach of this Agreement. For purposes of this

Section 25.0, a claim shall be deemed to have arisen as of the later of (i) the date on which the circumstances forming the basis for the claim first occurred, or (ii) the date upon which such circumstances are discovered or with reasonable diligence should have been discovered.

25.4 Costs. Each of the Parties will bear its own costs in connection with any dispute resolution proceeding. The Parties shall share equally the cost of any mediator or single arbitrator. If a panel of three arbitrators is appointed, each Party shall pay the costs of the arbitrator appointed by it, and the cost of the third arbitrator shall be shared equally.

SECTION 26.0 MISCELLANEOUS

26.1 Parties Bound. The covenants and conditions contained in this Lease shall bind the heirs, successors, executors, administrators, and assigns of each of the parties to this Lease.

26.2 Time of the Essence. Time is of the essence in this Lease, and in each and every covenant, term, condition, and provision of this Lease.

26.3 Section Captions and References. The captions appearing under the section number designations of this Lease are for convenience only and are not a part of this Lease and do not in any way limit or amplify the terms and provisions of this Lease. Unless the context clearly requires otherwise, references to section numbers and exhibits shall be deemed references to the section numbers and exhibits to this Lease.

26.4 Governing Law. It is agreed that this Lease shall be governed by, construed, and enforced in accordance with the laws of the State of Maine without regard for conflict of law provisions.

26.5 Entire Agreement. This Lease, together with the Development Agreement and the Master Waste Supply Agreement, shall constitute the entire agreement between the parties. Any prior understanding or representation of any kind preceding the date of this Lease shall not be binding on either party except to the extent incorporated in this agreement.

26.6 Modification of Agreement. Any modification of this Lease or additional obligation assumed by either party in connection with this Lease shall be binding only if such modification is documented in writing and signed by each Party or an authorized representative of each Party.

27.7 Additional Documents. The parties agree to execute whatever reasonable papers and documents may be necessary to effectuate the terms and intent of this Lease.

28.8 No Special or Consequential Damages. Notwithstanding any other provision of this Lease to the contrary, except in the case of fraud, neither party be liable under this Lease for lost profits or for any special or consequential damages whatsoever.

29.9 Interest. Any amount due but unpaid by either party to this Lease shall bear interest from the date thirty (30) days after the due date at an annual rate equal to the lesser of (i) the prime interest rate, as published in the Wall Street Journal, plus two percent (2%), or (ii) the maximum rate permitted under law

26.10 Counterparts. This Lease may be executed in counterparts. A signature transmitted by facsimile shall have the effect of an original.

[Signature page follows.]

IN WITNESS WHEREOF, each party to this Lease has caused it to be executed as a sealed instrument on the date indicated below.

MUNICIPAL REVIEW COMMITTEE

By: _____
Name:
Title:

FIBERIGHT, LLC

By: _____
Name:
Title:

LIST OF EXHIBITS

- A PROPERTY, LEASED PREMISES AND PROJECT SITE
- B DESCRIPTION OF FACILITY AND DESCRIPTION OF TENANT'S WORK
- C BUILDING AND PROPERTY VALUE OVER THE OPERATING TERM
- D LEASE CONSIDERATION
- E REPORTING REQUIREMENTS
- F FORM OF MEMORANDUM OF LEASE

EXHIBIT A

**PROPERTY,
LEASED PREMISES
and
PROJECT SITE**

[Exhibit to be Attached to Original]

EXHIBIT B

**DESCRIPTION OF FACILITY
AND
DESCRIPTION OF TENANT'S WORK**

Description of Tenant's Work

Tenant will design, acquire permits and approvals for, acquire financing for, engineer, and procure the Facility, and will construct, start-up, test, commission and operate the Facility on the Leased Premises.

Facility Description

The Facility will be comprised of an initial building of approximately 144,000 square feet, processing equipment, ancillary structures (e.g., tanks and piping) and site improvements that, collectively, will provide the means by which the Tenant shall have capability to accept and process Acceptable Waste into marketable products and Residuals, all in conformance with the requirements of this Agreement, the Master Waste Supply Agreement and the Facility Permits. Among the components of the Facility will be the following:

- Scale, scale-house and paved roadways capable of accommodating anticipated levels of delivery vehicles without excessive queuing time or back-ups onto the access road.
- Enclosed tip hall for accepting deliveries of solid waste, suitable to enable review of materials as they are unloaded and to store waste prior to processing.
- Enclosed process area for installation and operation and maintenance of processing equipment to enable materials to be sorted and processed into marketable products.
- Enclosed area for preparing organic materials for digestion or for conversion to other valuable products through process steps that include, as appropriate, waste pulping and hydrolysis of insoluble organics.
- Tanks and ancillary equipment for hydrolysis and digestion of organics for production and management of liquid and gaseous feedstocks and products.
- Load-out area for preparation, storage and transport of materials to markets, and for transport of residuals for disposal under the Residuals Agreement.
- Maintenance areas, storage, offices, administration areas and other areas in support of the operation of the Facility.
- Appropriate odor control systems and other nuisance and impact control measures consistent with the Facility Permits.
- Appropriate infrastructure for interconnection of the facility with water supplies, sewer service, electric service and other utility services.

{EP - 02066197 - v1 }

- Appropriate site improvements to facilitate management of incoming materials consistent with the Facility Permits.

Process Description

The process for producing materials and products from incoming Acceptable Waste shall include the equivalent of the following as consistent with the Facility Permits:

- Initial screening of delivered waste to remove unprocessable large materials and product contaminants and to provide an opportunity for identification and removal of Unacceptable Waste.
- Waste pulping or equivalent processing to facilitate materials separation.
- Sorting, recovery and processing of recyclable materials.
- Separation of soluble organics, which can be an efficient input to the digestion process, from insoluble organics, which would need to be subject to a hydrolysis process prior to conversion to products.
- Digestion and other processes to produce finished products from the soluble and hydrolyzed insoluble organics.
- Removal of residues for delivery to and disposal at the Back-up Facility.

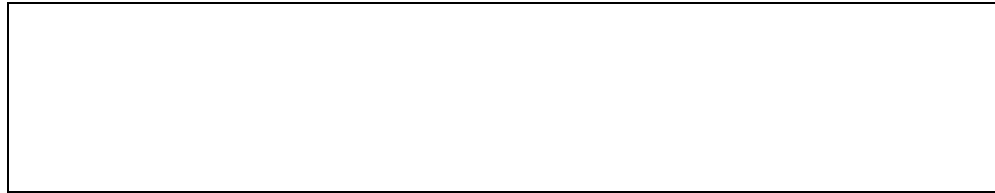
Permitted Uses

The Leased Premises shall be used solely for the purpose of constructing, operating and maintaining a mixed MSW conversion and processing facility in accordance with the facility and process descriptions provided above, and for other uses reasonably incident thereto, provided that

- (i) All uses must comply with the Facility Permits.
- (ii) No use may create a nuisance on or about the Property;
- (iii) No use shall result in excessive odor or fugitive litter;
- (iv) No MSW or other products shall be stored outside of designated enclosed areas.

The acceptance for storage or processing of Out-of-State Waste shall not be a Permitted Use.

EXHIBIT C
BUILDING AND PROPERTY VALUE
OVER THE OPERATING TERM



		Annual	Total	Building sale price, end of year	Land Sale price, End of year
0				7,000,000.00	5,000,000.00
1	2018	1.819%	1.819%	6,872,670.00	4,909,050.00
2	2019	2.564%	4.383%	6,693,190.00	4,780,850.00
3	2020	2.564%	6.947%	6,513,710.00	4,652,650.00
4	2021	2.564%	9.511%	6,334,230.00	4,524,450.00
5	2022	2.564%	12.075%	6,154,750.00	4,396,250.00
6	2023	2.564%	14.639%	5,975,270.00	4,268,050.00
7	2024	2.564%	17.203%	5,795,790.00	4,139,850.00
8	2025	2.564%	19.767%	5,616,310.00	4,011,650.00
9	2026	2.564%	22.331%	5,436,830.00	3,883,450.00
10	2027	2.564%	24.895%	5,257,350.00	3,755,250.00
11	2028	2.564%	27.459%	5,077,870.00	3,627,050.00
12	2029	2.564%	30.023%	4,898,390.00	3,498,850.00
13	2030	2.564%	32.587%	4,718,910.00	3,370,650.00
14	2031	2.564%	35.151%	4,539,430.00	3,242,450.00
15	2032	2.564%	37.715%	4,359,950.00	3,114,250.00
16	2033	2.564%	40.279%	4,180,470.00	2,986,050.00
17	2034	2.564%	42.843%	4,000,990.00	2,857,850.00
18	2035	2.564%	45.407%	3,821,510.00	2,729,650.00

19	2036	2.564%	47.971%	3,642,030.00	2,601,450.00
20	2037	2.564%	50.535%	3,462,550.00	2,473,250.00
21	2038	2.564%	53.099%	3,283,070.00	2,345,050.00
22	2039	2.564%	55.663%	3,103,590.00	2,216,850.00
23	2040	2.564%	58.227%	2,924,110.00	2,088,650.00
24	2041	2.564%	60.791%	2,744,630.00	1,960,450.00
25	2042	2.564%	63.355%	2,565,150.00	1,832,250.00
26	2043	2.564%	65.919%	2,385,670.00	1,704,050.00
27	2044	2.564%	68.483%	2,206,190.00	1,575,850.00
28	2045	2.564%	71.047%	2,026,710.00	1,447,650.00
29	2046	2.564%	73.611%	1,847,230.00	1,319,450.00
30	2047	2.564%	76.175%	1,667,750.00	1,191,250.00
31	2048	2.564%	78.739%	1,488,270.00	1,063,050.00
32	2049	2.564%	81.303%	1,308,790.00	934,850.00
33	2050	2.564%	83.867%	1,129,310.00	806,650.00
34	2051	2.564%	86.431%	949,830.00	678,450.00
35	2052	2.564%	88.995%	770,350.00	550,250.00
36	2053	2.564%	91.559%	590,870.00	422,050.00
37	2054	2.564%	94.123%	411,390.00	293,850.00
38	2055	2.564%	96.687%	231,910.00	165,650.00
39	2056	2.564%	99.251%	52,430.00	37,450.00
40	2057	0.749%	100.000%	-	-

Note: The foregoing schedule will be updated, as appropriate, to reflect final costs and the actual calendar quarter that the Facility is placed in service if the Commercial Operation Date does not occur in the second quarter of 2018.

EXHIBIT D
LEASE CONSIDERATION

Fixed Site Lease Payments. The Tenant shall pay the Landlord rent at the rate of One Hundred and Twenty-Five Thousand Dollars (\$125,000.00) per Contract Year, payable monthly. Rent shall be prorated for any Contract Year of less than twelve (12) months.

EXHIBIT E

REPORTING REQUIREMENTS

In order to facilitate communication between the parties, the following reports, meeting schedule and communications protocol are required. Changes to the schedule, contents, and form of these items will be made by mutual consent and communicated in writing.

Reports

During the period of time between the Effective Date and the Construction Date, the Tenant shall provide the Landlord a report each month regarding progress towards achieving the Construction Date, including:

1. An up-to-date schedule showing:
 - a. key tasks
 - b. critical path tasks
 - c. the Construction Date

During the period of time between the Construction Date and the Commercial Operation Date, the Tenant shall provide the Landlord a report each month regarding progress towards achieving the Commercial Operation Date including:

1. An up-to-date schedule showing:
 - a. key tasks
 - b. critical path tasks
 - c. the Commercial Operation Date

During the period of time starting when material is first received at the Facility through the end of the Term, the Tenant shall provide the Landlord a report, within ten (10) days of the end of each calendar month, for the preceding month that must include the following:

1. Total tons received for processing at the Facility, by material type, during the previous month
2. Total amounts of products produced by the Facility during the previous month

3. Total amounts of products removed from the Property during the previous month
4. Total tons of residuals removed from the Property during the previous month

During the period of time starting when material is first received at the Facility through the end of the Term, the Tenant shall provide the Landlord with copies of all annual reports submitted to permitting authorities, within two (2) weeks of the respective submittal dates.

All measurements and calculations shall be taken and performed in accordance with mutually agreed upon protocols.

Meetings

On not less than a monthly basis during the period between the Construction Date through the Commercial Operation Date, and on not less than a quarterly basis thereafter, , the Tenant and Landlord shall provide the necessary management staff and support personnel to meet, either in person, by phone, internet or other means necessary, to discuss the construction schedule, ensure coordination of site activities, share important updates and facilitate cooperation. Meetings will take place at the offices of the Landlord or other agreed upon location and will address, but not be limited to, the following agenda items: operational concerns, systems performance, facility improvements, process changes, regulatory communications for the respective permits of each party, upper management communications and community relations matters as needed.

Communications protocol

Both parties recognize that providing accurate information to facilitate site coordination and emergency response is critical to maintaining a smooth and safe working environment. Therefore, both parties shall provide the other the following information which shall be updated as needed:

1. A list of local site management, with an organizational chart and contact information for 24-hour communications, who are authorized to speak for and represent said entity and acceptable forms of communication necessary for notification
2. A list of other important off-site contacts and contact information
3. A list of critical contractors, and their contact information, that operate on-site under the purview of either the Tenant or the Landlord and related to construction or operations and maintenance of the Facility, on a temporary or long-term basis
4. A list of any other important contact information and procedures necessary for site operations and emergency response

5. Copies of as-built infrastructure plans with GPS coordinates and/or computer-aided design (CAD) information that identify critical control points for emergency response and the location of significant underground utilities.
6. Operational information necessary to run a safe and environmentally sound site including details on environmental, health and safety plans and procedures, chemical inventory and storage (Tier 2), emergency response or other similar plans
7. Copies of important documents relevant to the terms of the Lease including copies of permits, certificates of insurance, contact information for billing purposes or other pertinent items.

EXHIBIT F

MEMORANDUM OF LEASE

Lessor: Municipal Review Committee

Lessee: Fiberight, LLC

Leased Property: That certain lot or parcel of land containing approximately 90 acres located on the easterly side of the Coldbrook Road in Hampden, Maine, in substantially the same location and configuration as generally depicted on **Exhibit A**, and bounded northeasterly by land and/or easements now or formerly of Emera Maine (formerly Bangor Hydro Electric Company), bounded southerly and southwesterly by land now or formerly of H.O. Bouchard, Inc., and bounded northerly by the centerline of a private road leading from Coldbrook Road to the northeasterly corner of the Property in substantially the same location as depicted on **Exhibit A**

Term: The initial term shall commence on _____, 2016 and shall expire on and shall continue through the later of April 1, 2033, or the fifteenth (15th) anniversary of the Commercial Operation Date, as such term is defined in said Lease

Option to Renew: Up to five (5) consecutive periods of five (5) years each

Option to Purchase: Yes

IN WITNESS WHEREOF, the undersigned has caused this Memorandum of Leases to be signed and sealed by its representative, duly authorized, as of this ____ day of _____, 2016.

MUNICIPAL REVIEW COMMITTEE

Witness

By: _____

Name: _____

Title: _____

Duly Authorized

STATE OF MAINE

_____ County _____, 2016

Then personally appeared _____, as
_____ of Municipal Review Committee, and acknowledged before me
the foregoing instrument to be his/her free act and deed in his/her said capacity and the free
act and deed of said non-profit corporation.

Notary Public/Maine Attorney-at-Law
Printed Name: _____
Commission Expires: _____

EXHIBIT A

[Insert configuration of leased premises.]

Site Lease Agreement: Summary of Terms and Conditions

Prepared by the Municipal Review Committee, Inc., January 2016

The Site Lease Agreement between the MRC and Fiberight sets forth the rights and responsibilities of the MRC as the owner of the property where the Fiberight facility will be constructed and operated, and Fiberight as the tenant responsible for facility construction and operation, all while protecting and insulating the Joining Members from risks. The Site Lease would also be signed by the MRC, but would not be signed by the individual Joining Members; however, the terms and provisions of the Site Lease Agreement are linked to and referenced by certain terms of the Joinder Agreement. Key terms and conditions of the Site Lease Agreement can be summarized as follows:

- Initial term: 15 years with five 5-year extensions at option of Fiberight, provided that MRC can terminate if sufficient Joining Members do not extend their Joinder Agreements.
- MRC obligations: Develop road access and utility infrastructure to serve the site.
- Fiberight obligations: Design, construct, bring into commercial operation, operate and maintain the facility on the site. Comply with all permits and requirements for permitted uses. Avoid nuisance impacts.
- Commercial operation: Will occur when the Fiberight facility passes a performance test. Scheduled date for commercial operations is April 1, 2018.
- MRC oversight. In addition to its rights as the site owner, the MRC has oversight rights over operations, MSW supply, and significant changes in the nature of the business.
- Out-of-state MSW. Acceptance of out-of-state MSW is not a permitted use of the site.

The following matrix provides a more detailed summary of the contractual provisions in each of the sections of the Site Lease Agreement. This matrix is provided for summary and reference purposes only and is not intended to be a substitute or replacement in any way for the full language of the Site Lease Agreement. The language of the full Site Lease Agreement shall take precedence in the event of any apparent conflict in interpretation with this summary.

<i>Section</i>	<i>Description</i>
Parties	To be signed by the MRC (Landlord) and Fiberight, LLC (Tenant)
1.0 Definitions	Key terms include Change in Law and Force Majeure.
2.0 Description	MRC leases the site to Tenant, which will own the facility. Lease rights address stormwater management, access road, easements, etc.
3.0 Term	Initial term is 15 year from the start of commercial operations Tenant can extend the Agreement three times for 5 years each with 18 months' notice before the end of any term Even if Tenant wants to extend, MRC can terminate on 9 months'

	notice if sufficient Joining Members do not extend such that the Estimated Delivery Amount would be below 150,000 tons per year, provided that MRC either (a) buys the building from Tenant; or (b) sells the property to Tenant, in either case at the prices set forth in Exhibit C.
4.0 Rent, Access and Services	Tenant pays Rent per Exhibit D MRC builds the access road and extends water supply and sewer service Tenant connects to those services on the site and arranges all other services
5.0 Quiet Possession	Tenant has right of quiet enjoyment Tenant will keep tax incentives and environmental attributes that it creates Tenant will keep the site in the condition it is in as of the Effective Date and assumes all related risks of its activities on the site. Tenant will acquire and comply with all permits and licenses. The Landlord can enforce this provision even if the Maine DEP does not act. Tenants will not create nuisances, will provide a means for the public to report nuisances and will respond promptly diligently. The Landlord can enforce this provision. The Landlord has inspection rights The Tenant has 24/7 access rights The Tenant will coordinate with first responders regarding emergencies
6.0 Facility Development	The Tenant will cause the Construction Date to occur by January 1, 2017. Tenant will be responsible for all facility design, development and construction, but not for the site and access road and water supply and sewer services, which will be developed by the Landlord The Tenant will allow the Landlord to provide non-binding comments on permit applications and designs The Tenant will provide the Landlord with periodic reports The Tenant will provide the Landlord notice of the Construction Date
7.0 Facility Construction	The Tenant will construct the Facility and cause the Commercial Operation Date to occur by April 1, 2018, subject to stated reasons for delay The Landlord will construct the access road and infrastructure by stated dates subject to stated reasons for delay Stated reasons for delay can justify delays in the Commercial Operation Date The Tenant and Landlord will keep an updated construction schedule to monitor delays and impacts on the Commercial Operation Date The Tenant will conduct a Performance Test to demonstrate to the Landlord that it has achieved the Commercial Operation Date.
8.0 Facility operation	The Tenant will operate and maintain the Facility The Tenant will send residual materials to the landfill per the Residuals Agreement The Tenant will keep records of operation, provide reports to the Landlord, and communicate with the community

	The Landlord will arrange for maintenance of the access road
9.0 Capital Improvements	The Tenant can make Capital Improvements to the Facility The Landlord can review and make non-binding comments on the Capital Improvements The Site Lease and other agreements will be updated if necessary to reflect the improvements
10.0 Assignments; Transfers; Bankruptcy	The Tenant cannot assignment the Site Lease without consent of the Landlord. Fiberight itself must be involved through commercial operation and assignment is not allowed unless a qualified successor is offered Bankruptcy can be a breach of the Site Lease
11.0 Notices	Provides for notices
12.0 Taxes and Assessments	Tenant responsible for taxes on the leased premises and improvements
13.0 Liens	Tenant keeps clear and free of liens
14.0 Indemnification	Mutual
15.0 Insurance	Adequate amounts required
16.0 Right of First Offer	If the Landlord wants to sell, Tenant has first right to buy
17.0 Force Majeure	MRC and Tenant will work together to monitor Changes in Law and condemnation and avoid adverse actions Obligations can be suspended for a Force Majeure Event if outside the reasonable control of either party per the definition The affected party will develop a Force Majeure Plan regarding impacts on obligations and costs for approval by the other If the Plan is (ultimately) accepted, it goes into effect If rejected, and agreement cannot be reached, or if the Force Majeure event cannot be cured, then either party can terminate. If MRC terminates, then MRC must either (a) buy the building from tenant; or (b) sell the property to Tenant, in either case at the price set forth in Exhibit C If Tenant terminates, it must leave and vacate the premises in 90 days
18.0 Defaults and terminations	Limited and subject to specific performance (a party can get a court to order the other party to comply rather than terminate the Site Lease) Agreement terminates unless commercial operation is reached by January 1, 2020, as extended by any Excused Delay Period
19.0 Investor Rights	If Fiberight does not fulfill its obligations, its investors can step in to fulfill those obligations. The MRC will notify the investors of Fiberight defaults.
20.0 Reserved	The parties each waive subrogation
21.0 Waiver of Subrogation	Standard
22.0 Memorandum of lease	Standard
23.0 Environmental	Tenant covenants not to unlawfully release Hazardous Waste and shall

	remediate in such event
24.0 Waiver	
25.0 Dispute resolution	Disputes can be resolved by arbitration.
26.0 Miscellaneous	Standard provisions
Signatures	MRC and Fiberight
Exhibit A	Property description
Exhibit B	Facility description
Exhibit C	Building and Property Value
Exhibit D	Lease Consideration
Exhibit E	Reporting Requirements
Exhibit F	Form of Memorandum of Lease

FIBERIGHT COMPLAINT RESPONSE PROTOCOL

PURPOSE

The purpose of this Complaint Response Protocol is to establish a clear written process for Fiberight and MRC to receive, respond to, and address complaints regarding the Fiberight facility in the Town of Hampden, Maine, which will also include oversight by the Maine Department of Environmental Protection (“MDEP”). This complaint response protocol is in addition to monitoring protocols already required for the facility. The protocol is designed to ensure persons have a clear understanding of the following:

- (1) How to submit a complaint and who to contact;
- (2) How complaints are documented and processed;
- (3) How complaints are investigated, including oversight by the MDEP and the opportunity for the Town of Hampden to participate;
- (4) The time period in which complaints are processed, investigated, and addressed; and
- (5) The process for corrective actions, if necessary.

COMMUNICATIONS AND INFORMATION PROVIDED TO THE TOWN OF HAMPDEN

Fiberight and MRC will separately designate a contact person (and alternative contacts) for the Town of Hampden to communicate with regarding the Fiberight facility. This contact information will be provided in writing prior to construction of the facility, and be periodically updated as necessary during construction and operations. Fiberight and MRC will also continuously update the Town of Hampden regarding the appropriate contact person(s) at MDEP that are responsible for oversight of the Fiberight facility.

As further detailed below, the Town of Hampden will promptly be notified of any complaints received by Fiberight, MRC, or the MDEP, and be continuously updated on the processing, investigation, and response to a complaint. The Town of Hampden will be provided with corresponding information (including log books, investigations, reports, etc.) on a periodic basis and whenever requested by the Town of Hampden (whether the request is to Fiberight or MRC).

A graphical flow chart of how complaints are received and processed is also provided (see flow chart below).

MDEP OVERSIGHT

MDEP will have regulatory oversight and authority regarding construction and operation of the Fiberight facility to enforce the State of Maine statutory and regulatory standards for solid waste processing facilities. As noted above, MRC and Fiberight will provide the Town with

the contact information of the appropriate contact person(s) at MDEP who are responsible for oversight of the Fiberight facility.

MRC OVERSIGHT (IN ADDITION TO MDEP)

In addition to the MDEP, MRC will have contractual oversight of the facility's operations as detailed in the Lease between MRC and Fiberight and included in the Town of Hampden application.

1. MRC/Fiberight Representatives Specifically Designated to Receive and Process Complaints. Fiberight and MRC shall specifically designate and train representatives to receive and process complaints.
2. Manner of Receipt. Complaints may be received either electronically or via phone at the Fiberight facility using a 24/7 phone hotline. If a complaint is received by MRC, it shall be promptly forwarded to the Fiberight facility to the designated representative(s) trained to receive and process complaints. Fiberight and MRC shall also provide the Town of Hampden with contact information for individuals designated to receive complaints at Fiberight and MRC, as well as alternative contacts, in the event that the Town of Hampden receives a complaint so the Town may forward the complaint to these designated individuals for receipt and processing.
3. Initial Information Collected. Upon receipt of a complaint at the Fiberight facility, initial information shall be collected and documented in a complaint report (see below), including: The caller's name and address; date and time of the complaint; meteorological conditions, and whether the caller would like someone to visit them at the location of the complaint to verify the odor. The Town of Hampden will be notified of all complaints. The complaint is also documented in a log book that will be periodically provided to the Town of Hampden and upon request.
4. Commencement of Investigation. Fiberight staff shall relay the complaint information to the appropriately trained facility response staff for follow-up action. The Town of Hampden will be contacted and given a reasonable opportunity to participate in the odor complaint investigation and response. The methodology, personnel, professionals, and/or equipment utilized to investigate a complaint will be tailored to the type, scope, and nature of the complaint. The MDEP will have regulatory oversight of the complaint investigation techniques and Fiberight's response to a complaint, including any corrective actions taken.
5. Site Visit. If a visit is requested, the appropriate staff member should note the conditions observed during the visit. At a minimum, the following should be noted; time since original complaint was received, wind direction, meteorological conditions, distance from the facility, and odor noted. (see complaint report below). The Town of

Hampden will be contacted and given a reasonable opportunity to participate in the site visit.

6. Facility Inspection. In either case where a visit is requested or not requested, facility staff will perform an inspection of the facility to attempt to identify/locate potential sources of odor that may have generated the complaint. Upon completion of the inspection appropriate corrective measures will be taken as required.. The Town of Hampden will be contacted and given a reasonable opportunity to participate in the inspection of the facility.
7. Notice of Site Visit/Inspection & Response. Following the stie visit (if requested) the inspection and response, written notification will be submitted to the Town of Hampden, MRC, and MDEP detailing the source of the odor and the corrective actions taken to address the complaint.
8. MDEP Written Report. If MDEP determines that the facility created an off-site odor nuisance, Fiberight will submit a written report to the Department detailing the cause of the odor, follow-up actions taken, as well as plans for future treatment, minimization, and control of nuisance odors. This report will be submitted within 30 days.

ODOR COMPLAINT REPORT

FIRST PAGE TO BE FILLED OUT AT THE TIME OF THE COMPLAINT

Date: _____ Time: _____

Name of caller: _____

Contact information for the caller: _____

Location of complaint: _____

MRC Notified? YES / NO

Date: _____ Time: _____

Town Of Hampden Notified? YES / NO

Date: _____ Time: _____

Hampden to attend investigation?

MDEP Notified? YES / NO

Date: _____ Time: _____

MDEP to investigate?

Does the caller wish to have the odor verified? YES / NO

Meteorological Conditions

Wind Direction? _____

Wind Speed? _____

Temperature? _____

Precipitation? _____

Cloud Cover (circle one)? Clear Sky / Partly Sunny / Broken Sky / Cloudy

TO BE FILLED OUT BY RESPONDER.

Was a visit to the caller requested? YES / NO

Date and time of visit or N/A: _____

Distance of the complaint from the facility: _____

Was an odor noted? YES / NO

Was the caller's location downwind of the facility? YES / NO

Is there anything unusual happening at the facility? YES / NO

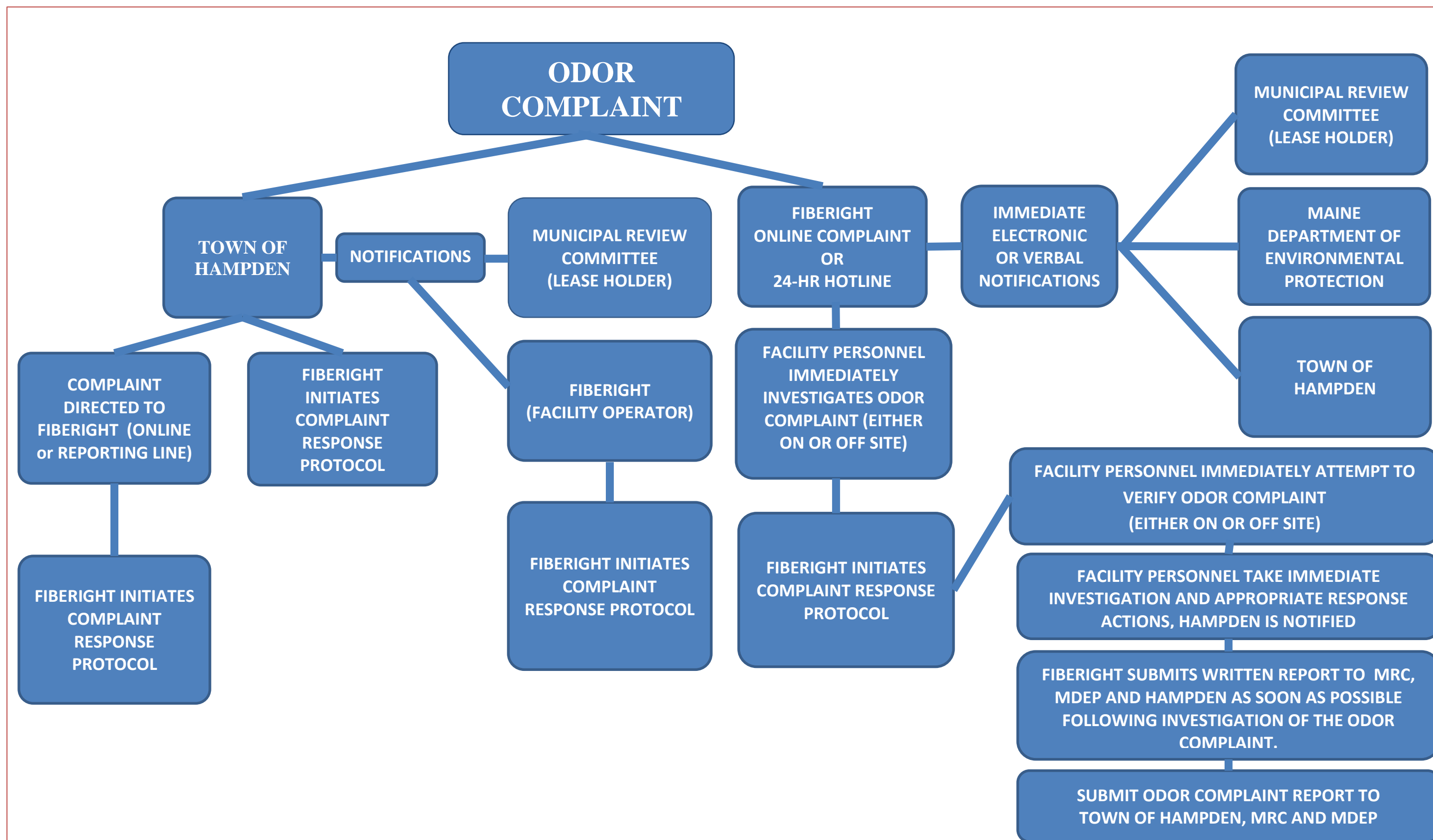
Any unusually odorous waste loads delivered? YES / NO

Was a follow-up inspection conducted at the facility? YES / NO

Source of Odor Complaint Identified.? YES / NO

If "YES" provide additional information: _____

What steps were taken to correct identified odor source(s)?: _____



OPERATION AND MAINTENANCE MANUAL

FOR

**FIBERIGHT, LLC
HAMPDEN, MAINE**

Manual Prepared By:

CES, Inc.
465 South Main Street
P.O. Box 639
Brewer, ME 04412
207.989.4824

**MAY 2016
JN: 11293.001**

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DRAFT

FOREWORD

The purpose of this Operations and Maintenance (O&M) Manual, hereinafter referred to as “Manual” is to provide guidance to Fiberight, LLC (Fiberight) management and operating personnel for the operations and maintenance of the proposed processing facility (facility) located on a 95 +/- acre parcel in Hampden, Maine. This facility will be owned and operated by Fiberight. The Municipal Review Committee, Inc. (MRC) and Fiberight have an agreement as such that the MRC and its member communities will supply the Municipal Solid Waste (MSW) required to operate the facility. Fiberight submitted a Solid Waste Processing Facility License Application to the Maine Department of Environmental Protection (MDEP) in May 2015. This Manual is intended to ensure that Fiberight operates its facility in accordance with their Solid Waste License and the operational requirements specified in 06 096 CMR Chapter 409.4, last revised July 27, 2014. The facility is located off the Coldbrook Road approximately 0.6 miles to the south of Interstate 95. Refer to the Location Map in **Appendix A**.

This Manual has been prepared to conform with the Maine Solid Waste Management Regulations (MSWRs) effective November 2, 1998. Refer to a copy of the appropriate regulations in **Appendix C**.

Personnel involved in the daily operation of the facility consist of management and employees retained by Fiberight.

Fiberight is responsible for ensuring that operations are carried out in accordance with the current SWMRs, the facility’s Solid Waste License, and this Manual. This responsibility includes policy decisions, contractual arrangements, maintenance, accounting, fiscal, and other operations pertinent to the management and operation of the facility.

All on-site work will be performed by employees of Fiberight. Personnel operating the facility shall be familiar with, and follow, this Manual’s intent and general direction. No Manual can provide complete details or answers to all day-to-day problems and situations. Each operation is different. The Site Supervisor or Manager shall record any operational challenges that may arise and ensure corrective measures are taken as required. This information can be used to refine the Manual and provide guidance for facility operational changes if necessary. **Appendix I** contains a list of agencies, firms, and personnel that can provide assistance and answer any questions you may have regarding this Manual and basic operation of the facility.

GENERAL FACILITY OPERATIONS

A. OPERATIONS MANUAL

The Fiberight facility must be operated in accordance with this Manual which incorporates the operating requirements of its license and the Solid Waste Management Regulations (SWMRs). This Manual must be available for inspection by the Maine Department of Environmental Protection (MDEP) staff during normal business hours. This Manual must be updated to keep current with operational changes implemented at the processing facility.

This Manual includes the information that would enable supervisory and operating personnel, and persons evaluating the operation of the facility, to determine the manner in which policies, procedures, monitoring, maintenance, inspection, and legal requirements that are followed to ensure safe and environmentally sound operation on a daily and yearly basis.

A copy of the facility license, including amendments and revisions to that license, and a copy of the applicable sections of the most recent SWMRs can be found in **Appendices B** and **C**, respectively.

B. GENERAL OPERATIONS

The Fiberight facility in Hampden is designed to process 650 tons per day of Municipal Solid Waste (MSW). The MSW generated within area communities, including 187 member communities of the Municipal Review Committee (MRC), will be delivered to the facility on a 5½ day basis in such volumes to support the daily processing rate. The facility has been designed to be able to accept a peak daily delivery of 950 tons per day of MSW. The as-delivered MSW is first pre-sorted to remove waste which cannot be processed (“Non-processible Waste”), such as inert materials, large bulky items, and waste which, in the reasonable judgment of the operator based upon visual inspection at the time of delivery could, if processed, result in damage to the facility, interruption of normal facility operations, or cause extraordinary processing or maintenance costs, solely by the virtue of the physical or chemical properties of such waste.

The pre-sorted material is then conveyed to a primary trommel where the processible waste over 20-inches is removed and routed to a shredder for size reduction¹. The 1½-2-inch post shredder material is then sent to the fines processing system. The 20-inch minus material is routed to a screen where the 2-inch minus fines containing glass, grit, and small organic materials are removed and routed to the fines processing system. The over 2-inch material is sent to a continuous pulper undergoing a pulping process which produces a biomass pulp and a reject stream containing the majority of the recyclables. The pulper reject stream is then subjected to a second sort process in which the recyclables in the stream are segregated into their individual components for sale to the marketplace. The recyclables to be produced from the second sorting process and sold will be plastic films, rigid plastics, and ferrous and non-ferrous metals.

¹The 20” screen size referred to above may be altered periodically depending on experienced waste composition and seasonal adjustments.

The remaining residue from the second sort process is deposited into staged roll-off containers or walking floor trailers for removal and eventual disposal.

The biomass pulp exiting the continuous pulper is routed to the wash system where any remaining soluble organic material, including solubilized food waste, as well as any remaining non-solubilized food waste, small inorganic materials, ash, sand, glass, small plastic particles, and/or grit (“wash system rejects”) are removed from the biomass pulp producing a clean cellulosic pulp. The solubilized organic material is pumped to the anaerobic digestion system where it is converted to biogas in a high rate Anaerobic Digester (AD) and the wash system rejects are conveyed to the fines processing system. The fines processing system is fed material from the post primary trommel overs shredder, the post trommel unders screen minus fraction, and the wash system rejects. In this system, the fines are separated into individual component streams of small plastics, metals, un-pulped material, wood and soluble organics, and residue. The metals are recovered and sold, the un-pulped material is sent back to the pulper, the PHS is conditioned as required for use as a boiler fuel, and the soluble organics are sent to the AD.

The clean cellulosic pulp from the wash system is then routed to be further processed in the pre-treatment system and finally the hydrolysis system. The pre-treatment system prepares the cellulosic pulp for hydrolysis by heat pasteurizing it and mechanically treating to facilitate the hydrolysis process. In the hydrolysis system, the pretreated pulp is exposed to enzymes thereby converting carbohydrates contained in the cellulose to sugars. The hydrolysate from the hydrolysis process is sent to a set of large filter presses where the unconverted cellulose or post hydrolysis solids (PHS) is removed from the stream with the purified industrial sugars being sent to either the AD or sold as industrial sugars dependent on market conditions. Sugars sent to the AD are converted to biogas, along with the soluble organics, purified, and injected in to the nearby natural gas pipeline. Residue materials from the secondary sort process and fines processing system are loaded into roll-off containers or transfer trailers and land filled.

B.1 Operations

The facility must be operated and maintained in a manner that ensures it will meet the approved design requirements, will not contaminate ground or surface water, contaminate the ambient air, constitute a hazard to health or welfare, create a nuisance, and will meet the standards in Chapter 06 096 CMR Chapter 400, section 4.

Good housekeeping practices will be implemented as necessary to meet the standards described above. In addition, the following shall also be implemented or maintained:

1. All waste products received by the facility shall be handled inside the facility within the site confines, and stored and processed indoors within approved infrastructure. Waste handling, sorting activities, and storage will occur within the processing building. Refer to the Site Plan in **Appendix A** for the handling and processing areas. Material storage may be rotated between the different storage areas to allow for increases or decreases in demand of a particular product received by the facility.

2. A paved road provides access to the facility. If necessary during dry periods, the access ways may need to be wetted to control excessive dust generation resulting from facility activities. The access road will be kept free of excessive dirt and debris by sweeping or other methods, to ensure a clear travel way.
3. A Stormwater and Erosion and Sediment Control Plan has been prepared under separate cover.
4. Sequencing: All material received at the facility after weighing shall be delivered directly to the tipping area inside the facility (refer to Site Plan, **Appendix A**). Sequencing of material stored at the facility is not anticipated to occur.
5. Outgoing: Outgoing residue waste to be landfilled shall be loaded into roll-off containers or transfer trailers on an ongoing basis as for approximately 16 hours of each day of operations. On-site storage is not anticipated at the facility for durations requiring special licensing.
6. Parking and yard areas shall be maintained free of excessive dirt or debris.

B.2 Personnel

The operation of the facility must be under the overall supervision and direction of a Site Supervisor or Manager qualified and experienced in the facility's operation, maintenance requirements, and safety procedures. The Site Supervisor or Manager must take whatever measures necessary to familiarize all personnel responsible for operation of the facility with relevant sections of this Manual.

B.3 Equipment

Fiberight maintains equipment sufficient to meet the operational requirements of the facility. Routine maintenance of all equipment is provided as necessary. Below is a list of equipment maintained at the site.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____

B.4 Environmental Monitoring

The facility currently does not maintain a Storm Water Pollution Prevention Plan (SWPPP) because all processing activities will occur within a 144,000 square foot building. A facility qualifies for “no exposure” when all industrial activities and materials are protected by a storm resistant shelter designed to prevent exposure to stormwater, and the discharge satisfies the conditions at 40 CFR 122.26(g) and Appendix AE of the General Permit.

Fiberight will not be processing wastewater treatment sludge or septage; therefore, odor monitoring is not proposed at the facility. At a minimum, weekly odor inspections will be conducted at the facility during normal operations. Daily inspections will be conducted during initial operations. All processing at the facility will take place inside of a 144,000 square foot building and it is not expected that nuisance odors will materially exist outside of the facility.

No other environmental monitoring is proposed for this facility.

B.5 Fire Protection

The Site Supervisor should make sure that the Town of Hampden Fire Department is familiar with the operations of the facility, and in conjunction with them, develop a Fire and Rescue Plan.

Fiberight shall prevent and control fires at the facility by complying with at least the following:

1. Arrangements shall be made with the Town of Hampden Fire Department to provide emergency service whenever needed in accordance with the Fire and Rescue Plan.
2. Both the Occupations Safety and Health Administration (OSHA – 29 CFR 1910.252(a) Fire Prevention and Protection Basic Precautions) and the National Fire Protection Association (NFPA - 51B Standard for Fire Prevention during Welding, Cutting, and Other Hot Work) have established specific requirements for conducting cutting operations (or other “hot” work). Both standards hold management and supervisors responsible for conducting overall safe cutting operations, providing fire protection equipment, and authorizing hot work. At a minimum, OSHA and NFPA fire prevention and protection standards should be utilized during “hot” work at the site.
3. Provide and maintain sufficient on-site fire equipment, such as detachable fire extinguishers for minor fires. Fire extinguishers shall be maintained in the facility at a number of locations, the office building, and on all mobile equipment.

B.6 Vector Control

Vectors are considered to be any insect, bird, rodent, or other organisms capable of transmitting or carrying germs and disease. Vectors are usually only problematic at facility’s that store putrescible waste. Based on the nature of the materials processed at Fiberight, vectors will need to be controlled by means that eliminate the potential for transmitting germs and or disease. Therefore, Fiberight will contract with a licensed 3rd party contractor to create and operate a vector management plan designed to reasonably control vectors at the facility. Fiberight does not

anticipate storing putrescible waste for long periods of time because reserve waste supplies are not required for facility operations; therefore, nesting and reproduction opportunities for vectors may be managed.

B.7 Dust Control

Section B.1 of this Manual provides dust control measures utilized at the facility.

B.8 Material Storage

MSW Storage: The tipping floor in the facility is capable of storing MSW for up to two days prior to processing. MSW will be turned over every two days as it is received at the facility.

Residue Storage: Residues generated from sorting thru normal operations which results in material needing to be landfilled will not be stored on-site for any longer than 24 hours. Once a container or trailer is filled it will be transferred within 24 hours to a licensed solid waste facility for landfilling.

Recyclables Storage: Recyclables generated from sorting will only be stored on-site long enough to fill transport trailers and then sold as commodities on the open market.

B.9 Routine Maintenance and General Cleanliness

Fiberight must provide for routine maintenance and general cleanliness of the entire facility site. This is accomplished through good housekeeping practices utilized at the site as described in Section B.1 of this Manual.

Weekly inspections of the facility will be performed. The inspections will include all processing equipment and infrastructure. A Facility Inspection Checklist is included in **Appendix F**. At a minimum, all equipment and infrastructure will be inspected for signs of corrosion, leaks, and waste build-up, as applicable. Infrastructure will also be inspected in accordance with manufacturers' recommendations. Additional inspections will be performed in accordance with the facility's Odor Management Plan, and Stormwater BMP Inspection Log. All infrastructure maintenance will be scheduled in accordance with manufacturers' recommendations unless otherwise indicated as necessary through routine inspection.

A copy of the Facility Inspection Checklist, as well as responses to any issues noted during the inspection, will be maintained at the facility and a summary of inspection results, including date of inspection and follow-up actions taken, will be included in the facility's annual report.

B.10 Erosion and Sedimentation Control

The facility must control sedimentation and erosion during operation of the facility as required by the facility's Stormwater and Erosion and Sediment Control Plan.

B.11 Tipping Floor Management Plan

During the MSW unloading process, a tip floor attendant will observe the waste and identify any material suspected of being unacceptable. Additionally, the loader operator will continuously look for material that may appear to be unacceptable waste as the incoming material is spread and stockpiled. To ensure that all MSW on the tipping floor can be accessed and inspected, and to ensure that no waste is allowed to stay on the floor for an extended period of time, waste will be placed in 3 numbered areas. The areas will be delineated through the use of painted stripes on the floor and up the back wall of the tipping floor. Each area number (1-3) will be painted on the wall. Each area will be filled and emptied progressively at a rate that is dependent on the waste acceptance rate for that day. For example, waste will be deposited in area 2 while it is being removed from area 1. As it is processed, waste will be removed to the bare floor prior to additional waste being placed in that location. Once the area has been emptied, a date stamped photograph will be taken, with the numbered wall clearly visible, as documentation and kept on file at the facility. This approach will allow for waste to be processed in the order that it enters the facility, first in/first out.

B.12 Litter Control

Due to the fact that all waste handling activity is performed within the building, litter is not expected to become an issue at the facility. Regular inspections, daily and weekly, will be conducted around the facility and any litter will be noted and removed at that time. If it becomes evident that litter is becoming problematic, staff will review waste handling protocol to determine the likely cause and the appropriate change will be made, as practicable.

C. ACCESS TO FACILITIES

Fiberight shall provide, and maintain in good repair, access roads at the facility site as well as maintain adequate space to allow the unobstructed movement of emergency personnel and equipment to operating areas of the facility. The access road will be gated and locked when the facility is not in operation. A sign will be posted outside if the facility displaying the hours of operation.

Fiberight's normal operational hours are:

Monday - Friday: 6:00 AM to 6:00 PM

Saturday: 6:00 AM to 2:00 PM

D. ACCEPTANCE AND DISTRIBUTION OF SOLID WASTE

D.1 Acceptable Waste

In general, MSW that is accepted at the facility includes solid waste originating from household and commercial sources. Fiberight may only accept wastes for which the facility has been specifically designed and permitted to accept by the MDEP. Incoming wastes must undergo a visual inspection and, if appropriate, analysis to ensure that only wastes allowed by the facility license are accepted at the facility. Screening for unacceptable waste will start at the scale house where the attendant will randomly interview drivers as to the contents of their loads. A list of common unacceptable items will be clearly posted at the scale house. During the unloading process on the tip floor, an attendant will observe the wastes as they are unloaded and examine any material suspected of being an unacceptable waste. Additionally, the loader operator will continuously look for material that may appear to be unacceptable as the incoming material is spread, stockpiled and eventually fed onto the conveyors feeding the Primary Sort Process. Although Universal and Household Hazardous Waste, such as Cathode Ray Tube Monitors, lamps, and solvents, will not be routinely accepted at the facility, Fiberight acknowledges that household waste may occasionally contain such an item. If such an item is discovered during waste handling, it will be removed from the process and stored in a designated area until it can be picked up for disposal at a facility licensed to handle the particular waste. The area will be 6ft X 6ft in size and enclosed. All wastes will be stored in appropriately labelled containers, for no more than 1 year. Fiberight will install a Closed Circuit Television (CCTV) system that will include cameras positioned to view the tip floor. To the extent practicable, Fiberight will use this system to augment visual inspections, and to track the source of any unacceptable waste.

D.2 Hazardous and Special Waste Handling and Exclusion Plan

A Hazardous and Special Waste Handling and Exclusion Plan is included in **Appendix D** of this Plan.

D.3 Secondary Materials

Secondary materials consist of post hydrolysis solids (PHS) resulting from the gasification of biomass residues. Solid residues from the hydrolysis process will be used in the facility's gasification boiler to serve the facility's electrical and heating needs. A Beneficial Use License (refer to 06 096 CMR Chapter 418.3.G) is not anticipated because the secondary materials are generated at the facility and will be combusted in the facility's boiler.

Secondary materials must be distributed in accordance with the provisions of this Manual (refer to Section D.4 below), or other applicable solid waste standards.

D.4 Waste Disposal

The Operator must have procedures in place for disposal of residues and other solid waste generated by the processing facility, including contingency procedures for implementation during

emergencies and shutdown periods. The Operator must also maintain a valid contract with a solid waste facility that has MDEP approval to accept the waste.

Residue waste generated at the facility generally includes non-processibles, materials processing residue, and ash from the gasification of post hydrolysis solids/wood residues which will be used as boiler fuel at the facility, all of which will be landfilled at licensed solid waste facilities. Biofuel will be sold as Compressed Natural Gas (CNG). All residues separated from MSW will be transferred to a licensed disposal company in the State of Maine. Fiberight currently anticipates transporting all residues and bypass MSW to Crossroads Landfill in Norridgewock, and/or the Juniper Ridge Landfill in Old Town, and /or the Tri Community Landfill in Fort Fairfield; and/or the Hatch Hill Landfill in Augusta.

No liquid waste will be generated except for a process wastewater stream caused by periodically purging the plant water system and cooling tower blowdown. This process wastewater stream is collected in a tank, tested and discharged to the local wastewater treatment plant for processing.

Any other waste resulting from cleaning and maintenance of the facility will be processed or landfilled as described above.

D.5 Treated Wood

Wood accepted at the Fiberight facility will only be the small fraction that is expected to be included with incoming MSW. Fiberight will not accept separate supplies of woodwaste or process woodwaste such that it will be marketed and sold as biomass wood fuel, mulch or alternative daily landfill covers.

Fiberight does not accept construction and demolition debris wood or any source-separated treated wood for processing at their facility.

E WASTE CHARACTERIZATION

E.1 Analytical Requirements

In accordance with 06 096 CMR Chapter 405.6.C. solid wastes proposed to be disposed at a solid waste disposal facility must be characterized in conformance with the requirements listed in 06 096 CMR Chapter 405.6.C. Fiberight will be producing non-organic residues and ash requiring disposal at a licensed solid waste facility. Non-organic residues which may be classified as "Miscellaneous Wastes" listed in 06 096 CMR Chapter 405.6.C.(2). The analytical requirements listed include the following:

- ◆ Complete Toxicity Characteristic Leaching Procedure (TCLP) (per US EPA Method 1311, Federal Register/Volume 55, No. 126, 1992);
- ◆ Totals for Aluminum, Arsenic, Barium, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, and Zinc (per Methods in US EPA SW-846);

- ◆ Chloride, percent carbon, percent moisture, pH, phosphorus;
- ◆ Reactivity Characteristics;
- ◆ Ignitability Characteristics; and
- ◆ Additional parameters as identified by the applicant or the Department. These additional parameters must be based upon the raw material, the proposed activity, or the facility.

Fiberight anticipates generating between 3,000 and 4,000 tons of ash per year in the facility's biomass boiler. Ash will be disposed of in a landfill licensed to accept it and will be characterized in accordance with 06 096 CMR Chapter 405.6.C(4) and sampled for those parameters listed for biomass and fossil fuel boiler ash. Prior to initial acceptance at a solid waste facility, a sufficient number of samples to meet the requirements for statistical analysis as required by US EPA SW-846 must be analyzed as follows:

- ◆ TCLP Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver) per US EPA Method 1311, Federal Register/Volume 55, No. 126, 1992;
- ◆ Chloride, percent carbon, percent moisture, pH, phosphorus.

After initial characterization is complete, ash must be analyzed for the parameters listed above at a frequency of one representative sample quarterly.

Additional analytical requirements may be required by the disposal facility receiving waste for disposal.

F. ODOR CONTROL

F.1 Introduction

Due to the nature of the wastes that are accepted at the Fiberight facility, the potential for occasional odors may exist. Multiple systems and procedures have been included in the design of the facility to minimize any off-site odor migration. An inspection and maintenance plan has also been developed to ensure that staff is able to quickly identify and mitigate any potential causes of nuisance odor. The Air Control and Odor Management Systems are outlined in Section F.2 below. Odor Inspection and Maintenance Procedures are outlined in Section F.3.

During normal operation of the facility, there may be times when the waste processing operation is suspended to perform maintenance on the equipment. To control odors that may occur during these outages a Start-Up, Shutdown, and Malfunction Plan for waste storage has been developed. This plan is outlined in Section F.4.

While systems have been designed to minimize any off-site odor, Fiberight has established an Odor Complaint Response Program to allow residents or businesses near the facility to report any potential issues, should they occur. This program also assists Fiberight with early identification and mitigation of any potential odor issues at property lines. The basic procedures for accepting and responding to an odor complaint are detailed in Section F.5. This section also provides the

operator with a list of additional controls that can be implemented to address any sources of odor that may be identified.

F.2 Air Control and Odor Management System

The Fiberight facility has been designed to allow the operator to maintain negative pressure by the use of a multiple hood/intake register air removal system within the waste handling and processing areas of the building. In order to manage air-flow appropriately, two separate scrubber systems will be provided and sized to maintain a pressure of negative 0.1 inches of water column when the overhead doors are open. One of the odor scrubber trains will run continuously to maintain the design negative pressure, with the second system designed to supplement the primary odor scrubber system when the doors are open for waste delivery. To minimize the length of time the doors are open, to the greatest extent practicable, the door system design will incorporate high-speed fabric over-head doors to allow them to open and close at a faster speed than conventional over-head doors. As a precaution, an odor neutralizing spray system will be installed above the doors. Although this system will not be used during typical operations, it will serve as a back-up odor control measure should one of the scrubber systems require maintenance and a negative pressure cannot be maintained when the door is open. Air control hoods/registers have been strategically placed within the building to target areas where waste odors are more likely to be present. Each scrubber system has been designed with a cross-flow scrubber and a packed tower scrubber installed in series. The system is designed to remove odorants from the air prior to its discharge. The proposed odor control scrubbers will provide 95% control of ammonia, 99% control of hydrogen sulfide, and 99% of volatile organic compounds (VOCs). The filter media within the scrubbers is high efficiency polypropylene spherical packing through which the liquid scrubbing media flows to contact the gas stream. The media within the scrubber systems will be inspected and replaced in accordance to the manufacturer's recommendations.

Waste hauling vehicles are another potential source of odor at the facility. While Fiberight is not responsible for odors caused by these trucks while they are travelling to the facility, the operator has agreed to work with the haulers to minimize the risk of off-site odors caused at the facility due to idling vehicles. In the event that there is a waste truck that exhibits a higher degree of odor, the facility operator will prioritize that vehicle for entrance into the tip floor where odors can be controlled by the odor scrubber system operating in the tipping area. Fiberight will initiate communication with the hauler to identify the source of the waste and discuss potential ways to mitigate this situation in the future. Trucks from locations that typically have a higher degree of odor may be scheduled for receipt in order to minimize the time the truck is in queue.

The facility operator will maintain sufficient odor neutralizing agents on-site to respond to individual trucks or localized areas of the facility in a timely manner. Odor neutralizing agents will likely be in the form of powders and sprays that will allow for the appropriate application method based on the odor source.

F.3 Odor Inspections and Maintenance Procedures

As part of operations of the facility, regular inspections will be performed. These inspections will include checks for existing odor as well as potential odor causing issues on the site. These inspections will include, at a minimum, daily visual observation of the operations for obvious signs of damage or abnormal conditions within the building that will affect collection efficiency of the odor control system. During the first month of, and for a total of 6 months during, the first year of operation a daily inspection and odor survey will be conducted around the facility. The daily inspection period must include the summer months when waste odors are expected to be strongest. If operations commence in the winter months and no odor issues are identified during the first month, inspections will be reduced to weekly until warmer weather. If after 6 months, including summer months, no odor issues are identified, inspections will be permanently reduced to weekly. Inspection results will be submitted to the MDEP weekly unless an odor incident is noted in which case the MDEP will be notified within the day. To assist the operator with continuous visual observations, visual indicators will be provided to ensure that air is being pulled into the building and from the hoods/registers.

The facility inspection should be conducted by a staff member that has not become desensitized to waste odors. During the inspection, the individual should walk around the facility and look for conditions that may cause odor and note any odor that was observed. Examples include: buildup of liquid on the access road that may have come from waste haul vehicles; odors observed around the stormwater ponds; and strong odors noted at any distance from the facility when the doors are opened. Any follow-up actions should be noted on the inspection form. This information will be used by the facility to schedule appropriate maintenance and further identify necessary odor control systems.

F.4 Start-up, Shutdown, and Malfunction

There may be times during operations of the facility that systems will be offline for repairs due to scheduled maintenance or malfunction. Scheduled maintenance will be organized such that if possible, partial processing can still be carried out during these periods including the maintenance on the odor control systems. During these times, the operator will minimize the amount of waste material stored on-site and match the quantity stored with what is needed for continued processing at the then current capacity. It should also be noted that the odor control scrubbers will still be in operation during scheduled and unscheduled shutdowns of the balance of the facility.

If the scheduled maintenance or malfunction of the facility is of such a nature that the waste material stored on-site would not be able to be processed within seventy-two (72) hours, such as is the case for a long weekend, the operator has made arrangements with Waste Management's Crossroads Landfill in Norridgewock, Maine to accept bypass waste from the facility. In such circumstances, waste will be diverted at the earliest possible time to allow for minimal waste storage on the tipping floor during the shutdown. For extended shutdowns, the waste diversion procedures described above will be followed. Whenever possible, maintenance activities will be conducted during hours that the facility is not receiving waste. This will allow the operator to keep

the overhead doors in the closed position and to continuously operate at least one of the two odor scrubber trains. Unless there is an emergency condition, maintenance or repair activities that require both scrubber trains to be shutdown will be performed at scheduled times. The operator will reduce the quantity of waste to the maximum extent possible during these scheduled outages.

F.5 Odor Complaint and Response Plan

Fiberight is aware that, as a solid waste facility, odors may be experienced on-site. Fiberight has taken numerous steps to minimize the migration of odors from the facility, and is committed to being a good neighbor and responding to any neighbor odor complaints that may be received. To better serve the surrounding community, the operator has established the following protocol for responding to odor complaints.

F.5.1 Complaint Receipt System

Prior to receipt of the first load of waste the facility will have in place a system for receipt of odor complaints. The methods for submitting odor complaints will be available on Fiberight's website and provided to the Town of Hampden. This system will include a web based reporting form and 24-hour per day hotline.

Submittal of an odor complaint through the online reporting form will result in the automatic notification of Fiberight, the MRC, MDEP, and a Town of Hampden representative.. The online system will allow for updates to the initially submitted form to include the results of the complaint investigation and any corrective actions that may have been taken. This form will be continually available to the MRC, MDEP and the Town of Hampden.

In addition to the online reporting system, trained staff will be available to receive odor complaints from the public 24 hours per day, 7 days per week. Should the Town of Hampden receive Odor Complaints they will have the option to record the complaint on the Complaint form or direct the caller to the Fiberight 24-Hour odor complaint hotline or on-line reporting form.

The operations manual will be amended to include a facility contact phone number and web address for online submittal of complaints once construction of the facility is completed.

F.5.2 Basic Process for Odor Complaint Response

The basic steps to be followed when responding to an odor complaint is as outlined below:

1. MRC/Fiberight Representatives Specifically Designated to Receive and Process Complaints. Fiberight and MRC shall specifically designate and train representatives to receive and process complaints.
2. Manner of Receipt. Complaints may be received either electronically or via phone at the Fiberight facility using a 24/7 phone hotline. If a complaint is received by MRC, it shall be promptly forwarded to the Fiberight facility to the designated representative(s) trained to

receive and process complaints. Fiberight and MRC shall also provide the Town of Hampden with contact information for individuals designated to receive complaints at Fiberight and MRC, as well as alternative contacts, in the event that the Town of Hampden receives a complaint so the Town may forward the complaint to these designated individuals for receipt and processing.

3. Initial Information Collected. Upon receipt of a complaint at the Fiberight facility, initial information shall be collected and documented in a complaint report (see below), including: The caller's name and address; date and time of the complaint; meteorological conditions, and whether the caller would like someone to visit them at the location of the complaint to verify the odor. The Town of Hampden will be notified of all complaints. The complaint is also documented in a log book that will be periodically provided to the Town of Hampden and upon request.
4. Commencement of Investigation. Fiberight staff shall relay the complaint information to the appropriately trained facility response staff for follow-up action. The Town of Hampden will be contacted and given a reasonable opportunity to participate in the odor complaint investigation and response. The methodology, personnel, professionals, and/or equipment utilized to investigate a complaint will be tailored to the type, scope, and nature of the complaint. The MDEP will have regulatory oversight of the complaint investigation techniques and Fiberight's response to a complaint, including any corrective actions taken.
5. Site Visit. If a visit is requested, the appropriate staff member should note the conditions observed during the visit. At a minimum, the following should be noted; time since original complaint was received, wind direction, meteorological conditions, distance from the facility, and odor noted. (see complaint report below). The Town of Hampden will be contacted and given a reasonable opportunity to participate in the site visit.
6. Facility Inspection. In either case where a visit is requested or not requested, facility staff will perform an inspection of the facility to attempt to identify/locate potential sources of odor that may have generated the complaint. Upon completion of the inspection appropriate corrective measures will be taken as required.. The Town of Hampden will be contacted and given a reasonable opportunity to participate in the inspection of the facility.
7. Notice of Site Visit/Inspection & Response. Following the stie visit (if requested) the inspection and response, written notification will be submitted to the Town of Hampden, MRC, and MDEP detailing the source of the odor and the corrective actions taken to address the complaint.

MDEP Written Report. If MDEP determines that the facility created an off-site odor nuisance, Fiberight will submit a written report to the Department detailing the cause of the odor, follow-up actions taken, as well as plans for future treatment, minimization, and control of nuisance odors. This report will be submitted within 30 days.

F.5.3 Future Odor Control Options

Should odors become an issue for the facility, and nuisance odors begin to migrate beyond the property boundary or to off-site occupied buildings, there are numerous options that can be employed at the facility.

1. Regular street sweeping/washing of the access road. During particularly dry periods of time, leakage from haul vehicles could accumulate on the access road and cause odors. An application of water for dust and odor control as well as sweeping could help to mitigate this issue. If regular washing, with water alone, is not sufficient, odor neutralizing agents can be added to the equipment to further reduce odors. As previously stated, odor neutralizing powders and spray will be stored on-site in order to minimize the time frame necessary to address odor issues.
2. Odor neutralizing spray within the building. Should the negative pressure odor control system within the building prove insufficient to control nuisance odors, or require short term maintenance, odor neutralizing spray could be applied to the waste on the tipping floor to reduce odors.
3. Odor neutralizing misting system. An odor neutralizing misting system could be installed along the boundary of the waste handling area, downwind of the operations, to assist in off-site odor control should odors begin to migrate off-site.
4. If the above measures are not sufficient to mitigate nuisance odors at off-site occupied buildings, the Operator will supplement the odor control systems to address the specific odor sources and issues causing nuisance odors.

F.5.4 Documentation Retention and Reporting

All documentation required to be prepared by this plan (e.g., Odor Complaint Response Form, Inspection Report Form, Odor Inspection Form) shall be maintained on-site for five years and copies provided to MRC and MDEP upon request.

G. RECORD KEEPING

Fiberight must make provisions to keep the following records and make them available for MDEP inspection and copying for the duration of the facility operation and a minimum of two years after facility closure:

1. When applicable, as-built engineering drawings of the facility, including a schematic showing the relationship of the various subsystems;
2. Analytical and characterization data results required by these rules or license conditions;
3. An Operation and Maintenance Manual meeting the requirements of this section 4.A; and
4. Copies of periodic and annual reports submitted to the MDEP.

Other records that should be kept so that easy preparation of the Annual Report required to be submitted to the MDEP are discussed in Section I below.

H. PERIODIC REPORTING

Fiberight shall submit periodic reports to the MDEP containing the results of environmental monitoring, including waste characterization and any other information required in accordance with the facility license. During the initial year of operation, results of the odor inspections must be submitted to the MDEP on a weekly basis.

I. ANNUAL REPORT

By February 28 of each year, the facility operator must pay an annual facility reporting fee to the State of Maine, as established by the Department, and submit an Annual Report to the MDEP for review and approval for the previous calendar year. The Annual Report must include a summary of activity at the facility during the past year, including a discussion of any odor problems, and a discussion of any factors, either at the facility or elsewhere, which affected the operation, design, or environmental monitoring program of the facility. The Annual Report must summarize the facility's activities, and at a minimum include the following:

1. Weight and type of wastes received by the facility and the data and results of the waste characterization;
2. Weight and type of product and secondary material produced;
3. Weight and type of secondary material used on-site and destination, and uses for material distributed off-site;
4. Weight and type of waste and secondary material stored on-site as of December 31;
5. Weight and description of residues leaving the facility for disposal, by destination, and the data and results of the waste characterization;
6. A demonstration that the facility meets the state's minimum recycling rate of 50%., through an analysis of the data provided in items 1-5 above, in accordance with *Processing Facilities, 06-096 CMR 409(4)(l)(d) and (e)*;
7. A general summary of the processing operation including problems encountered and follow-up actions, changes to the facility operation, and a summary of odor or other complaints received by the facility, as well as the responses to the complaints, during the previous year;
8. A summary of the results of the odor monitoring inspections, response actions and complaints, if any; and
8. Other alterations to the facility site, not requiring MDEP approval, that occurred during the reporting year. Minor aspects of the facility site proposed to be changed in the current year may be described in the Annual Report. Changes handled in this manner are those that do not require licensing under minor revision or amendment provisions of Chapter 400.

J. FACILITY CLOSURE

J.1 Closure Plan

Fiberight shall submit a Closure Plan to the MDEP a minimum of 90 days prior to the proposed date of the permanent closure of a solid waste processing facility. This must be submitted as a proposed minor revision to the existing facility license. The Plan must include:

- a. An outline of the proposed closing operation;
- b. A schedule for the removal of all stored wastes and secondary materials; and
- c. The intended destination of all stored wastes and secondary materials.

J.2 Closure Performance Standard

The facility must be closed in a manner that minimizes the need for further maintenance; and so that the closed facility will not pollute any waters of the State, contaminate the ambient air, constitute a hazard to health or welfare, or create a nuisance. At a minimum, the Applicant must remove all wastes and secondary materials from the facility; and broom-clean the facility structures and equipment.

APPENDIX A
LOCATION MAP AND SITE PLAN

DRAFT

APPENDIX B
SOLID WASTE LICENSE

DRAFT

APPENDIX C

MAINE SOLID WASTE MANAGEMENT REGULATIONS

DRAFT

APPENDIX D

HAZARDOUS AND SPECIAL WASTE HANDLING AND EXCLUSION PLAN

DRAFT

HAZARDOUS AND SPECIAL WASTE HANDLING AND EXCLUSION PLAN

Facility Safety Officer

The facility Supervisor shall be designated as the “facility Safety Officer.” Annually, the facility Safety Officer shall work with the Hampden Fire Department to provide training to the operation staff on:

- ◆ Detection of hazardous and special waste;
- ◆ Appropriate notification procedures; and
- ◆ Appropriate handling procedures.

Identification/Notification of Unpermitted Wastes

Unpermitted hazardous and special wastes shall not be accepted at the Fiberight facility. To ensure this, employees shall check all waste being deposited at the facility. The type of container and origin of the waste can help identify hazardous wastes and special wastes. Under no circumstances are people allowed to deposit any waste other than those listed in Section D.1 of this Manual.

If an unknown waste is observed by employees, the following list shall be used as guidance to help identify and handle materials of concern. Excluded items are not limited to those specifically listed below.

- ◆ Calcium Hypochlorite: Used for disinfecting pools but is reactive when wet. Can release chlorine gas and cause fire when wetted. Treat as hazardous; prevent wetting or contact with moisture; if wetted, evacuate area. Keep away from petroleum and other organic materials.
- ◆ Asbestos: Friable asbestos insulation which can easily become airborne is of the most concern. However, asbestos can take many forms and can be combined with other materials to sometimes make non-friable asbestos siding, flooring, or other products. If suspected to be or contain friable asbestos, contact the MDEP asbestos abatement program personnel at telephone number 207-287-2651. Avoid inhalation of particles.
- ◆ Bio-Medical Wastes: May be red bag waste from hospitals, laboratories, clinics, nursing homes, and occasionally doctors’ offices. These wastes include blood, body parts, disposable instruments, linens, and other soiled items. Keep people away, follow hazardous waste procedures, including notifying the appropriate responder either a qualified Fire Department or the MDEP. If accidentally contacted, disinfect contact area with 1:3 bleach to water solution.
- ◆ Industrial Chemicals: Generally, liquid in 5 gallon or larger pails or drums of either plastic or steel. Occasionally lined cardboard barrels are used. Also some solids, especially flakes or granular materials, can cause excessive corrosion or be reactive with liquids. Solids may be in any form of container including loose. Avoid skin contact and breathing exposure; treat as hazardous.

- ◆ Laboratory Chemicals: Usually in smaller containers of one pint to one gallon, glass or plastic bottles. Laboratory Chemicals can be severe irritants, highly toxic or explosive. Avoid skin contact and breathing exposure; do not open or jar containers. Treat as hazardous.
- ◆ Sandblast Grit: Generally fine sand or garnet mixed with paint, brick, and/or masonry chips. Avoid breathing; handle as special waste.
- ◆ Waste Oil: Includes used motor oils, hydraulic fluid, or other lubrication oils from individuals, farm operations, and vehicle and heavy equipment repair firms. Avoid skin contact; direct this material to the on-site used oil collection area.

Finding and Reacting to an Unknown Waste

When unknown material is found at the facility, Fiberight shall identify the material to determine whether it is a licensed solid waste, special waste, universal, or hazardous waste. If the identified material is a hazardous waste, Fiberight shall attempt to identify the person who has left, delivered, or attempted to deliver the hazardous waste and notify the MDEP.

- ◆ While keeping a safe distance upwind from the material, the employees may attempt to determine the following, if safe to do so:
 - Look for container or waste labeling.
 - Determine the physical state of the material (solid, liquid, or gas).
 - Estimate container size or amount of waste.
 - Determine the type and condition of the container or packaging.
- ◆ If the material is determined to potentially be hazardous, the employees shall:
 - Evacuate and secure the area of the facility around the material.
 - If safely feasible, determine if there is any release of the material to the soil, water, or air.
 - If safely feasible, determine if any release found has been confined or is ongoing.
 - Undertake the appropriate notification procedure below.

Notification

When hazardous waste or suspected hazardous waste is found left at the facility, employees shall:

- ◆ Notify the Hampden Fire Department at 862-4586
- ◆ Notify the MDEP anytime at 1-800-482-0777 or the Maine State Police at 1-800-452-4664.

When unpermitted special waste is found left at the facility, Fiberight shall notify a Solid Waste Staff person at the MDEP regional office between 8:00 a.m. to 5:00 p.m., Monday through Friday. Once approved by MDEP, Fiberight shall authorize removal of any unpermitted waste.

If Fiberight cannot identify the material; notify the Hampden Fire Chief and the MDEP at the number listed above for assistance in identification. If sampling and further detection of hazardous or special waste is required, a qualified hazardous waste handling firm or solid waste contractor must be used, as appropriate.

Clean-up/Decontamination

Only trained personnel shall handle hazardous wastes. Such training shall follow the guidelines of 29 CFR Part 1910.120. Unpermitted special wastes shall be removed from the area where found and transported to a special waste disposal facility licensed to accept that special waste within 60 days. Because hazardous wastes require special training to handle, and to minimize the area of potential, it is recommended that any hazardous waste found at the solid waste facility be removed by qualified personnel from the site directly.

Emergency Information

Fiberight shall have the following telephone numbers available at the facility for telephone notifications:

MDEP-Bureau of Remediation & Waste Management, Bangor Office	941-4570	Normal business hours
MDEP-Emergency Spill Hot Line	1-800-482-0777	After hours or weekends
Hampden Fire Department	862-4586	
Hampden Police Department	862-4000	
Ambulance	911	
Maine State Police	1-800-452-4664	For reporting hazardous waste
Maine Poison Center	1-800-442-6305	

The closest location for emergency medical care is Eastern Maine Medical Center (EMMC) in Bangor.

Directions to EMMC

1. North on Interstate 95.
2. Take Hogan Road exit in Bangor and turn right onto Hogan Road.
3. Follow Hogan Road approximately 1 mile and merge onto State Street.
4. Continue following State Street for approximately 8/10 mile.
5. Turn Left into EMMC Emergency Room.

Written Reports

A written report shall be filed with the MDEP-Bureau of Remediation & Waste Management within 15 days of any incident involving hazardous waste or material.

The report must indicate:

- ◆ Date and time of incident;
- ◆ Location;
- ◆ Material lost or spilled;
- ◆ Amount lost or spilled;

- ◆ Amount recovered;
- ◆ Cause of the incident;
- ◆ Corrective action taken;
- ◆ Clean-up method used;
- ◆ Disposition of recovered materials;
- ◆ List of agencies notified; and
- ◆ Time agency responded on-site.

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APPENDIX E

HAZARDOUS AND SPECIAL WASTE EXCLUSION REPORTS

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APPENDIX F
DAILY INSPECTION FORM

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ODOR INSPECTION REPORT FORM

Date: _____

Inspector Name: _____

Weather Conditions: _____

Building Condition

Obvious damage to overhead doors? (y/n)

Odors noted when door is closed? (y/n)

Odors noted when door is open? (y/n)

Visual evidence of negative air at the door? (y/n)

Obvious damage to building walls? (y/n)

Yard and Access Road Condition

Any waste present around the facility? (y/n)

Any waste or liquid spillage on the access road? (y/n)

Any odor noted away from the building? (y/n)

Any odor noted around the stormwater management structures? (y/n)

Follow-up Notes

Please list any other conditions noted during the inspection and the steps taken to correct the issue:

APPENDIX G

ODOR COMPLAINT RESPONSE FORM

DRAFT

ODOR COMPLAINT REPORT

Top portion of this form is to be filled out at the time of the complaint.

Date: _____

Time: _____

Name of caller: _____

Contact information for the caller:

Location of complaint:

Does the caller wish to have the odor verified? (y/n)

Bottom portion of this form is to be filled out by the responder.

Was a visit to the caller conducted? (y/n)

Distance of the complaint from the facility: _____

Was an odor noted? (y/n)

Was the caller's location downwind of the facility? (y/n)

Is there anything unusual happening at the facility? (Shutdown, maintenance, etc.?) (y/n)

Any unusually odorous waste loads delivered? (y/n)

Was a follow-up inspection conducted at the facility? (y/n)

List any items identified during the inspection that require attention.

What steps were taken to correct any issues identified?

APPENDIX H
OPERATING RECORDS

DRAFT

APPENDIX I
SOURCES OR ASSISTANCE

DRAFT

SOURCES OR ASSISTANCE

Consultant:

CES, Inc.
Denis St. Peter, P.E.
465 South Main Street
Brewer, Maine 04412
Office: 989-4824

Owners:

Fiberight, LLC
853 Industrial Park Drive
Lawrence, VA 23868
Office: 410-340-9387

Municipal Review Committee, Inc.
395 State Street
Ellsworth, ME 04605
Office: 207-664-1700

Police:

Hampden Police Department
106 Western Avenue
Emergency Tel: 911
Non-Emergency Tel: 862-4000

Fire:

Hampden Fire Department
106 Western Avenue
Tel: 862-4586

Asbestos Handling & Disposal:

Asbestos Removal, Inc.
739 Odlin Road
Bangor, ME 04401
Tel: 947-4035

Hazardous Waste:

Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017
Office: 287-7800

Solid Waste Facilities Regulation:

Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
106 Hogan Road
Bangor, ME 04401
Attn: Karen Knuuti
Office: 941-4570

TRAFFIC IMPACT STUDY ADDENDUM 2 PROPOSED FIBERIGHT PROCESSING FACILITY

Based on comments that we received May 17 from Diane Morabito at Maine Traffic Resources, we would like to add information and respond to these comments. The following information is corrected or added based on her memo dated May 17, 2016.

STAMPED AND SIGNED COPY

Ms. Morabito noted that the original Traffic Study and Addendum was not stamped and signed. This was our error and a stamped and signed copy of the Traffic Study incorporating all Addendums will be submitted for the record. Due to time constraints this will not be available on the May 19 deadline but will be submitted before the scheduled Planning Board Meeting on May 25, 2016.

OTHER DEVELOPMENT VOLUMES

We have confirmed with the Town of Hampden and MaineDOT that no developments have been approved or are seeking approval in the area of the proposed facility.

CAPACITY ANALYSIS OF THE ENTRANCE ROAD

The original full build condition was analyzed with a 75-foot dedicated right turn lane. The reasoning behind this was the requirement from MaineDOT to strengthen the shoulder along the Coldbrook Road to allow trucks to use the shoulder as a right turn lane. The Applicant is not required to stripe the right turn lane so the analysis was redone without the dedicated right turn lane. The results of the analysis are summarized below and they are identical to the previous analysis with the dedicated right turn lane. The low volume of right turning traffic during the peak hour has minimal impact to the LOS of Coldbrook Road with or without this auxiliary lane.

Movement	AM Future No Build	AM Future Full Build	PM Future No Build	PM Future Full Build
NB Coldbrook	A (0.3)	A (0.0.3)	A (0.1)	A (0.1)
SB Coldbrook	A (0.0)	A (1.6)	A (0.0)	A (1.0)
HO Bouchard	B (11.8)	B (14.6)	B (13.5)	C (16.2)
Access Road	NA	B(13.1)	NA	C (16.3)

CRASH DATA FOR THE INTERSECTION OF WESTERN AVE AND US ROUTE 202

Ms. Morabita recommended a more thorough investigation of the crash data and possibly the signal timing at the intersection of Western Avenue and US Route 202 be conducted because large numbers of rear end collisions is often the result of improper signal timing and not driver inattention as we asserted. A thorough review of the crash reports was conducted and is summarized below:

Crash 1 #2013-3268 Rear End Collision with a stopped vehicle on US Route 202
Reason Cited – Following too closely

Crash 2	#2013-12569 Rear End Collision on US Route 202 Reason Cited – Driver Error with clutch
Crash 3	#2013-33075 Rear End Collision on US Route 202 Reason Cited – Following too closely
Crash 4	#2014-15294 Rear End Collision on US Route 202 Reason Cited – Distracted Driver w/electronic device (summons)
Crash 5	#2014-15666 Rear End Collision with a stopped vehicle on US Route 202 Reason Cited – Following too closely
Crash 6	#2014-27957 Rear End Collision with a stopped vehicle on US Route 202 Reason Cited – Following too closely
Crash 7	#2014-29449 Rear End Collision on US Route 202 Reason Cited – Distracted Driver
Crash 8	#2015-6571 Rear End Collision with a stopped vehicle on US Route 202 Reason Cited – None (Late Report)
Crash 9	#2015-8593 Rear End Collision on US Route 202 Reason – Right turn vehicle had to stop for oncoming traffic and was rear ended
Crash 10	#2015-12022 Rear End Collision on US Route 202 Reason Cited – Distracted Driver
Crash 11	#2013-5080 Rear End Collision with a stopped vehicle on Western Ave (snow) Reason Cited – Driving too fast for conditions
Crash 12	#2013-36003 Rear End Collision on Western Ave (snow) Reason Cited – Following too closely
Crash 13	#2014-2621 Rear End Collision with a stopped vehicle on Western Ave Reason Cited – Distracted Driver
Crash 14	#2014-5171 Rear End Collision with a stopped vehicle on Western Ave Reason Cited – None (Left the Scene)
Crash 15	#2014-17474 Rear End Collision with a stopped vehicle on Western Ave Reason Cited – Operating in a careless, negligent, or aggressive manner
Crash 16	#2014-24389 Rear End Collision with a stopped vehicle on Western Ave Reason Cited – Driver thought light turned green
Crash 17	#2014-25845 Rear End Collision on Western Ave Reason Cited – Distracted Driver
Crash 18	#2015-40311 Rear End Collision with a stopped vehicle on Western Ave Reason Cited – Driver thought traffic had started moving

From the compilation above it can be seen that clearly nine of the crashes are due in large part to some form of driver error (crashes #2, 4, 7, 10, 13, 15, 16, 17, and 18) and two crashes can in some way be attributed to road conditions (crashes #11 and 12). Removing these obvious driver error and weather related crashes from the total leaves seven crashes that may or may not be attributed to deficiencies in signal timing.

It is our opinion that seven rear end type crashes at a signalized intersection that accommodates this volume of traffic is typical of many similar signalized intersections. Rear end type crashes are typically the trade-off you make for the increased capacity of the signal.

DELIVERY TRUCKS USING INTERSECTION OF ROUTE 1A AND COLDBROOK ROAD

The intersection of Route 1A and Coldbrook Road poses a concern based on limited sight distance. We do not believe that any trucks from across the Penobscot River delivering MSW to the facility will use this intersection due to the presence of the Route 202 connector off from I-395. A search of Google Maps shows the preferred route being either I-395 to Route 202 to Coldbrook Road or I-395 to I-95 to Exit 180 and the Coldbrook Road. The mileage and travel time for both routes is given as 7.2 miles and 8 minutes. We believe that Route 202 will be used because the mileage is the same as the I-95 preferred route, travel time is the same, the 202 exit is located before I-95, trucks will not have to use the I-95 cloverleaf on-ramp, and all turns to the facility will be right turns as opposed to left turns.

Route 1A to Coldbrook Road is not a preferred route because it is longer (7.4 miles), it exits onto a busy road therefore having a longer transit time (12 minutes), and trucks will not want to deal with the traffic issues of Route 1A and its many curb cuts vs. Route 202 which is a control of access roadway. Again we do not project any truck traffic to voluntarily use 1A as a route to this facility with the other options available. Also, the applicants will be providing a preferred haul routes map which does not include this intersection to all trucks delivering to the facility.

PEAK HOUR TRAFFIC

The traffic volumes section of this the Traffic Impact Study explained the various shifts during operation of the Proposed MSW processing facility and the numbers of employees each shift contained. Employees will create two distinct peak hour traffic movements at the proposed facility. The AM Peak hour traffic movement will occur between 6:30 AM to 7:30 AM and will consist of 38 employees entering the facility and 4 employees leaving the facility. The second peak hour traffic movement will occur between 2:30 PM and 3:30 PM and will consist of 16 employees entering the facility and 34 employees leaving the facility.

Production facilities such as the proposed facility work in set shifts much the same way paper mills do. These shifts are set and are not affected by the needs of the public as a call center or retail establishment would be. This facility will accept incoming MSW from 6:00 AM to 6:00 PM so it is our assertion that if any shift changes do occur it will be on the MSW side of the plant and shifts for these employees will move earlier reducing the peak traffic movements to the facility and also moving them farther away from the peak hour traffic of the adjacent street.

The MSW side of the plant is the most heavily staffed area with 21 day shift employees and 16 evening employees. This staffing accounts for over half of the plant staffing on any given shift and any change to accommodate the 6:00 AM receiving of MSW will cut the peak hour traffic to the facility by roughly half (since these employees will arrive one hour earlier than the rest of the

staffing) as well as move the traffic associated with these employees to a less busy time of day on the adjacent street.

We believe that our analysis has accommodated the worst case scenario in terms of traffic movement to the proposed plant by bringing all employees to the plant during a 7:00 AM and 3:00 PM shift change. These shifts are known and highly unlikely to change based on its similarity to other production type facilities. **UPDATE: The MSW employee shift will start at 6:00 AM rather than 7:00 AM, so the peak hour traffic will be reduced as described above.**

TRAFFIC SIGNAL ANALYSIS FOR THE I-95 SOUTHBOUND OFFRAMP

Capacity analyses were conducted for intersections where the peak lane movements were greater than 25 PCE for left turns or a combination of left turns and through movements. This criterion was met at the proposed access road to the facility and at the northbound and southbound ramps at the intersection with I-95. The main entrance road and the northbound ramps were found to operate at an acceptable LOS.

The southbound off-ramp was found to experience a LOS F during both the future no-build and full build conditions during the PM peak of the facility. Ms. Morabito suggested that a signal warrant analysis be performed at this intersection to determine whether a traffic signal is needed. We have requested information from MaineDOT pertaining to the analysis of this intersection for the recent detour during the Webster Avenue bridge replacement. At the time of this Addendum we have not received this information and have not had time to do the full counts necessary to do this analysis.

It should be noted that this intersection is located in the Town of Hermon. We have spoken with Bruce Mattson (Region Traffic Engineer in Region 4) concerning the deficiencies at this intersection and are working with him concerning possible striping solutions to help alleviate the congestion in general. These striping solutions will be coordinated with MaineDOT. Since this intersection is located in Hermon, we believe that this should be addressed through MaineDOT rather than a Town of Hampden Planning Board review.

SUMMARY

Based on the above information and previous information provided, the project has been designed to provide adequate provisions for safe and uncongested traffic movement into, out of, and within the proposed facility for the estimated peak day traffic volume of 348 vehicle trips/day.

The estimated peak daily traffic volume will be spread out throughout the entire day and will not create a congestion issue during either of the typical AM or PM peak hours on Coldbrook Road or the closest intersections that does not already exist. The left turn out of the I-95 SB off-ramp presently operates at a computed LOS D for existing, and a LOS E for the future no-build, and future full-build AM conditions. The left turn out of the I-95 SB off-ramp presently operates at a computed LOS E for existing, and a LOS F for the future no-build, and future full-build PM conditions. We believe that these Levels of Service are skewed because of a peak 15 minute period and that while there are times where there will be a control delay of 1 minute or slightly more the situation clears itself relatively quickly. We are working with MaineDOT to provide a striping solution to the SB off-ramp which will help alleviate the congestion.

The I-95 NB ramps show ample capacity to handle the increased traffic generated by the proposed facility. No changes will be required to these intersections.

The Coldbrook Road and its intersections with US Route 202 and Interstate I-95 are designed for the largest trucks expected at the proposed facility and the crash data supports that there are no safety issues along this corridor.

There is no indication that any vehicles connected with this facility will use the intersection of US Route 1A and Coldbrook Road. All indications based on Google Earth and GPS data indicate that all of the traffic from the north of the facility will use I-395 to US Route 202 to access the facility.

The entrance onto Coldbrook Road and the interior road network have been designed with adequate sight distance and provide for safe traffic movements. The proposed entrance with Coldbrook Road will provide ample capacity to handle the traffic generated by the proposed facility.


















The applicants have agreed to provide preferred haul route maps to all waste haulers to the facility in an effort to keep trucks out of the developed areas of Hampden, specifically, the intersection of Route 1A and Western Avenue.



HCM Unsignalized Intersection Capacity Analysis

3: Coldbrook Road & HO Bouchard


















AM Peak Hour
5/18/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	240	25	23	206	16	5	0	9	3	0	3
Peak Hour Factor	0.95	0.82	0.50	0.50	0.77	0.95	0.50	0.92	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	11	293	50	46	268	17	10	0	18	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	284			343			685	690	293	700	732	276
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	284			343			685	690	293	700	732	276
tC, single (s)	4.1			4.4			7.7	6.5	6.2	7.9	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.5			4.0	4.0	3.3	4.2	4.0	3.3
p0 queue free %	99			96			96	100	98	99	100	100
cM capacity (veh/h)	1278			1076			282	350	747	255	331	763
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	303	50	330	28	7							
Volume Left	11	0	46	10	3							
Volume Right	0	50	17	18	3							
cSH	1278	1700	1076	470	382							
Volume to Capacity	0.01	0.03	0.04	0.06	0.02							
Queue Length 95th (ft)	1	0	3	5	1							
Control Delay (s)	0.3	0.0	1.6	13.1	14.6							
Lane LOS	A		A	B	B							
Approach Delay (s)	0.3		1.6	13.1	14.6							
Approach LOS				B	B							
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			39.6%	ICU Level of Service				A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

3: Coldbrook Road & HO Bouchard

PM Peak Hour
5/18/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	281	13	14	290	7	23	0	22	10	0	4
Peak Hour Factor	0.95	0.80	0.50	0.50	0.89	0.95	0.50	0.92	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	2	351	26	28	326	7	46	0	44	11	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	333			377			745	745	351	785	767	330
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	333			377			745	745	351	785	767	330
tC, single (s)	4.1			4.7			7.2	6.5	6.5	7.1	6.5	6.5
tC, 2 stage (s)												
tF (s)	2.2			2.7			3.6	4.0	3.6	3.5	4.0	3.5
p0 queue free %	100			97			85	100	93	96	100	99
cM capacity (veh/h)	1226			935			307	332	624	281	322	662
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	353	26	361	90	15							
Volume Left	2	0	28	46	11							
Volume Right	0	26	7	44	4							
cSH	1226	1700	935	408	337							
Volume to Capacity	0.00	0.02	0.03	0.22	0.05							
Queue Length 95th (ft)	0	0	2	21	4							
Control Delay (s)	0.1	0.0	1.0	16.3	16.2							
Lane LOS	A		A	C	C							
Approach Delay (s)	0.1		1.0	16.3	16.2							
Approach LOS				C	C							
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			37.1%	ICU Level of Service					A			
Analysis Period (min)			15									

MEMO

To: Hampden Planning Board

From: Amanda Wade, P.E.

Re: EcoMaine Odor Complaint Comparison

Date: May 18, 2016

On Monday, May 16, 2016, I spoke with Randy McMullin of the Maine Department of Environmental Protection (MDEP) in an attempt to collect data concerning complaints received by the MDEP relating to odors at the EcoMaine Waste-to-Energy (WTE) facility in Portland. Randy is the MDEP's Project Manager for EcoMaine and works out of the MDEP's Southern Maine Regional Office in Portland. According to Randy, he has not received any odor complaints related to the operation of the WTE facility. He did mention that he will occasionally get complaints of odors from the landfill which is 2 miles from the WTE facility; however, during periods of time that MSW is stored for future utilization at the WTE facility. EcoMaine will temporarily store waste at the landfill during the summer months, when waste is more readily available, for use during the winter months when acceptance rates are lower. Based on my discussions with Randy, EcoMaine has the capacity to accept 550 tons of waste per day. I was able to verify this with information provided on the EcoMaine website that shows that they accepted an average of approximately 170,000 tons of waste per year from 2006-2012 with a maximum acceptance of 187,525 tons from 2009-2010. Randy also stated that the tipping floor at the WTE facility has the capacity to handle 2-3 days of waste.

It is my understanding that the majority of odor concerns expressed at the Planning Board hearings around the siting of the Fiberright facility deal mainly with the delivery and disposition of the wastes on the tipping floor. Given that the Fiberright facility is being designed to handle waste at a comparable acceptance rate and the tipping floor capacity is sized similarly, EcoMaine may be an appropriate facility to utilize in determining potential odors. Given that no odor complaints have been received at the MDEP due to activities at the EcoMaine WTE facility, and the distances from the proposed Fiberright facility to the nearest residence or business is considerably greater than those for the EcoMaine facility, it is reasonable to conclude that with proper controls and operation there is limited risk of odor migration to neighboring buildings from the proposed Fiberright facility. I have presented the approximate distances between the facilities and their neighbors below.

JN: 10973.002



Ecomaine approximate distance to:

- 1,900' to nearest residence
- 1,800' to Bright Horizons Day Care Center
- 2,200' to Unum office building
- 2,600' to Spring Harbor Hospital

Fiberight approximate distance to:

- 3,500' to nearest residence
- 4,100' to nearest Hampden business
- 2,500' to nearest Bangor/Hermon business

Along with the above information, Fiberight has proposed numerous odor management controls that will be implemented at the facility along with an Odor Complaint Response Plan that will assist them in evaluating any potential odor sources during operation in order to readily address any issues that may arise.

If you require additional information, please contact us.

A handwritten signature in blue ink that reads "Amanda Skide". The signature is written in a cursive, flowing style.

GENERAL PROJECT AREA OVERVIEW

The Site is located on Coldbrook Road in Hampden, Maine. The Site is an approximately 90-acre undeveloped parcel, which is accessed from Coldbrook Road via a gravel access road.

The Site is characterized by undeveloped forestland and old agricultural fields. A selective harvest was performed on the Site 10 to 15 years ago; indications of this activity (in particular, haul/skid roads) were observed throughout the Site. Indications of historical agricultural use were also observed on the Site, namely stone walls and foundations; and land which appeared to be drained. The Site is accessed via a gravel road from Coldbrook Road. The Bangor Gas pipeline corridor bisects the Site north to south.

The Site is dominated by a large wetland and stream complex, with areas of upland in the northeast portion of the Site. Uplands on the Site are dominated by red maple (*Acer rubrum*), balsam fir (*Abies balsamea*), white pine (*Pinus strobus*), white ash (*Fraxinus alba*), and quaking aspen (*Populus tremuloides*). Red maple and balsam fir dominate in the forested wetlands on the Site, with smaller areas of scrub shrub alder wetlands along the stream corridors. Topography within the Site consists of flat to gently sloping upland and wetland areas which slope to the southwest. The wetland areas are drained by two streams, which converge and flow southerly to Souadabscook Stream.

MRC/FIBERIGHT TRUCK ROUTE POLICY

This Preferred Truck Route Policy directs trucks to utilize certain identified state and federal highways as depicted in the Identified Haul Routes Plan to avoid the intersection of Route 1A and Western Avenue and secondary streets and roads of Hampden. This Truck Route Policy also directs all trucks to comply with all applicable solid waste transport laws, including MaineDOT solid waste containment regulations. Failure to adhere to this policy will result in a warning to transporters and/or report to the MaineDOT or other authority.

This Preferred Truck Route Policy and corresponding Identified Haul Routes Plan will be provided to all contractors that transport solid waste to the Fiberight facility, and be available at the facility itself and provided to drivers. In addition, municipalities or other entities that send solid waste to the Fiberight facility will be provided with this Preferred Truck Route Policy and associated Identified Haul Routes Plan, with a written request to require all contractors hauling for such municipalities or entities to follow this Preferred Truck Route Policy and Identified Haul Routes Plan. The purpose of this Policy is to a) ensure trucks comply with all applicable transport laws, including but not limited to MDOT solid waste containment regulations; and b) travel on identified haul routes that avoid developed areas of the Town of Hampden.

BACT ANALYSIS

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FIGURES

Figure 1 – General Arrangement Process Diagram

Figure 2 – Boiler Configuration

Figure 3 – Scrubber Configuration and Specifications

APPENDIX

Appendix 1 – NHSM Non-Waste Application

SECTION 1.0 | INTRODUCTION

Chapter 115 of the Maine Department of Environmental Protection (MDEP) regulations requires a new or modified facility to include, with the Air Emission License Application, a demonstration that the emission source in question will receive Best Available Control Technology (BACT) to control emissions from applicable sources. BACT is defined by MDEP as a process where an emission limitation based on the maximum degree of reduction for each pollutant emitted from, or which results from, the new or modified emissions unit which MDEP reviews on a case by case basis taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such emissions unit through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of each pollutant. In no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Part 60 and 61 or any applicable emission standard established by MDEP. If MDEP determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof may be prescribed instead to satisfy the requirement for the application of BACT. Such a standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results.

The Criteria Pollutants that will be emitted from the boilers and control devices at the proposed facility are particulate matter (PM_{total}/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs) including metals. These pollutants have been evaluated in this analysis.

SECTION 2.0 | PURPOSE

The purpose of this document is to provide an analysis of control technologies by using a “top-down” approach to identify the best technology solution, allowing for environmental, energy, and economic considerations. This analysis has been performed for the two boilers associated with the facility’s municipal solid waste processing operations anticipated to run approximately 7,920 hours per year.

Fiberight, LLC (Fiberight) and the Municipal Review Committee (MRC) have followed the “top-down” methodology for determining BACT for the operation of the close-coupled gasifier boilers. As described in EPA’s draft New Source Review Workshop Manual (October 1990), the five steps of a top-down BACT analysis are:

1. Identify all available control technologies applicable to the proposed source.
2. Eliminate technically infeasible options.
3. Rank remaining control technologies by control effectiveness.

4. Evaluate the most effective controls and document results, including a case-by-case consideration of energy, environmental, and economic impacts.
5. Select BACT.

Steps 1 through 5 have been completed for particulate matter (PM), volatile organic compounds (VOC), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), and heavy metals emissions associated with the boiler operations at the Facility.

SECTION 3.0 | APPLICABILITY

Chapter 115 of MDEP regulations requires a new or modified facility to include with the Air Emission License Application, a demonstration that the emission source in question will receive BACT to control emissions. Officials at MDEP's Bureau of Air Quality have been consulted regarding this project and have indicated that a BACT analysis is required.

SECTION 4.0 | FACILITY DESCRIPTION

The proposed Fiberight facility will consist of a 144,000 square foot building constructed on a 90+/- acre undeveloped parcel located on the east side of Coldbrook Road in Hampden, Maine (see Site Location Map attached to the Application). Proposed operations for the facility will include receipt and processing of municipal solid waste (MSW). Received MSW will initially be sorted to remove oversized items (i.e., masonry, furniture, domestic appliances, carpets, etc.) that have little to no recycling value and would occupy volume further along the process. MSW will then be conveyed to the Primary Sort Trommel where the oversized material is separated from MSW which will be screened and processed. The portion of the MSW not screened out by the Primary Sort Trommel will continue forward to Secondary Screening where the "fines" (food waste, glass, some paper, and plastic) will be separated from the "overs" (plastic containers, cardboard, and larger papers). The overs will be fed forward to the pulper feed tipping floor, while the unders are conveyed to the Fines Processing System. From that stage forward, the various portions of the waste stream will be sorted for recyclables including: aluminum, ferrous and other metals, plastic containers, film plastics, and glass and processed to create bio-methane and biomass fuel. Sugars may be used for conversion into biofuels or for production of bio-methane. Bio-methane will be piped into the Bangor Gas natural gas pipeline located adjacent and to the east of the facility. Sugars, or some portion thereof, may be sold in the future as feedstock for manufacturing process facilities. The solids remaining following the hydrolysis process are transferred to the boilers for fuel. Fiberight anticipates approximately 80 percent of all incoming waste to the facility will be converted into renewable fuels and recyclables which will be sold on the commodities market and the remaining 20 percent will be oversized items, process residues, glass, and grit to be disposed off-site at a secure landfill. The general site and process configuration is presented in **Attachment A** of the license application.

Fiberight has submitted a Non-waste Determination Application for Non-Hazardous Secondary Material (NHSM) to the United States Environmental Protection Agency (EPA) in reference to the Post-Hydrolysis Solids (PHS) fuel. The application was submitted in accordance with 40 CFR Section 241.3(c) to demonstrate the PHS fuel meets the legitimacy criteria and is not a solid waste. Based on the self-determination that the fuel is a non-waste NHSM, Fiberight does not anticipate operating under the CISWI regulations. The NHSM non-waste application and subsequent EPA correspondence is included in this BACT analysis as **Appendix 1**.

Two close-coupled gasifier/boilers and turbines will be used to meet the heat and power needs of the facility. The boilers will be used to produce steam for process and building heat and for power generation by steam turbines. The boilers will be supplied by Hurst Boilers, Inc. The boiler fuel will consist of primarily PHS generated during processing of the MSW. Each boiler is rated for a heat input of 48.86 mmBtu/hr. Each boiler will fire approximately 5.62 tons per hour (tph) PHS at 42.5% moisture. The boiler system is equipped with an integral gasifier. The system is equipped with a fuel feed that introduces the fuel to the gasifier and is exposed to heated under-fire air. The gas containing the combustible organics is generated in an oxygen deficient environment that allows combustible organics to be released from the fuel without combustion occurring. The released gases are conveyed to the combustion area of the unit which is in close proximity to the boiler tubes. Over fire air is introduced to the gases with sufficient oxygen to cause combustion to occur. The combustion releases heat that is transferred to the boiler tubes. This system is different from a typical gasification unit as the released combustible gases remain in a closed system rather than being transferred to a separate boiler unit for combustion. Natural gas or bio-methane will be used at startup of the units. A schematic of the close-coupled gasifier boiler is attached as **Figure 1**. A summary of expected emissions is included in **Attachment B** of the license application.

The receiving, pulping, and materials recovery facility (MRF) portion will be maintained under negative pressure by two fans rated at approximately 50,000 ACFM. The fans will draw ambient air from the processing area where the exhaust from each fan will be treated by one of two VOC/odor scrubber trains. The scrubber train will consist of one Duall Model F105-202s Cross Flow scrubber which will precede a Duall Model PT510-132 Packed Tower Scrubber. The scrubber's primary purpose will be to treat the fan exhaust and prevent odor from entering the atmosphere, but will also collect nuisance dust in the ambient air stream. The scrubbers are the odor and VOC emission control for the receiving area and the processing area prior to the wash stage. A schematic of the scrubbers system is attached as **Figure 3**. A summary of expected emissions is included in **Attachment B** of the license application.

Tail gas generated during the generation and treatment of biogas for sales and distribution will be thermally treated. The anaerobic digestion plant will generate approximately 1,200 standard cubic feet per minute (scfm) of bio-gas. This feed gas will be approximately 70% methane (CH₄) and contain 500 ppm hydrogen sulfide (H₂S). The feed gas is piped to the Pressure Swing Absorption (PSA) that is used to condition the bio-methane to Bangor Gas' specifications prior to introduction into the pipeline. During normal operations, the tail gas generated during gas clean-up will be piped to a John Zink ZBRID system for Low Btu Gases. Fiberight

anticipates a maximum of 386 scfm of tail gas will be generated from feed gas treatment. The tail gases will consist of approximately 11% CH₄ and contain 1,000 ppm H₂S. In order to maintain combustion of the tail gas, additional Btu's will be added by introducing feed gas as supplemental fuel in the ZBRID unit.

During process upset conditions, feed gas will be thermally oxidized in an enclosed flare. Process upsets may include inadequate gas quality or downtime of the PSA. The facility's proposed flare is expected to operate less than 36 days per year.

The enclosed flare and ZBRID will emit CO, NO_x, SO₂, PM, VOCs, and HAPs.

The flare/ZBRID system is the emission control device for the PSA gas clean-up and during biogas generation process upset conditions. The flare is designed with sufficient capacity to combust 100% of the potential maximum biogas generation of 72,000 SCFH. A summary of expected emissions is included in **Attachment B** of the license application.

SECTION 5.0 | ANNUAL EMISSION ESTIMATES

Emissions from the Fiberight processing facility are primarily the result of the two boilers. The boilers generate CO, NO_x, SO₂, PM, VOCs, and HAPs. The Maximum Potential to Emit (PTE) estimates have been calculated using information provided by Fiberight, assuming the facility will be actively processing waste 330 days per year or 7,920 hours per year. The PTE calculations and the boiler operational parameters spec sheet are attached in **Appendix B** of the license application.

**TABLE 1-1
FIBERIGHT, LLC
MAXIMUM POTENTIAL TO EMIT**

Criteria Pollutants (Ton/Year)							
	Flare	Thermal Oxidizer Hybrid	Boiler #1	Boiler #2	Scrubber #1	Scrubber #2	Total
Carbon Monoxide (CO)	6.91	2.90	44.78	44.78			99.4
Oxides of Nitrogen (NO _x)	1.52	1.45	20.36	20.36			43.7
Sulfur Dioxide (SO ₂)	2.90	4.78	5.08	5.08			17.8
Particulate Matter (PM)	0.54	1.55	6.10	6.10			14.3
Particulate Matter < 10 µm (PM ₁₀)	0.54	1.55	4.48	4.48			11.0
Particulate Matter < 2.5 µm (PM _{2.5})	0.54	1.55	4.07	4.07			10.2
Volatile Organic Compounds	0.17	0.50	2.65	2.65	2.89	2.89	11.7
Ammonia	0.10	0.29	0.00	0.00			0.4
HAPS	0.06	0.18	3.29	3.29	0.15	0.15	7.1

SECTION 6.0 | IDENTIFICATION OF CONTROL ALTERNATIVES

Proposed control measures are primarily directed at limiting NO_x, VOC, and PM emissions as these constituents are the pollutants of concern associated with these types of operational units.

6.1 Nitrogen Oxides (NO_x)

The production of NO_x in a combustion system is primarily the result of nitrogen present in the fuel or it is generated due to high operation temperature (thermal NO_x) during combustion. The manufacturer of the drying system assumed nitrogen content of 0.45% in the fuel for their emissions estimates. Thermal NO_x is typically formed at a temperatures greater than 2,370°F and is not expected to be a significant contributor to the overall NO_x emissions from this project.

The following are available NO_x control mechanisms:

Combustion Controls: It may be possible to set operational parameters (excess air, recycled air, burner inlet temp, etc.) to minimize NO_x emissions from the unit. In addition, wood fuel is inherently low in bound nitrogen. There is little to no financial impact from using combustion controls and no additional environmental impacts. This is a technically feasible method for reduction of NO_x.

Selective Catalytic Reduction (SCR): SCR is an add-on NO_x control device placed in the exhaust stream following the boiler and involves injecting ammonia (NH₃) or urea into the flue gas in the presence of a catalyst. The NH₃/urea reacts with NO_x in the presence of a catalyst to form water and nitrogen. The presence of condensable organics and/or high concentrations of particulates may have a masking effect on the catalyst surface causing a reduction or cessation of catalyst activity. The SCR also functions better on systems with steady operational loads. Load fluctuations can cause variations in exhaust temperature and NO_x concentration which can create problems with the effectiveness of the SCR system. SCR systems will also require reheating of the exhaust stream. The gas exiting the boiler system is anticipated to be approximately 275°F. The gas will need to be reheated to between 400°F and 800°F to effectively control NO_x by SCR. This will require additional combustion which will increase both operational cost and emissions. A typical SCR system will provide control between 70% and 90%. SCR systems are typically found in boilers exceeding 100mmBtu/hr heat input. Due to lack of space for placement of a catalyst and insufficient boiler size to effectively operate SCR, this option is technically infeasible.

Selective Non-Catalytic Reduction (SNCR): SNCR relies on the injection of ammonia or urea into the flue gas but unlike SCR, does not use a catalyst. The injection site and temperature affect the control efficiency of this system. The reagent must be injected at a point in the system that operates at an optimum temperature between 1600°F and 2100°F, and provides sufficient residence time for the injected ammonia to react with the NO_x. The Hurst Boiler system is designed with an injection point following the afterburner in order to allow for SNCR. SNCR application has proven effective in NO_x reduction in

biomass boilers of similar size. Cost of the SNCR is an operating expense that will be driven by the variation of NO_x reduction requirements and reagent use. Through operational controls, the system can be optimized to reduce operation cost associated with an SNCR. Hurst provided a controlled emission rate estimate of 0.10 mmBtu/hr. This system is technically feasible.

Proposed NO_x BACT

Fiberight is proposing to utilize SNCR for both boilers and will represent BACT for NO_x emissions. Use of this control system will allow the facility to attain emission levels below the Minor Source Threshold of 100 tons per year.

6.2 Particulate Matter (PM):

Particulate Emissions will be generated by the boilers from combustion of shredded wood fines and post hydrolysis solids (PHS). The raw material feed rate and combustion of residues will be the primary contributor to PM emissions from the facility. The following is a discussion of the available PM control devices:

Cyclone/Multiclone: A cyclone or multiclone is a dry mechanical collector utilizing centrifugal and inertial forces for particulate/dust collection. Cyclones use the velocity differential across the cyclone to separate particles of various sizes. A multiclone uses several smaller diameter cyclones to improve collection efficiency for smaller particles. Cyclone collectors may be used in series with each other, as a pre-filtration system in front of higher efficiency systems, or for product separation and reclamation.

Cyclones are simple and inexpensive to operate and, dependent on design criteria, can provide control efficiencies adequate to meet certain emission goals. Typically, cyclones provide a reduced efficiency as particulate size decreases. Correctly designed cyclones can potentially provide control efficiency up to 95% on PM <10µm but efficiency reduces for particles below PM10.

Fabric Filters/Baghouses: Fabric filters in various configurations are capable of control efficiencies exceeding 99% for particulate matter varying in aerodynamic diameter. In the application of the boilers proposed for the Fiberight facility, the relatively low moisture content of the emissions (approximately 13%) would not be expected to result in condensable particulates and subsequent overloading of associated fabric filters. Operation of these units, when compared to other controls, is relatively simple and offers a large number of fabrics and configurations that can be customized to better suit the specific process. The use of a baghouse also allows the collected material to be easily removed from the hopper for disposal.

Electric Static Precipitator (ESP): ESPs are widely used for the control of particulates from a variety of combustion sources including wood combustion. An ESP is a particle control device that employs electric fields to charge the particulates and remove them from the gas stream onto oppositely charged collector plates. There are a number of different designs that achieve very high overall control efficiencies. Control efficiencies

typically average over 98% with control efficiencies almost as high for particle sizes of one micrometer or less. ESPs are available as a dry electrostatic precipitator or a wet electrostatic precipitator (WESP). The method of collection is the same in both systems with the primary difference being the use of water to remove the PM from the collection media in the WESP system. The advantage of dry systems is that they may have a lower capital cost and reduced waste disposal problems. Wet systems may be less expensive to operate and are slightly more efficient at capturing very small particles but would add an additional wet waste stream.

As discussed in EPA's *Wet Electro Static Precipitator* and *Dry Electro Static Precipitator* fact sheets, ESPs are physically large units which will not provide the control over large particle size distribution variations. The units require a large volume of flue gas to achieve the residency time required to reach the unit's maximum efficiency. ESPs function optimally in steady state conditions. The proposed boiler units will be prone to load and flow fluctuations and wide variation in particulate size. These fluctuations would affect the efficiency of either a dry or wet ESP. This control device is technically feasible for the proposed facility but has been removed from consideration of BACT as it is not anticipated to achieve higher control efficiencies than the controls previously discussed. ESPs typically have higher capital and operating costs than baghouses but do not provide significantly improved particulate controls on smaller systems.

Exhaust Gas Recycle: Exhaust Gas Recycling (EGR) is a potential pollutant control mechanism for biomass combustion units. EGR is typically used to recover heat and reduce the emission from the final exhaust point of the system. The recycling of gas will bring the pollutants present in the exhaust gas back into contact with the heat source (flame) resulting in the destruction of some of the condensables, VOCs, and particulates. Gas recycling is limited by the ability to provide make-up air and necessary gas condition for drying. EGR is technically feasible but will not provide sufficient control to be considered BACT without add-on control devices.

Proposed Particulate Matter BACT

Based on the varying size of anticipated particulate matter and ability to collect and recirculate filtered material back into the processing stream, Fiberight is proposing to operate a multiclone system in conjunction with a filter fabric/baghouse control system. The multiclone will serve to collect the larger particulates exiting the boiler. This will allow the baghouse filters to be designed to control smaller particulate. The proposed baghouse system will consist of a BETH USA BETHPULS bag filter single-line baghouse. Each boiler will exhaust to an individual baghouse for control of PM. Fiberight will use good housekeeping practices and manufacturer's guidance for maintenance intervals and fabric filters replacement. Collected materials from the hopper will be conveyed to a roll-off container within the processing building. The proposed baghouse configuration will have a PM emission rate of approximately 6.1 lbs/hr for each boiler.

6.3 Volatile Organic Compounds (VOC)

VOC generation in regards to industrial boilers typically results from vaporization of fuels or leaks in oil or gas piping. In the case of a biomass fired boiler, VOCs would primarily occur during combustion while operating in process upset conditions or failing to maintain the equipment.

Good Combustion Practices: Good combustion practices include operating the system based on the design and recommendation provided by the manufacturer and by maintaining proper air-to-fuel ratios with periodic maintenance checks. A well operated system utilizing good combustion practices is the most prevalent and cost effective measure for reducing VOC emissions from the proposed boilers.

Proposed VOC BACT

Proposed good combustion practices to be implemented by Fiberight will maintain VOC emissions below the threshold for a minor source. Good combustion practices will be considered BACT for this project.

6.4 Carbon Monoxide

CO emissions are generally a product of incomplete combustion. The most effective methods for reduction of CO emissions are designed to complete the combustion process. Control devices can include add-on controls and good combustion practices.

Good Combustion Practices: Good combustion practices include operating the system based on the design and recommendation provided by the manufacturer. A well operated combustion system will be balanced to limit both CO and NOx. A system that maximizes the combustion of the fuel will emit the least amount of CO possible. Combustion parameters may include temperature, excess air, fuel feed rate, and gas recirculation. Good combustion practices are the most prevalent and cost effective measure for reduction of CO emissions.

Proposed CO BACT

Fiberight is proposing to use good combustion practices for control of CO emissions.

6.5 Sulfur Dioxide

The PHS and wood fuel is inherently low in sulfur content. The low projected emissions for SO₂ do not warrant the installation of additional control devices. The anticipated fuel sulfur content is approximately 0.05% as received. The use of this low sulfur fuel will be considered BACT for SO₂ for this project.

Proposed CO BACT

Fiberight is proposing to use low sulfur content fuel and good combustion practices for control of SO₂ emissions.

6.6 HAPs/Heavy Metals

Fiberight has submitted a Self-Determination to the EPA stating that PHS is a NHSM and not a waste. As part of this determination Fiberight submitted analytical data to the EPA summarizing the contaminants present in the fuel. The heating value and concentrations of metals, specifically mercury, are expected to be similar to biomass. The PHS fuel and boiler system differs from the sources that typically install controls for metals and other HAPs. The typical add-on control for mercury is carbon injection and is usually found on large coal-burning power generation facilities and waste to energy facilities that burn MSW or waste derived fuels. The Fiberight processing and enzymatic hydrolysis process contains separation, washing and processing steps designed to limit the inorganic contaminants in the pulp that enters the hydrolysis reactors. These steps reduce the concentrations of Metals/HAPS present in the PHS to levels similar to those found in biomass.

Activated Carbon Injection: Activated carbon injection (ACI) is a typically installed on larger boiler systems that combust MSW, waste derived fuels or coal. Smaller boiler systems generally do not have the size or suitable locations for carbon injection in order to provide the necessary residence time for ACI to have effective mixing of the carbon and flu gas. In addition the injected carbon increases the amount of particulates in the gas stream and consequently the amount of PM captured in the baghouse that must be disposed of. Fiberight will be using fuel with low levels of metals in the fuel and the addition of carbon to the flue gas will provide limited control on the target pollutants entrained in the gas stream. ACI is determined to be technically infeasible.

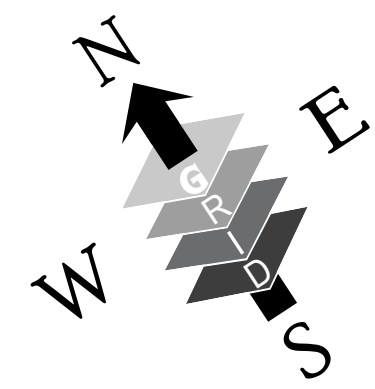
Proposed Metals/HAPs BACT

Fiberight is proposing to use a fuel that has inherently low concentration of heavy metals. In addition the PM control system (multiclone/baghouse) will collect metals that are bound to particulates which will further reduce the amount of metals emitted to the atmosphere. In addition the emission control system is designed to provide sufficient control and collection efficiencies to meet the requirements for New Sources as specified in 40 CFR Part 63, Subpart JJJJJJ *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*.

FIGURE 1

GENERAL ARRANGEMENT PROCESS DIAGRAM

General Arrangement Process Diagram



30 15 0 30 60
Feet
1 inch = 30 feet

Legend

- Pit
- ▲ Scrubber Intake
- MSW Processing Flow
- Drain
- Duct
- Wall (MSW/Processing Area)
- Stormwater Line
- Sewer Line
- Gas Line
- Water Line
- Drip Edge Outlet
- Drip Strip
- Operational Features
- Building
- Pond
- Scales
- Tank
- Road
- Anaerobic Digestion Area
- Hydrolysis Area
- Materials Recovery Facility Area
- Pulp Area
- Wash Area
- Waste Water Treatment Area



MAP NOTES:

- 1: SITE DATA DEVELOPED BY CES, INC., DECEMBER, 2015.
- 2: OPERATIONAL FEATURES AND INFRA-STRUCTURE PROVIDED BY FIBERIGHT, 2015. LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO CHANGES.
- 3: MAP IS PROJECTED USING STATE PLANE COORDINATES, US SURVEY FEET, EAST ZONE AND REFERENCES THE NORTH AMERICAN DATUM OF 1983 (NAD83).
- 4: NORTH ARROW IS REFERENCED TO GRID NORTH.
- 5: INTENDED FOR REFERENCE PURPOSES ONLY. THE MRC & CES, INC. AND THEIR AFFILIATES ARE NOT RESPONSIBLE FOR THE MISUSE OF THIS MAP OR DATA DEPICTED HEREIN.

Fiberight, LLC. & Municipal Review Committee
Project No.: 11293.001
Updated: 12/8/2015 [lladd]

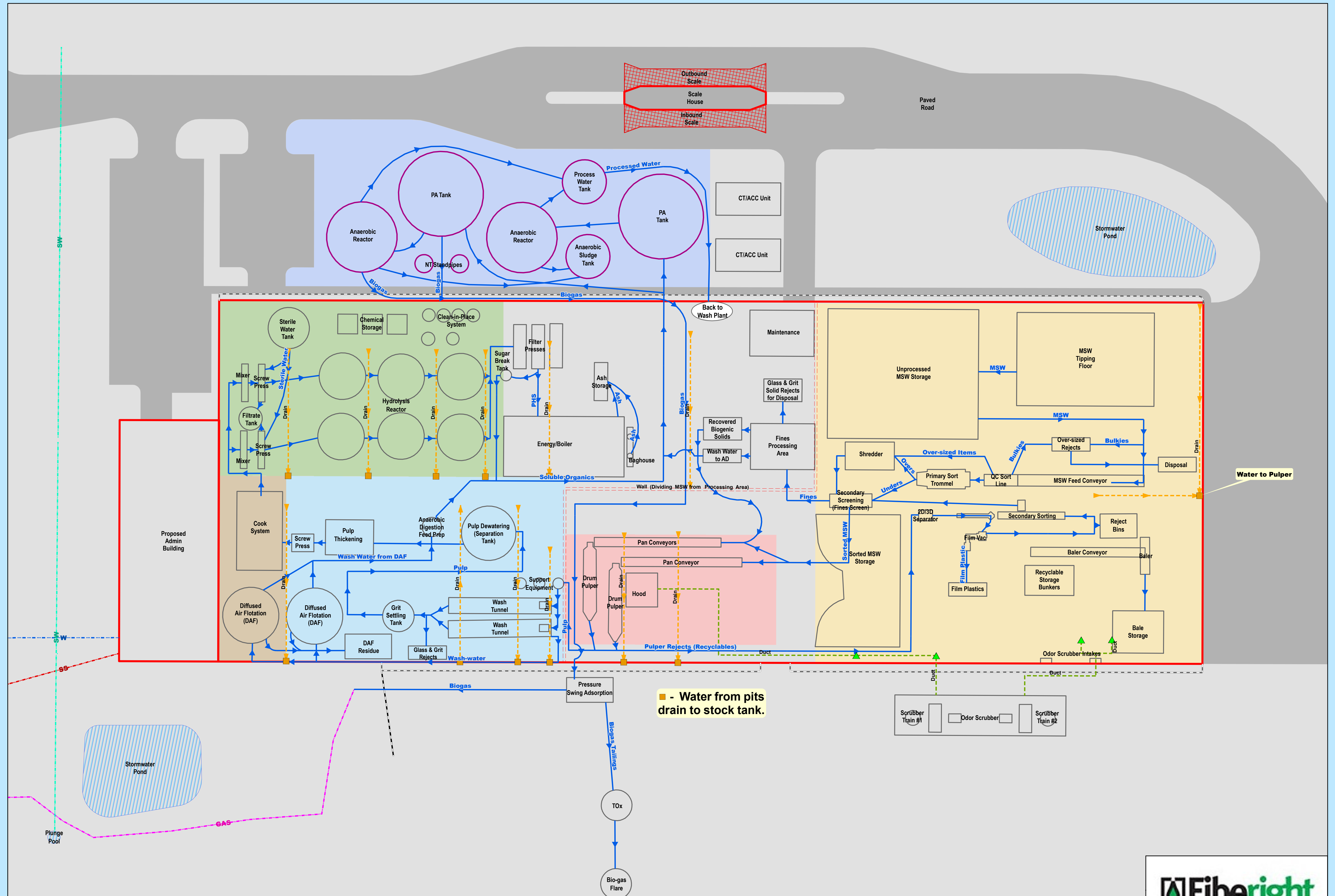
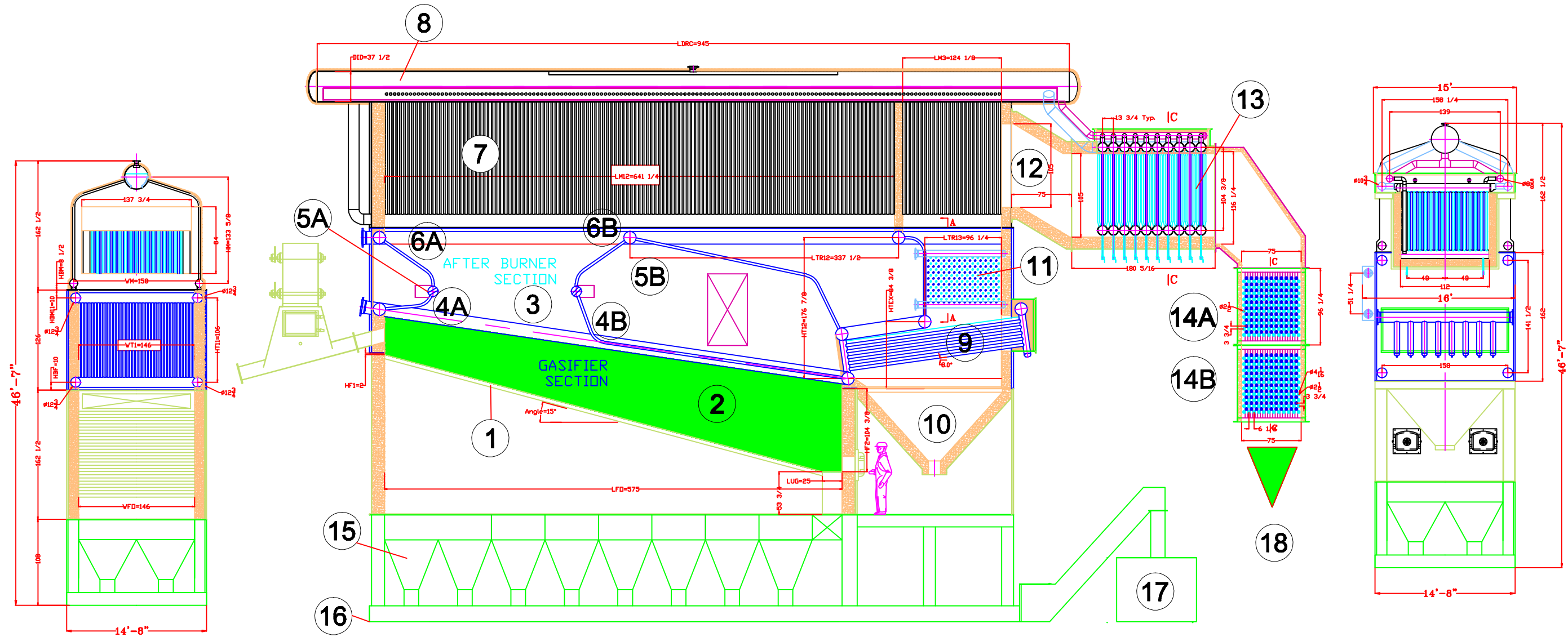



FIGURE 2
BOILER CONFIGURATION

CLOSE-COUPLED GASIFIER



Close Coupled Gasifier Drawing Key

- | | | | |
|------|------------------------------|-------|--|
| 1 | Reciprocating Grate | 10 | U-Hopper |
| 2 | Gasifier Section | 11 | Super Heater Section (Turbine Re-heater) |
| 3 | After Burner Section | 12 | Transition |
| 4 AB | Refractory Arch | 13 AB | Convective Section (Cassette Style) |
| 5 AB | Overfire Air | 14 | 2-Stage Economizer (2nd Stage for DA) |
| 6 AB | Water Walls | 15 | Sifting Hoppers |
| 7 | Membrane Wall Section | 16 | Wet Ash Conveyor |
| 8 | Main Stream Drum | 17 | Ash Bin |
| 9 | Screening Tube Bank (Cooler) | 18 | Flue Gas to Emissions Control |



HURST BOILER

**HURST BOILER
& WELDING CO., INC.**

COOLIDGE, GEORGIA 31738
PH: 229-346-3545 FAX: 229-346-3874

**3500 CLOSE COUPLE GASIFIER
RECIPROCATING GRATE STOKER**

For: **GLOBAL ENERGY**

SCALE:	DRAWN BY:	DATE:	CHECKED BY:	DRAWING NUMBER:	R
	VK	10/01/2014	VK	003	1

FIGURE 3
SCRUBBER CONFIGURATION

Proposal Number: 174-3733- 010-T-010

**SCOPE OF SUPPLY
For
AMEC Power and Process**

Attention: Matthew De Kam

Rep: Great Northern Environmental

Matt Fritze

Phone: (651) 289-9100

Date:	November 18, 2013
Validity	60 days
Expiration date:	January 18, 2014

Haluk M. Bafrali *Nov. 18, 2013*

Approved by

Date

Terms and Delivery

BUDGET Price:	US\$ 850,000.00
Options:	
Service	Not included

Term of Sale:	F.O.B. Shipping Point, Freight Allowed
Payment Terms:	Net 30 days
Submittals:	4 – 6 weeks after receipt of order with complete details
Shipment:	12 – 14 weeks after approval with release for fabrication

Validity

Pricing is valid for 60 days from the date given on the cover page of this document. Pricing and Payment Terms are subject to credit approval.

Escalation

Due to market volatility in key raw materials including, but not limited to, steel, nickel, chrome, copper, precious, and other metals, thermoplastic and FRP resins, pricing provided may be subject to escalation at time of Met-Pro issuance of purchase orders to its suppliers.

Offer Acceptance

ACCEPTANCE OF THIS OFFER IS LIMITED TO ITS TERMS INCLUDING ALL OF THE TERMS AND CONDITIONS ATTACHED, WHICH ARE PART OF THE OFFER.

To insure proper processing, a purchase order resulting from this proposal should **reference proposal number # 263-3693-010-T-010**, and be issued to: Duall, Met-Pro Technologies.

Contact information:

Haluk M. Bafrali
Regional Sales Manager – Municipal Systems
Phone: 412-220-9713
e-mail: hbafrali@met-pro.com

Accepted by:

Title:

BASIS OF DESIGN

Service Conditions: **100,000 CFM Total Flow**
Two (2) trains each with a flow of 50,000 CFM

Location of Equipment: Indoors

Free-Standing: Yes

Process Requiring Controls:

No. of Control Stages: Two (2) Stages each train

Stage 1 & 2:

Gas Conditions:	<u>Inlet</u>	<u>Outlet</u>
Flow Rate, ACFM	50,000	50,000
Temperature, F	70	70
Relative Humidity, %	75%	75%
Bulk Gas Composition	Air	Air

<u>Contaminant</u>	<u>Inlet</u>	<u>Outlet</u>	<u>Overall Removal Efficiency</u>
Ammonia	15,000 ppb	750 ppb	95%
H₂S	1,000 ppb	100 ppb	99% or 100 ppb whichever is greater
VOCs (as H₂S)	6,000 ppb	600 ppb	99%

Operating Parameters:

Stage	1	2
Differential Pressure Drop, iwg	2"	3"
Flow Direction	Cross flow	Counter current

Chemical Usage: **Per 50,000 cfm train.**

H₂SO₄ (93%) **0.40 gph**

NaOH (20%) **1.6 gph**

NaOCl (12%) **9.5 gph**

Equipment Scope of Supply: Two (2) 50,000 CFM Trains:

Each Train to consist of:

A. Cross-Flow Scrubber – Duall Model F105-202S complete with:

- Material of Construction: Heavy Duty Corrosion Resistant PVC
- Spray Liquid Distributor: PVC Nozzle(s)
- Plumbing: Schedule 80 PVC
- Scrubbing Bed: High Efficiency Polypropylene Spherical Packing
- Mist Eliminator Bed: High Efficiency Polypropylene Spherical Packing
- Differential Pressure Gauge: Magnehelic
- Transitions: Inlet and Outlet
- Recirculation Pump: Vertical Seal-less/Horizontal with TEFC Motor

B. Packed Tower Scrubber – Duall Model PT510-132 Complete with:

- Material of Construction: Heavy Duty Corrosion Resistant PVC
- Spray Liquid Distributor: PVC Nozzle(s)
- Plumbing: Schedule 80 PVC
- Scrubbing Bed: High Efficiency Polypropylene Spherical Packing
- Mist Eliminator Bed: High Efficiency Polypropylene Spherical Packing
- Differential Pressure Gauge: Magnehelic
- Transitions: Inlet and Outlet
- Recirculation Pump: Vertical Seal-less/Horizontal
- Recirculation Sump: Self Contained/Remote with TEFC Motor

C. FRP Fan – Duall Model NH-98 Fan

Complete 125 HP, TEFC, 1800 RPM, 3 ph., 60 Hz. 460 V. motor.

D. Inter-Connecting Duct Work

Duct work between cross flow scrubber and packed tower scrubber.

Duct work between packed tower scrubber and fan.

E. Control Panel

NEMA 4X Control panel with motor starters for fan and pumps.
pH and ORP controllers.

F. Chemical Metering Pumps

Three (3) metering pumps.

One H₂SO₄ pump.

One NaOH pump.

One NaOCl pump.

ITEMS NOT SUPPLIED BY Met-Pro Environmental Air Solutions: Unless specifically listed in our scope of supply, these items are not part of this proposal. Please contact MPEAS for optional pricing.

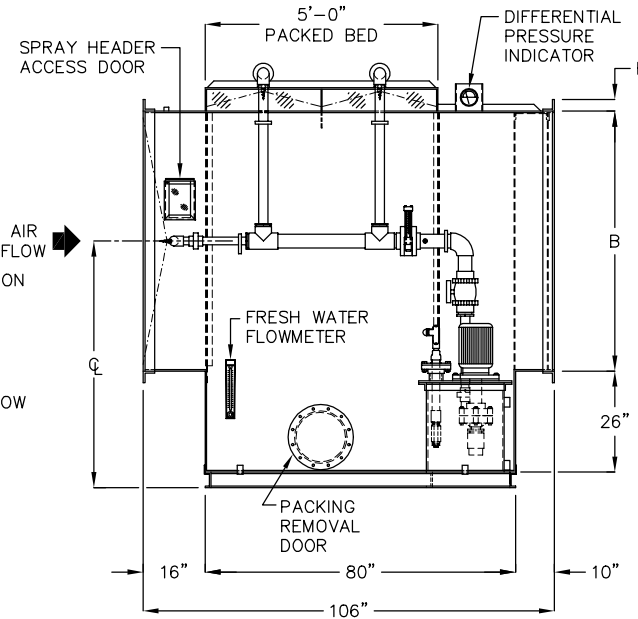
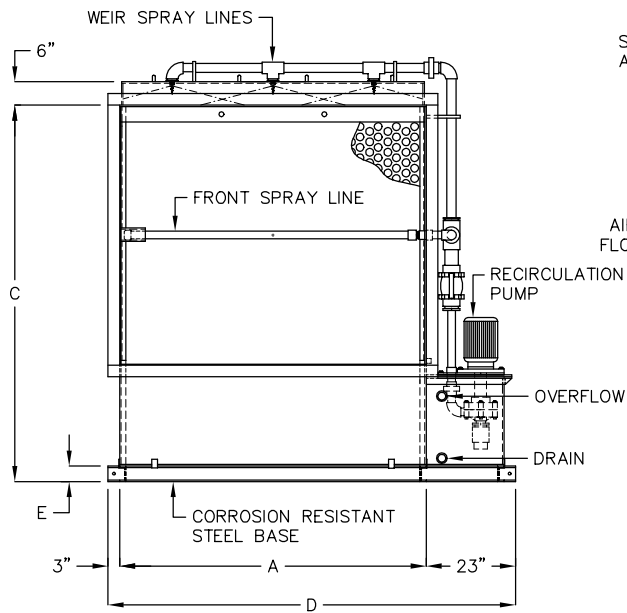
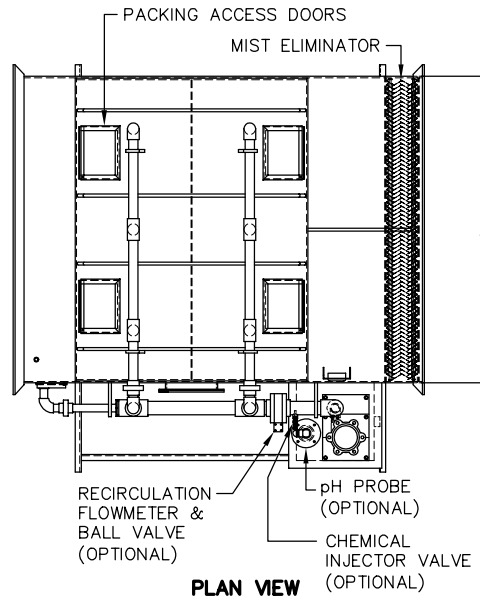
- All permits, taxes, duties, brokerage, local fees and licensing fees are the responsibility of others.
- Freight driver detention expenses.
- Off loading and storage.
- All piping, valves, and accessories required to complete installation.
- All electrical wiring, conduit, motor control centers, local disconnects, and instrumentation connection accessories.
- Inlet ducting, pipe and collection hoods
- Supports/Hangers.
- Hardware.
- Gas detectors and or sensors.
- Dampers/Actuators
- Flexible Connectors
- Pre-wiring or skid mounting of panel.
- Fan sound acoustical cladding.
- Installation (basic).
- System airflow balancing.
- Annual or biannual system inspection and balancing (site visits).
- Installation supervision.

Notice

All material contained in this Quote is proprietary and shall be treated confidentially by all recipients. Your acceptance of this material constitutes acknowledgment of the confidential relationship under which disclosure and delivery are made. This Quote represents our interpretation of your requirements based on the specific information provided at time of inquiry, and should discrepancies arise, modifications be made, or understandings differ, we reserve the right to modify the Quote. This Quote is for this inquiry only and does not eliminate or supersede any other agreements or obligations (financial or otherwise), between the parties.

NOTES:

1. DIMENSIONS IN INCHES, WEIGHTS IN POUNDS.
2. DIMENSIONS ARE APPROXIMATE ONLY, DO NOT USE FOR FABRICATION.
3. STANDARD MATERIALS ARE PVC, CPVC, PP, & PVC/FRP.
4. MAXIMUM PRESSURE DROP ACROSS THE SCRUBBER AT DESIGN CONDITIONS IS 2 1/2" W.C.



MODEL NUMBER	MAX. CFM	A	B	C	D	E	F	CL	DRY WEIGHT	PUMP QTY. AND H.P.
F105-18S	500	18	10	39	44	3	2	34	784	(1) 2 HP
F105-22S	1,000	22	14	43	48	3	2	36	942	(1) 2 HP
F105-28S	2,000	28	20	49	54	3	2	39	1,094	(1) 2 HP
F105-32S	2,700	32	24	53	58	3	2	41	1,148	(1) 2 HP
F105-37S	3,700	37	29	58	63	3	2	43 1/2	1,237	(1) 2 HP
F105-41S	4,700	41	33	62	67	3	2	45 1/2	1,398	(1) 2 HP
F105-45S	6,000	45	37	66	71	3	2	47 1/2	1,491	(1) 5 HP
F105-52S	8,000	52	44	73	78	3	2	51	1,654	(1) 5 HP
F105-58S	10,000	58	49	78	84	3	3	53 1/2	1,849	(1) 5 HP
F105-64S	12,000	64	54	83	90	3	3	56	1,997	(1) 5 HP
F105-69S	14,000	69	59	88	95	3	3	58 1/2	2,437	(1) 5 HP
F105-74S	16,000	74	64	93	100	3	3	61	2,468	(1) 5 HP
F105-79S	18,000	79	67	97	105	4	3	63 1/2	2,561	(1) 7 1/2 HP
F105-84S	21,000	84	71	101	110	4	3	65 1/2	2,746	(1) 7 1/2 HP
F105-90S	23,000	90	73	103	116	4	3	66 1/2	2,990	(1) 7 1/2 HP
F105-96S	25,000	96	73	103	122	4	3	66 1/2	3,173	(1) 7 1/2 HP
F105-104S	27,000	104	73	103	130	4	3	66 1/2	3,524	(1) 7 1/2 HP
F105-112S	30,000	112	73	103	138	4	3	66 1/2	3,918	(1) 7 1/2 HP
F105-123S	32,500	123	73	103	149	4	3	66 1/2	4,081	(1) 7 1/2 HP
F105-135S	35,000	135	73	103	161	4	3	66 1/2	4,473	(1) 7 1/2 HP
F105-157S	40,000	157	73	103	183	4	3	66 1/2	5,137	(2) 7 1/2 HP
F105-179S	45,000	179	73	103	205	4	3	66 1/2	5,635	(2) 7 1/2 HP
F105-202S	52,000	202	73	103	228	4	3	66 1/2	6,233	(2) 7 1/2 HP
F105-224S	57,000	224	73	103	250	4	3	66 1/2	6,704	(2) 7 1/2 HP
F105-247S	63,000	247	73	103	273	4	3	66 1/2	7,329	(2) 7 1/2 HP

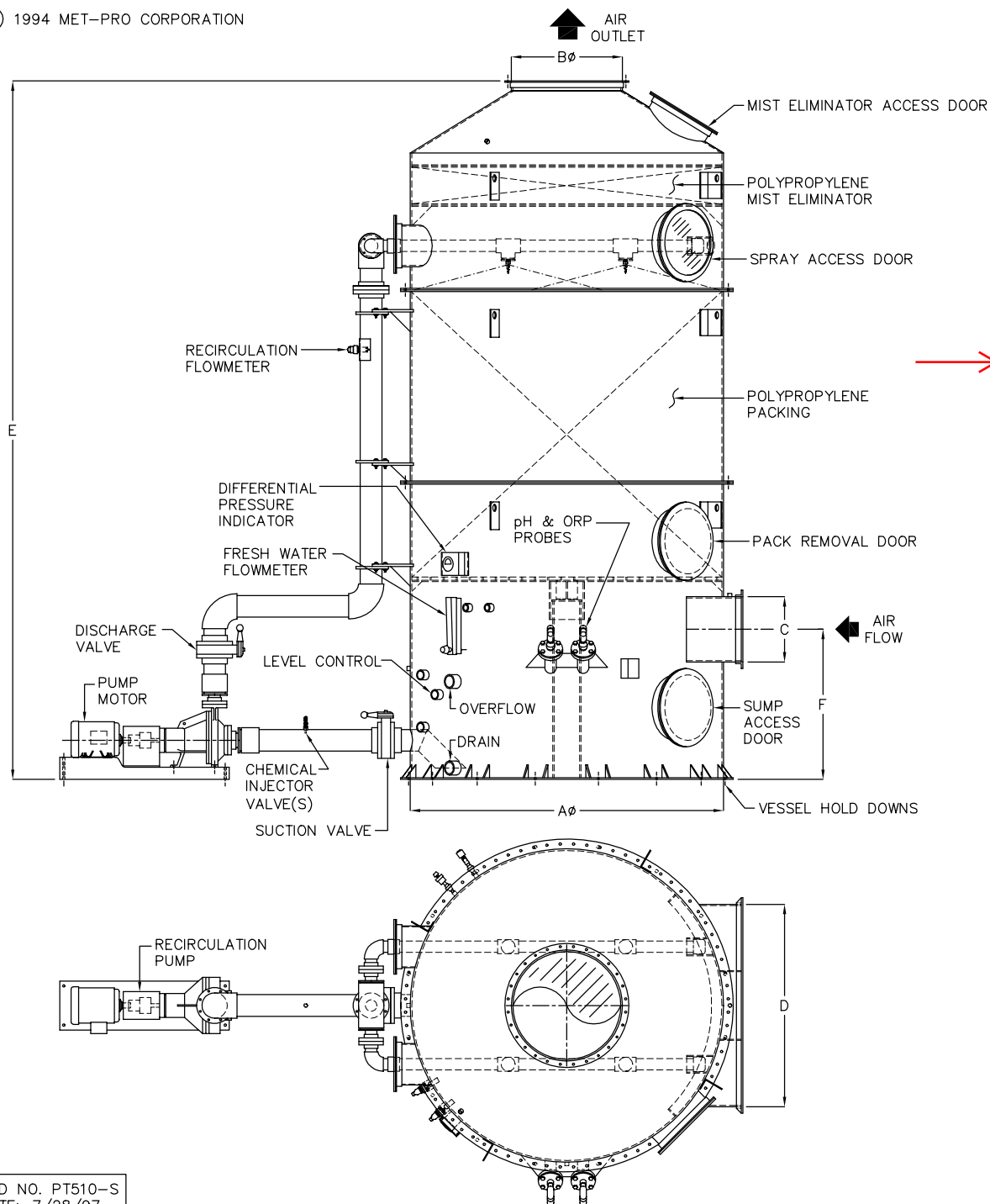
**MODEL F105 SCRUBBER
(SELF CONTAINED RECIRCULATION)**



DUALL DIVISION
1550 INDUSTRIAL DRIVE
OWOSSO, MI 48867

DATE	DUALL JOB NO.
AIR FLOW RATE	C.F.M.
PRESSURE DROP	W.C.
RECYCLE RATE	G.P.M.
MAKE-UP RATE	G.P.H.

NOTE: THIS PRINT IS THE PROPERTY OF MET-PRO CORPORATION. IT MUST NOT BE REPRODUCED IN ANY MANNER, NOR SHALL IT BE SUBMITTED TO OUTSIDE PARTIES FOR EXAMINATION WITHOUT OUR WRITTEN CONSENT. IT SHALL BE USED ONLY AS A MEANS OF REFERENCE TO WORK DESIGNED OR FURNISHED BY US.



MODEL NUMBER	MAX. CFM	Aφ	Bφ	C	D	E	F	RECYCLE RATE	PUMP HP	DRY WEIGHT
PT510-24	1,500	24	12 3/4	12 3/4φ	232	42		20	1 1/2	900
PT510-36	3,500	36	16	16"φ	236	44		46	3	1,600
PT510-48	6,500	48	20	20"φ	242	46		82	3	2,300
PT510-60	10,500	60	26	26"φ	246	49		126	5	2,700
PT510-72	15,500	72	30	30"φ	250	51		185	5	4,300
PT510-84	21,000	84	36	19 53	255	45		250	7 1/2	5,700
PT510-96	27,500	96	42	20 62	250	46		326	7 1/2	6,900
PT510-108	34,500	108	46	24 69	256	48		415	15	8,300
PT510-120	43,000	120	52	26 76	262	49		510	15	10,900
PT510-132	52,000	132	56	29 84	268	51		620	20	11,400
PT510-144	62,000	144	62	32 92	274	52		735	20	12,900

NOTES:

1. DIMENSIONS IN INCHES, WEIGHTS IN POUNDS.
2. DIMENSIONS ARE APPROXIMATE ONLY, DO NOT USE FOR FABRICATION.
3. STANDARD MATERIALS ARE PVC, CPVC, PP, & PVC/FRP.
4. MAXIMUM PRESSURE DROP ACROSS THE SCRUBBER AT DESIGN CONDITIONS IS 4 1/2" W.C.
5. LIFTING LUGS ARE SUPPLIED BY DUALL AS REQUIRED.

**MODEL PT510
ODOR CONTROL SCRUBBER**



DUALL DIVISION
1550 INDUSTRIAL DRIVE
OWOSSO, MI 48867

DATE	DUALL JOB NO.
AIR FLOW RATE	C.F.M.
PRESSURE DROP	W.C.
RECYCLE RATE	G.P.M.
MAKE-UP RATE	G.P.H.

NOTE: THIS PRINT IS THE PROPERTY OF MET-PRO CORPORATION. IT MUST NOT BE REPRODUCED IN ANY MANNER, NOR SHALL IT BE SUBMITTED TO OUTSIDE PARTIES FOR EXAMINATION WITHOUT OUR WRITTEN CONSENT. IT SHALL BE USED ONLY AS A MEANS OF REFERENCE TO WORK DESIGNED OR FURNISHED BY US.

APPENDIX 1

NHSM NON-WASTE APPLICATION

Non-Waste Determination Application for
Non-hazardous Secondary Material -
Fermentate from a Cellulosic Ethanol Plant
Pursuant to 40 CFR Section 241.3, Standards and Procedures for
Identification of Non-Hazardous Secondary Materials
6/7/2013

Submitted to U.S. EPA Region 7
Administrator Bob Perciasepe
11201 Renner Blvd.
Lenexa, KS 66219

Submitted by:
Fiberight LLC
PO Box 21171
Catonsville, MD 21228
Craig Stuart Paul, CEO
410-340-9387

Summary:

This document is an application submitted pursuant to 40 CFR Section 241.3(c). That regulation allows for certain types of non-hazardous secondary materials (NHSM) to be determined by the U.S. EPA to be non-wastes when they are used for combustion. Fiberight proposes herein that the material it wishes to produce for sale at its cellulosic ethanol plant to various customers for use in combustion units meets the criteria spelled out in the above referenced regulation; and as such is not a solid waste.

The material is similar in content to more widely used fuels, and emissions from its burning should be similar as well. Tables are included in this document that compare both constituents with other fuels, and likely air emissions.

Emission factors for criteria pollutants are likely to be similar to the burning of wood or bagasse. Metals emissions were calculated directly from analyses of the NHSM for metals content. Neither the criteria nor hazardous waste pollutants are much different from those emitted from wood, bagasse, coal, TDF, and so on. The material has a significant heating value, similar to bagasse and wood and as such, should be harvested to produce renewable energy. With its fuel made from what would otherwise be waste, Fiberight is at the forefront of the cellulosic ethanol production technology.

Introduction:

The Process: Fiberight is a privately held company founded in 2007 with current operations in Virginia, Maryland and Iowa. As a leading edge clean technology company, our team focuses on transforming post-recycled municipal solid wastes and other organic feed stocks into next generation renewable biofuels, with cellulosic ethanol as the core product. Pilot plant facilities have been on-going during 2008-2009. In November 2009, Fiberight purchased a former dry-mill corn ethanol plant in Blairstown, IA with the intent to cost efficiently retrofit this plant for commercial level operations. Initial stage investment for the company's \$30 million Iowa plant will enable the company to commence production of its demonstration scale facility in early 2015 to convert industrial and municipal solid wastes into cellulosic ethanol and biogas using proprietary sorting, pulping, enzymatic hydrolysis and recycling technology. Following the demonstration phase at our Virginia plant from 3rd Qtr 2012 – 1st Qtr, 2013 the Iowa plant will be scaled to commercial production capacity of 6 MMgy by early 2016 Fiberight is targeting rapid expansion of its proto-type commercial plants in markets with 100,000 or more population within a five mile radius, with special focus on municipalities with high-stranded trash costs or landfill limitations.

Fiberight's Targeted Fuel Extraction (TFE) process recognizes that solid waste is neither homogeneous nor fully convertible to energy. Fiberight has developed a remarkably innovative system that bifurcates organic and inorganic wastes and converts them according to type. Fiberight's TFE process separates, cleans and processes organic and hydrocarbon fractions then converts the organic fraction into cellulosic biofuel, the hydrocarbon fraction into plant energy and electricity, and the inert fraction into recyclables or other beneficial products. It is the

residue from the fermentation of the organic (biomass such as paper and cardboard) contained in the waste that Fiberight is targeting for sale for the use of replacing other fuels at the end use facilities.

Novel technologies such as enzyme recycling and cellulosic sugar concentration are being developed to control costs and the company has tested these processes on a commercial scale. During 2012, Fiberight achieved high yield conversion factors at its Lawrenceville, VA pilot plant due to recent evolution of the robust enzyme catalysts used in strategic partnership with technical partner, Novozymes. Fiberight is now able to forecast, with extensive data back-up, its ability to produce cellulosic ethanol in a commercially viable process.

It is the understanding of the different compositions of materials contained in the nation's MSW, and the ability to focus optimized processes for their conversion without creating dangerous emissions or effluents, that differentiates Fiberight's technology from other less efficient thermal or chemical waste to energy projects. Most importantly, the technology platform has been tested at an industrial scale, all the way through finished transportation grade fuel; making Fiberight one of the first companies in the US to achieve this important milestone.

By applying a combination of expertise in the waste industry with specialty biotech knowledge, Fiberight has created a means to efficiently sort, pulp, process, digest and refine the abundant cellulosic content in organic waste materials. Our processes produce high yields of glucose which is converted into alcohol and then into the end product – fuel grade cellulosic ethanol. What differentiates Fiberight from other biofuel approaches is that we have applied our practical materials handling expertise in the recycling and waste management industries to develop the concept into a commercially viable business. Our team has taken its knowledge about production plant design, waste processing methodologies, and our expertise regarding enzymatic hydrolysis to build a profitable and solution-driven business.

Fiberight's Key Process:

- Pre-sort & primary pulping removes possibly useable materials to optimize process
- Separates Biogenic from hydrocarbon based components for efficient conversion to biofuel and credit qualification
- Creates clean plastics stream for recycling
- Wash stage for quality fractionation & ash removal
- Continuous fed batch – high solids loading for cellulosic sugar concentration
- Cellular disruption for yield maximization combined with sterilization stage
- Sterility management in enzymatic digestion & fermentation
- Secondary wash to overcome glucose inhibition & glucose losses

- Enzyme recovery enables high enzyme dosing and yield improvement while controlling cost
- Glucose concentration step improves ethanol yield & energy balance while obviating “stuck” fermentations
- By products for beneficial sale or energy production –including residual organic biomass and waste plastic fraction which is unsuitable for recycling but ideal for energy

Definition of Biomass output -The fermentation process is designed around a clean biomass pulp. It is optimized for enzymatic conversion. The Hydrolysis of the biomass fraction of the community's waste produces liquid sugars for conversion to biofuels, and a byproduct that we refer to as fermentate or NHSM. These are the materials left after the extractable sugars have been removed from the organic fraction of the carefully targeted separated waste.

This document is intended to meet the requirements of 40 CFR 241.3(c) and (d)(2) which allow that certain materials meeting the rule specified legitimacy criteria are not wastes when combusted for energy recovery.

These provisions are codified into regulations at [40 CFR part 241.3](#). According to the regulation at 241.3(c) The Regional Administrator may grant a non-waste determination that a non-hazardous secondary material that is used as a fuel, which is not managed within the control of the generator, is not discarded and is not a solid waste when combusted. The Fiberight facility is located within Region 7. This application is submitted to the Region 7 Administrator. The criteria and process for making such non-waste determinations includes the following:

(1) Submittal of an application to the Regional Administrator for the EPA Region where the facility or facilities are located or the Assistant Administrator for the Office of Solid Waste and Emergency Response for a determination that the non-hazardous secondary material, even though it has been transferred to a third party, has not been discarded and is indistinguishable in all relevant aspects from a fuel product. The determination will be based on whether the non-hazardous secondary material that has been discarded is a legitimate fuel as specified in paragraph (d)(1) of this section and on the following criteria:

(i) Whether market participants treat the non-hazardous secondary material as a product rather than as a solid waste;

(ii) Whether the chemical and physical identity of the non-hazardous secondary material is comparable to commercial fuels;

(iii) Whether the non-hazardous secondary material will be used in a reasonable time frame given the state of the market;

(iv) Whether the constituents in the non-hazardous secondary material are released to the air, water or land from the point of generation to the point just prior to combustion of the secondary material at levels comparable to what would otherwise be released from traditional fuels; and

(v) Other relevant factors.

Section (d)(1) establishes the legitimacy of the material as a fuel product. Each of these criteria above and the legitimacy criteria are addressed separately below.

40 CFR 241.3(c)(1)(i): Do market participants treat the material as a product rather than a solid waste?

The Fiberight process is innovative, and there are no competitors to compare this material to. We believe that in the future the market will treat this newly developed material as a valuable product, based on its significant heating value, and its similarity to other fuels, including fossil fuels. Using the fermentate for energy recovery is an opportunity to reduce greenhouse gas emissions (GHG) by replacing fossil fuels with material derived from what is essentially biomass; mostly paper and cardboard.

40 CFR 241.3(c)(1)(ii): Is the chemical and physical identity of the NHSM comparable to commercial fuels?

Table 1 is a comparison of the constituents of the material and several other fuel types.

Table 1
Comparison of Fermentate to Common Fuels

% by wt.	Spr Crk Coal^c	Ill. Coal^{c,m}	Oil^b	Wood^{a,m}	Bagasse ^p
Ash	5.7	10.80	0.09	5.30	0.80
Carbon	79.3	69.00	85.71	49.70	19.20
Chlorine		0.04	-	-	-
Hydrogen	5.9	4.90	10.14	5.40	2.60
Nitrogen	0.96	1.00	0.51	0.20	0.15
Oxygen	17.89	10.00	0.92	39.30	77.10
Sulfur	0.35	4.30	2.63	0.10	trace
HHV (Btu/lb)	9,190	10,300	18,192	8,370 (dry)	3,280
Moisture	24.1	17.6	0	5 - 75	58.7
Mercury (lb/mmBtu)^s	8.30E-05			3.50E-06	

% by wt.	MSW^l	RDF^l	TDF^q	Poult.Litter	NHSM.^o
Ash	16.00	6.00	4.78	15.7	4.30
Carbon	27.90	36.10	83.87	27.2	56.30
Chlorine	0.10	0.10	0.09	0.71	0.20
Hydrogen	3.70	5.10	7.09	3.7	7.92
Nitrogen	0.20	0.80	0.24	2.7	0.49
Oxygen	20.70	31.60	2.17	23.1	21.40
Sulfur	0.10	0.10	1.2	0.29	0.05
HHV (Btu/lb)	5,100	6,200	15,500	4,637	3,787
Moisture	31.3	20.2	0.62	27.4	65.1
Mercury (lb/mmBtu)^s		5.50E-06		5.43E-06	3.96E-05

As the table shows, the fermentate has a similar composition to the other commonly used fuels. Moisture is comparable with wood or bagasse, and the carbon and hydrogen components are similar to wood. In fact, the composition of the residuals is most similar to wood. Green wood is generally accepted to have an average moisture content of 40 to 50%, with as-received heating values of around 4500 Btu/lb..

Therefore, to estimate emissions from burning the material we have used EPA's AP42 criteria pollutant emission factors for wood. There is robust data for the emission factors for wood, which is not the case for biomass or paper mill sludge. For metals, we have conservatively assumed that metals in the washed pulp would not participate in the fermentation process, and would be 100% contained in the residual material. The volatility of each of the metals was then determined, and the destination (fly ash, bottom ash) was determined from research paper authored by Leslie Sloss titled, *Volatility of Trace Elements Found in Coals and Solid Fuels* (Clarke and Sloss). The metals that were assumed to be in the fly ash would be controlled by the existing bag house on Boiler No. 5. A conservative control efficiency of 93% was used to develop final emission factors. Ninety three percent is the collection efficiency given in Minnesota Rules for particles smaller than 10 microns. We, again conservatively, assumed that the emitted particles would all be smaller than 10 microns.

The emission rate of these elements was compared to emissions from coal, wood, oil bagasse, RDF, and MSW. EPA presents factors for coal, oil and wood as both controlled and uncontrolled. We assumed that most of the measurements would be controlled because boilers burning these types of fuels do have particulate emission controls; typically ESPs or bag house filters.

Table 2, shows the estimated emission rates of criteria pollutants of various fuel, and we have assumed that the most similar emissions would result from wood burning, with its similar moisture content and material makeup. Also, the NHSM discussed here is primarily derived from wood (paper and cardboard). Table 3 shows the estimated element emission rates of NHSM and other fuels. The emissions of elements are compared in Table 4. by dividing the NHSM emission rate by those factors from coal, or from wood when no factor for coal was available for a given pollutant. Table 4 shows that many of the metals are emitted in quantities equal to those from other fuels, and some of them are emitted at lower rates. There is a higher level of emissions predicted for some of the metals as compared to coal. Many of the metals listed are not considered hazardous, and they will not be discussed further herein. Those metals that are classified as hazardous air pollutants by 40 CFR Part 63, (HAPs), and that do show predicted emissions at higher values than other fuels are manganese and nickel.

Manganese is considered hazardous at air concentrations that are much higher than that found in ambient air. . The danger from manganese over exposure is in the work place; most commonly from those working as welders. The metal causes neurological damage at chronic exposures greater than 0.2 ug/m³ on an annual basis. There is no danger quantified by the Minnesota Department of Health for short term exposures. For illustrative purposes, a 25 MW coal power plant would produce approximately 0.0092 ug/m³ at maximum; approximately one percent of the health benchmark in the air surrounding the facility. This is according to an exercise performed for a utility boiler using Minnesota's Risk Assessment Screening Spreadsheet, also referred to as an AERA (See New Ulm Public Utilities Major Amendment to a Part 70 Permit application, 2009). Computer dispersion models used in the analysis are

generally believed to predict results that are higher than that that will actually occur; they are a conservative estimation tool.

Nickel is a respiratory irritant, and has an acute health benchmark of 11 ug/m³, and a chronic health benchmark of 0.05 ug/m³. Nickel is also thought to cause cancer at high chronic exposures. Nickel has not been identified in Minnesota as a pollutant of concern in the ambient air. Again, likely over exposures are due to workplace contamination. Using the AERA, the maximum ambient concentration that a 25 MW coal power plant would produce is 0.11 ug/m³ on a 1-hour basis, and 0.00061 ug/m³ on an annual basis. Both estimated values are approximately one percent of the health benchmark.

All three tables are shown below.

Table 2
Emission Factors for Criteria Pollutants for Coal and Wood

Emission Factors lb/mmBtu	Coal^{d,e,f}	Oil^g	Wood^h	Bagasse^p	MSW^u	RDF	Poult. Litter^t	NHSM^o
NOx	0.35	0.37	0.22	0.16		0.46	0.03 to 0.20	0.22
SOx	0.49	1.57	0.03		0.35	0.35		0.03
PM	0.68	0.11	0.56	2.06	2.52	0.63	0.02	2.06
PM2.5	0.18	0.06	0.43					0.43
PM10	0.50	0.10	0.50	0.18				0.50
CO	0.20	0.03	0.60		0.05	0.17	0.20	0.60
CO2	205.48	165.22	206.36	205.97	198.44	243.64		206.36

Criteria Pollutants are assumed to be very similar to those emitted by wood. The higher emission factor between wood and bagasse is used due to the similarity of moisture and heating value.

Table 3
Emission Factors for Coal and Wood
Metals Concentration of Fermentate

	Coal	Oil	Wood	MSW	RDF	NHSM			NHSM
	lb/mmBtu	lb/mmBtu	lb/mmBtu	lb/mmBtu	lb/mmBtu	lb/mmBtu	Percent (ⁿ)		lb/mmBtu
	(emission)	(emission)	(emission)	(emission)	(emission)		Volatile	Control	(emission)
Pollutant - lb/mmBtu	controlled and uncontrolled mixed			uncontr.	uncontr.	concentration			controlled
Antimony	7.22E-07	3.50E-05	7.90E-06				10%	90%	0.00E+00
Arsenic	5.42E-04	1.32E-03	2.20E-05	4.39E-04	5.40E-04	6.87E-04	50%	90%	3.43E-05
Barium		1.71E-05	1.70E-04				10%	90%	0.00E+00
Beryllium	8.42E-07	1.85E-05	1.10E-06				10%	90%	0.00E+00
Cadmium	4.30E-05	2.65E-06	4.10E-06	1.10E-03	7.94E-04	1.85E-04	50%	90%	9.24E-06
Chromium, total	1.57E-03	5.63E-06	2.10E-05	9.02E-04	1.27E-03	1.03E-02	10%	90%	1.03E-04
Chromium, hexavalent	3.17E-06	1.65E-06	3.50E-06				10%	90%	0.00E+00
Cobalt		4.01E-05	6.50E-06			5.81E-04	10%	90%	5.81E-06
Copper		1.17E-05	4.90E-05			1.85E-02	10%	90%	1.85E-04
Iron			9.90E-04			8.19E-01	10%	90%	8.19E-03
Lead	5.07E-04	1.01E-05	4.80E-05	2.14E-02	1.83E-02	5.81E-03	50%	90%	2.90E-04
Manganese	1.97E-05	2.00E-05	1.60E-03			1.56E-02	10%	90%	1.56E-04
Mercury	1.60E-05	7.53E-07	3.50E-06	5.63E-04	5.09E-04	7.92E-05	100%	90%	7.92E-06
Molybdenum	0.00E+00	5.25E-06	2.10E-06			5.28E-04	10%	90%	5.28E-06
Nickel	1.12E-05	5.63E-04	3.30E-05	7.89E-04	7.14E-04	5.28E-03	10%	90%	5.28E-05
Phosphorus		6.31E-05	2.70E-05			4.75E-01	10%	90%	4.75E-03
Potassium	0.00E+00		3.90E-02			1.24E-01	10%	90%	1.24E-03
Selenium	5.21E-05	4.55E-06	2.80E-06			0.00E+00	100%	90%	0.00E+00
Silver			1.70E-03			0.00E+00	10%	90%	0.00E+00
Sodium			3.60E-04			0.00E+00	50%	90%	0.00E+00

Strontium		1.00E-05	1.14E-02	50%	90%	5.68E-04
Tin		2.30E-05	1.19E-02	50%	90%	5.94E-04
Titanium		2.00E-05	2.22E-02	50%	90%	1.11E-03
Vanadium	2.12E-04	9.80E-07	1.03E-02	10%	90%	1.03E-04
Yttrium		3.00E-07	0.00E+00	10%	90%	0.00E+00
Zinc	1.94E-04	4.20E-04	6.87E-02	50%	90%	3.43E-03

To more easily quantify the metals predicted emission rates with that of another fuel, in this case coal, with wood factors used when there existed no factor for coal for a given pollutant, we produced a ratio of predicted NHSM emissions to that of the other fuels. A value greater than one in the table below indicates that the NHSM will produce higher emissions of that pollutant. A value less than one shows that the NHSM emits less than the other fuels. The elements that are considered hazardous are highlighted

Table 4
Ratio of Element Emissions from NHSM and coal and wood

	NHSM emissions/ coal or wood emissions				
	HAP?				HAP?
Antimony	0.00	yes	Molybdenum	1.76	no
Arsenic	0.04	yes	Nickel	3.29	yes
Barium	0.00	no	Phosphorus	123.23	no
Beryllium	0.00	yes	Potassium	0.02	no
Cadmium	0.15	yes	Selenium	0.00	yes
Chromium, total	0.05	yes	Silver	0.00	no
Chromium, hex	0.00	yes	Sodium	0.00	no
Cobalt	0.63	yes	Strontium	39.74	no
Copper	2.64	no	Tin	18.08	no
Iron	5.79	no	Titanium	38.82	no
Lead	0.40	yes	Vanadium	73.56	no
Manganese	5.55	yes	Yttrium	0.00	no
Mercury	0.35	yes	Zinc	5.72	no

40 CFR 241.3(c)(1)(iii) Will the the non-hazardous secondary material will be used in a reasonable time frame given the state of the market?

Fiberight will transfer the fuel in pellet form in covered trucks as generated. Once it reaches the customer, it will likely be dumped into underground hoppers. From the hoppers the material is conveyed via covered conveyor to silos used for fuel and/or biomass. The silo prevents exposure of the material to rain and the elements.

Section 241.3(d)(1) Legitimacy Criteria:

The rule reads:

"(d) Legitimacy criteria for non-hazardous secondary materials.

(1) Legitimacy criteria for non-hazardous secondary materials used as a fuel in combustion units include the following:

(i) The non-hazardous secondary material must be managed as a valuable commodity based on the following factors:

(A) The storage of the non-hazardous secondary material prior to use must not exceed reasonable time frames;

(B) Where there is an analogous fuel, the non-hazardous secondary material must be managed in a manner consistent with the analogous fuel or otherwise be adequately contained to prevent releases to the environment;

(C) If there is no analogous fuel, the non-hazardous secondary material must be adequately contained so as to prevent releases to the environment;

(ii) The non-hazardous secondary material must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy.

(iii) The non-hazardous secondary material must contain contaminants or groups of contaminants at levels comparable in concentration to or lower than those in traditional fuel(s) which the combustion unit is designed to burn. In determining which traditional fuel(s) a unit is designed to burn, persons may choose a traditional fuel that can be or is burned in the particular type of boiler, whether or not the combustion unit is permitted to burn that traditional fuel. In comparing contaminants between traditional fuel(s) and a non-hazardous secondary material, persons can use data for traditional fuel contaminant levels compiled from national surveys, as well as contaminant level data from the specific traditional fuel being replaced. To account for natural variability in contaminant levels, persons can use the full range of traditional fuel contaminant levels, provided such comparisons also consider variability in non-hazardous secondary material contaminant levels. Such comparisons are to be based on a direct comparison of the contaminant levels in both the non-hazardous secondary material and traditional fuel(s) prior to combustion."

Each of the legitimacy criteria requirements are discussed separately:

40 CFR Section 241.3(d)(i) Is the non-hazardous secondary material managed as a valuable commodity based on the following factors?

(A) The storage of the non-hazardous secondary material prior to use must not exceed reasonable time frames;

As discussed earlier in this document, the NHSM will be generated on a daily basis as a pellet, and will normally be transferred directly to a trailer and transported to the customer. There will be a facility to store material for a short time (maximum 5 days) to allow for transport disruption.

(B) Where there is an analogous fuel, the non-hazardous secondary material must be managed in a manner consistent with the analogous fuel or otherwise be adequately contained to prevent releases to the environment;

The material will not be exposed to the environment in any stage of the process. This meets or exceeds the containment of most similar fuels.

(C) If there is no analogous fuel, the non-hazardous secondary material must be adequately contained so as to prevent releases to the environment;

As above, there will be no exposure to the environment

40 CFR Section 241.3(d)(ii) Does the non-hazardous secondary material have a meaningful heating value and will it be used as a fuel in a combustion unit that recovers energy?

The heating value of the fuel is 3787 Btu/lb. This is higher than the heating value of Bagasse, which is recognized as a valuable fuel. The stoker boiler that will be used for the material's combustion recovers heat in its water walled boiler for providing comfort heat to the buildings on campus.

40 CFR Section 241.3(d)(iii) .Does the non-hazardous secondary material contain contaminants or groups of contaminants at levels comparable in concentration to or lower than those in traditional fuel(s) which the combustion unit is designed to burn? In determining which traditional fuel(s) a unit is designed to burn, persons may choose a traditional fuel that can be or is burned in the particular type of boiler, whether or not the combustion unit is permitted to burn that traditional fuel. In comparing contaminants between traditional fuel(s) and a non-hazardous secondary material, persons can use data for traditional fuel contaminant levels compiled from national surveys, as well as contaminant level data from the specific traditional fuel being replaced. To account for natural variability in contaminant levels, persons can use the full range of traditional fuel contaminant levels, provided such comparisons also consider variability in non-hazardous secondary material contaminant levels. Such comparisons are to be based on a direct comparison of the contaminant levels in both the non-hazardous secondary material and traditional fuel(s) prior to combustion."

We refer the reader to the detailed tables, Tables 1, 2, and 3, that present comparisons of material composition to widely used fuels, and that compare projected emissions of criteria and hazardous air pollutants with other fuels.

Conclusion: On July 5, 2012 Fiberight after obtaining public comments, received the first EPA approved pathway for municipal solid waste (MSW) to biofuel under 40 CFR 80.1450. This application demonstrates additional legitimate fuels that can be derived from the MSW. The analysis presented in this document shows that the material that Fiberight proposes to sell as fuel meets the requirements for a legitimate fuel under 40 CFR Section 241.3(d)(1). This document is an application submitted pursuant to 40 CFR Section 241.3(c). That regulation allows for certain types of non-hazardous secondary materials (NHSM) to be determined by the U.S. EPA to be non-wastes when they are used for combustion. Fiberight proposes herein that the material it wishes to produce for sale at its cellulosic ethanol plant to various customers for use in combustion units meets the criteria spelled out in the above referenced regulation; and as such is not a solid waste.

The material is similar in content to more widely used fuels, and emissions from its burning should be similar as well. Tables are included in this document that compare both constituents with other fuels, and likely air emissions.

Emission factors for criteria pollutants are likely to be similar to the burning of wood or bagasse. Metals emissions were calculated directly from analyses of the NHSM for metals content. Neither the criteria nor hazardous waste pollutants are much different from those emitted from wood, bagasse, coal, TDF, and so on. The material has a significant heating value, similar to bagasse and wood and as such, should be harvested to produce renewable energy.

9/25/13 & 10/7/13 E-mail Exchange with EPA re: Non-Waste Determination Application

From: Bredehoft, Deborah [mailto:bredehoft.deborah@epa.gov]
Sent: Wednesday, September 25, 2013 3:19 PM
To: Jenny Reinertsen - Reinertsen Environmental Services (jreiner@frontiernet.net)
Cc: Toensing, Don
Subject: Additionally Requested Information on Fiberight

Ms. Reinertsen –

Thank you for taking a few minutes to speak with me this morning about Fiberight. As I mentioned during the call, I have outlined EPA's questions below. After you have received and reviewed these questions, could you provide me with an approximately date by which you believe you will respond?

EPA's questions:

1. Is the 8/12/2013 table in ppm of lb/MMBtu? Both units are indicated on the table.
2. Chlorine is on a dry basis, but it does not appear that any of the other pollutants are. What is the % moisture used for the other pollutants?
3. On the same table, footnote "aa" says "residual solids." Is this the NHSM material as-burned, or something else? Also, can they provide the "Summary of Chemical Analysis" spreadsheet referenced in this footnote?
4. Could you provide the moisture content in fuel product?
5. Could you provide the nitrogen and sulfur values for the finished product.
6. Could you provide the general composition of fermentate (paper, cardboard, enzyme used, tannins, etc.)? We are not looking for the chemical composition, but for more general information on what composes the fermentate.
7. How much paper stock is in the skimmings from the DAF? Are the skimmings high in plastic? Are the skimmings similar to what comes off in a recycling process?
8. Could you please indicate if there is a buyer currently lined up and interested in purchasing the fuel generated from this process?

Thanks!
Deborah Bredehoft
Environmental Engineer
RCRA Compliance Officer
USEPA/AWMD/WEMM
Phone: 913-551-7164+
Fax: 913-551-9164
E-mail: Bredehoft.Deborah@epa.gov

RESPONSE: **From:** Jenny Reinertsen [mailto:jreiner@frontiernet.net]
Sent: Monday, October 07, 2013 1:26 PM
To: 'bredehoft.deborah@epa.gov'
Cc: 'Tlnayes'; 'Brian Ryerson'
Subject: FW: FW: Additionally Requested Information on Fiberight

Deborah: Please see my answers to your questions below. Let me know if you have further questions, or require any additional information.

EPA Questions:

1. Is the 8/12/2013 table in ppm of lb/MMBtu? Both units are indicated on the table.
The values given for concentration are % by weight (see cell C8 and I8) unless otherwise noted. For instance, mercury is given in lb/mmBtu units.
The second and third tables are in lb/mmBtu units so that emissions can be compared between the fuels on a standardized basis.
The fourth table gives elements in units of concentration, either ppm or ppmw depending on the data available. I would assume that the data given in ppm is equivalent to ppmw.

2. Chlorine is on a dry basis, but it does not appear that any of the other pollutants are. What is the % moisture used for the other pollutants?

The numbers provided in this table are retrieved from EPA data. No % moisture is provided in those documents. For more information, see corresponding footnotes.

3. On the same table, footnote "aa" says "residual solids." Is this the NHSM material as-burned, or something else? Also, can they provide the "Summary of Chemical Analysis" spreadsheet referenced in this footnote?

This "Summary of Chemical Analysis" spreadsheet was provided in original correspondence. The spreadsheet is attached for your convenience. 'Residual solids' refers to the form of the NHSM as tested by the lab. (Washed pulp, composite, residual solids, etc...) It is the residual solids that will be burned.

4. Could you provide the moisture content in fuel product?

Please see Summary of Chemical Analysis spreadsheet with total moisture listed.
It is 65.1% moisture.

5. Could you provide the nitrogen and sulfur values for the finished product.

Please see Chemical Composition and Emissions Comparison Sheet. The NHSM is:
N-0.49% by wt.
S-0.05% by wt.

6. Could you provide the general composition of fermentate (paper, cardboard, enzyme used, tannins, etc.)? We are not looking for the chemical composition, but for more general information on what composes the fermentate.

The fermentate tested in 2010 was the same as Fiberight is processing now – MSW source biomass. Therefore the biomass composition would include some quantity of each of the following: cardboard, newspaper, card stock or chip board, cellulosic based packaging materials. Our enzymes used were provided by Novozymes and would have been C-Tech.

7. How much paper stock is in the skimmings from the DAF? Are the skimmings high in plastic? Are the skimmings similar to what comes off in a recycling process?

Plastics are not in the skimmings from the DAF, as most are separated from the pulp in the washing process and exit separately. The composition is approximately 60% fine cellulosic fibers and 40% ash (primarily calcium carbonate and bentonite or clay).

8. Could you please indicate if there is a buyer currently lined up and interested in purchasing the fuel generated from this process?

There is a buyer, but that entity would prefer to remain anonymous at this time. This entity uses solid fuel fired boilers for comfort heating for a large number of buildings.

Please let me know if you need additional information.

We appreciate your efforts in this matter.

Thank you,

Jenny L. Reinertsen, P.E.

Environmental Engineer

218-834-5872

218-830-1040

jreiner@frontiernet.net

Two Harbors, MN

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August 12, 2013

Don Toensing, Chief, Waste Enforcement and Materials
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Subject: Additional Information For The Fiberight Request For Feedback as To The Applicability Of 40 CFR Section 241.3 Which Allows That Some NHSM Are Non-wastes

Dear Mr. Toensing;

This letter is in response to your email dated August 5th, 2013. In it, you requested a comparison of the actual contaminant concentrations between other fuels and the fermentate produced in the Fiberight process. You also requested a more detailed description of the Fiberight processing of the “fermentate” that occurs after it is separated from the ethanol process.

First, Table 1 shows a comparison of the actual contaminant concentrations in the NHSM compared to coal and other relevant fuels. The elements in bold are considered hazardous air pollutants.

Table 1

Element Concentrations						
Pollutant ^{cc}- lb/mmBtu	Coal ppm	Oil ^v ppm	Wood ^w ppm	MSW ^x ppm dry	RDF ^{bb} ppm	NHSM ^{aa} ppm
Antimony^{cc}	nd	nd	26.00	13.30	<5.0	22.00
Arsenic^{cc}	7.60	0.306	6.80	6.90	~3.0	2.60
Barium	150.00	nd	nd	nd	nd	150.00
Beryllium^{cc}	0.99	0.027	nd	nd	~1.0	<0.2
Cadmium^{cc}	0.06	0.02	3.00	13.60	1.0-10.0	0.70
Chlorine	nd	131	2600.00	0.716 ^y	nd	0.58 ^z
Chromium, total^{cc}	22.00	0.31	130.00	94.60	50.0-250.0	39.00
Cobalt	3.90	1.63	24.00	46.70	nd	2.20
Copper	12.00	nd	nd	325.00	<1000.0	70.00
Fluorine	nd	17.5	300.00	0.014 ^y	nd	nd
Iron	140.00	nd	nd	752.70	nd	3100.00
Lead^{cc}	4.80	1.41	340.00	226.00	100.0-500.0	96.00
Manganese^{cc}	35.00	0.35	840.00	156.80	~250.0	59.00
Mercury^{cc}	0.22	0.0092	0.20	0.60	1.0-10.0	<0.3
Molybdenum	0.19	nd	nd	29.00	nd	2.00

Nickel^{cc}	9.40	26	540.00	59.60	10.0-100.0	20.00
Phosphorus	900.00	nd	nd	546.70	nd	1800.00
Potassium	0.00	nd	nd	nd	nd	470.00
Selenium^{cc}	1.50	0.095	2.00	nd	3.0-6.0	<0.5
Silver	nd	nd	nd	nd	nd	nd
Sodium	nd	nd	nd	nd	nd	370.00
Strontium	nd	nd	nd	nd	nd	nd
Tin	nd	nd	nd	0.10	~500.0	45.00
Titanium	nd	nd	nd	145.00	nd	84.00
Vanadium	nd	nd	nd	37.30	nd	39.00
Yttrium	5.90	nd	nd	nd	nd	nd
Zinc	11.00	nd	nd	306.30	300.0-800.0	260.00

v: Oil; Table d-8b. trace element concentrations in fuel oil (for 1994 estimates). (1994). Retrieved from <http://www.epa.gov/ttn/atw/combust/ultox/addendum.pdf>

w: Numbers are highest in range given, from: Contaminant concentrations in traditional fuels: Tables for comparison. (2011, November 29). Retrieved from http://www.epa.gov/wastes/nonhaz/define/pdfs/nhsm_cont_tf.pdf

x: Table 3.1 Elemental Composition of Bulk MSW, #'s mean of references. Municipal Solid Waste (MSW) to Liquid Fuel Synthesis, Volume 1: Availability of Feedstock and Technology. December, 2008. http://www.pnl.gov/main/publications/external/technical_reports/PNNL-18144.pdf

y: wt% daf

z: Chlorine content as a dry basis

aa: residual solids. Summary of Chemical Analysis spreadsheet.

bb: Zevenhoven. , & Kilpinen (2001, June 19). Chapter 8 trace elements, alkali metals. Retrieved from <http://users.abo.fi/rzevenho/tracalk.PDF>

cc: Pollutants noted (or compounds of) listed as Hazardous Air Pollutants (HAPs) in Section 112 of the U.S. Clean air Act (1970). (In Bold)

Secondly, a more detailed description of the processing of the “fermentate” that occurs after it is separated from the ethanol process follows;

Anaerobic digestion (AD) Feed Preparation System;

1. Hydrolysis solids removed in the Hydrolysis Centrifuge and Hydrolysis Filter, sludge from the wash system dissolved air flotation (DAF) sludge tank, stillage from the bottom of the beer stripper and sludge from AD plant are collected in the Dilution Tank (TK-9100).
2. This stillage is then centrifuged to remove the bulk of the solids. The concentrate, is sent to the high flow DAF Feed Tank (TK-9500) where it will be combined with the wash water system purges from the Regenex Filtrate Tank, White Water Tank and the filtrate from the Wet Cake Re-slurry Tank Belt Press (FB-9300).

3. The water from the high flow DAF feed tank is first passed through a DAF unit to reduce the suspended solids and then is sent through the Clarified Waste Water Filter Press (FP-9600) to further clarify the waste water prior to being sent to the AD plant.
4. Sludge from the DAF along with the wet cake from the stillage centrifuge is discharged to the Wet Cake Re-slurry Tank (TK-9300) to re-suspend the solids in a liquor that is low in COD. These re-slurried solids are directed to the Belt Press (FB-9300) to remove approximately 50% of the moisture.
5. The filtrate from the belt press is directed back to the high flow DAF feed tank to be reprocessed. The pressed cake from the belt press as well as filter cake from the clarified waste-water filter press is sent to a designated storage area.
6. The cake material will then be routed to a pellet mill where biomass fuel pellets will be made and subsequently dried and sold for biomass combustion. (Ref. "Scope Definition for Blairstown Renewable Energy Project at page 30 of 42, #3. AD Feed Preparation System", Fiberight, 4-2-2013.)

We hope that this answers your questions. If this description is confusing, or you would like any other information, please do not hesitate to contact me at jreiner@frontiernet.net or (218) 834 5872.

Regards,

Jenny L. Reinertsen, P.E.