ERIN M. VERNERIS. ESQ.

763.242.4412 (DIRECT)
EVERNERIS@DREXLERIPLAW.COM

April 19, 2019

Domenic Martinelli, City Planner
Commerce City Community Development
7887 East 60th Avenue
Commerce City, CO 80022

Re: Amended CUP Case #CU-121-19; Applicant A-1 Organics, Inc.

Dear Domenic:

In advance of the May 7, 2019 meeting of the Planning Commission where the above-referenced amended application for a conditional use permit by application A-1 Organics, Inc. ("A1 Organics") is scheduled to be heard, A1 Organics hereby submits the following supplemental materials for inclusion in the pre-meeting information packets provided to the Planning Commission.

The information set forth below and the attached materials (1) address specific concerns raised by members of the Planning Commission at the February 5, 2019 meeting when the Commission considered A1 Organics' then-pending CUP application and (2) supplement materials attached to A1 Organics' Brief in Support of Request for Conditional Use Permit, As Modified, and Request for Supplementation of Record ("Comprehensive Submission"), which is already part of the record.

Specifically, Section A below addresses A1 Organics' continued use of pile heights in excess of 8 feet during the pendency of its PUD and subsequent CUP application and the property owner's variance application before the Commerce City Zoning Board of Adjustment; Section B speaks to the effectiveness and appropriateness of A1 Organics' dust and mulch product migration mitigation efforts, as set forth in the written report of organic waste recycling expert Robert Rynk, Ph.D., attached as **Exhibit 1** hereto; Section C attaches updated daily site reports regarding wind monitoring and dust mitigation efforts; and Section D clarifies that when A1 Organics commenced this CUP application process on January 11, 2019, its then-pending PUD application was withdrawn.

A. A1 Organics' Continued Use of 8-Foot Pile Heights Was Expressly Sanctioned by Commerce City and Was Therefore Not Unlawful

As set forth in greater detail in A1 Organics' written submission in support of its amended CUP application (*see* Comprehensive Submission, pp. 7-11), A1 Organics commenced operations at the Monaco Greenwaste Facility in or about August 2015. Since as early as the fall of 2014, A1 Organics informed members of the Commerce City Planning Department, including Jared Draper and Public Works employee Patrick Buckley, orally and in writing that the pile heights at the facility would be 20 to 25 feet high. Given the 35-foot drop in elevation at the Monaco Street site and the City's stated interpretation of the 8-foot pile height regulation as being primarily concerned with sightlines, A1 Organics' use of 25-foot piles at the Monaco Street site was considered by the City to be compliant with the City's pile height regulation. Moreover, multiple subsequent inspections of the facility by the City confirmed this interpretation and understanding. However, in the summer of 2016, the City conducted a final inspection of the building constructed on the shared site by Brown Bros. Asphalt and Concrete. In connection with that inspection, the property owner of the Monaco Street site (Fiore & Sons, Inc., not A1 Organics) was notified that City personnel conducting the inspection (and re-interpreting the City's pile regulation to require measurement from the base of the pile instead of from the Monaco Street elevation) had determined that the mulch piles at the Monaco Greenwaste Facility were not compliant with the 8-foot regulation.

Thereafter, in the fall of 2016, Fiore & Sons, Inc. informed A1 Organics of the notice it had received as a result of the Brown Bros. inspection. At the Planning Department's suggestion, the property owner then sought a variance from the Zoning Board of Adjustment ("BOA") to address the predicament created by the new and alternative interpretation of the City's pile height regulation. On July 7, 2017, the BOA determined that it lacked jurisdiction to consider the variance request because it did not pertain to a "structure." To A1 Organics' understanding, BOA did not make a substantive determination, or denial, of the variance request. Rather, it decided that the request was not properly directed to it. In meetings prior to, and throughout the BOA process, Deputy City Manager Roger Tinklenberg confirmed to A1 Organics that per City policy related to like situations, the City would not pursue enforcement actions and A1 Organics could continue operating – as it had done since its inception at this site – with pile heights of up to 25 feet, pending the decision of the BOA, and subsequent to the BOA's decision related to their jurisdiction, completion of the PUD and then CUP process as recommended by the City.

After the BOA declined to decide the property owner's variance request on the merits, the property was sold to a new owner, and A1 Organics took the lead in addressing the issue. Thereafter, the Planning Department recommended that A1 Organics seek a PUD. The PUD application sought to rezone the property from I-2 to a Planned Unit Development, which would require the property to follow all the applicable standards for Industrial-2 development with the exception of allowing for stacking and piling outdoor mulch products up to 25 feet. The PUD application was filed by A1 Organics on November 2, 2017 and went through a lengthy Planning Department process of comment and revision. The PUD application was revised several times, reflecting site-specific suggestions by the DRT/Planning Department, including, among other things, increased setbacks and development of a written dust control and mitigation plan. Again, as with the variance application, the Deputy City Manager Roger Tinklenberg confirmed to A1 Organics that per City

policy it could continue operating with pile heights of up to 25 feet – as it had done since its inception at the site – throughout the pendency of the PUD application.

During the pendency of the PUD application, the City advised A1 Organics that there was a modification to City regulations under review which would permit pile heights up to 25 feet via Conditional Use Permit. The City Council adopted this change to regulations, in Ordinance 2154, in December 2018. This ordinance amended the 8-foot pile height regulation to expressly allow for pile heights of up to 25 feet for material piles such as construction aggregate and landscape materials in I-2 and I-3 zones, by way of a CUP application. Given this change, Roger Tinklenberg contacted A1 Organics and noted that the Planning Department was suggesting that A1 Organics pursue its pile-height request via CUP request versus the PUD process. Thus, on January 11, 2019, A1 Organics withdrew its pending PUD application, converting it to a CUP application. A recommendation of non-support of A1 Organics' original CUP application was made by the Planning Commission on February 5, 2019.

A1 Organics materially modified its CUP application by submission on March 22, 2019, and supported its modified CUP application via a written submission presented to City Council for its April 1, 2019 hearing. Recognizing that the CUP application before it included significant additional documentary support, the City Council remanded A1 Organics' modified CUP application to the Planning Commission for review and consideration.

At no point during any of the foregoing was A1 Organics given notice or direction by the City that it must cease using 25-foot piles at its Monaco Greenwaste Facility. On the contrary, A1 Organics has been repeatedly assured by the City that it could continue operating as is throughout the pendency of the various zoning and land use requests being pursued as recommended by the City, first by the property owner and then by A1 Organics, in an attempt to reconcile the change in the City's interpretation and application of the pile height standard to A1 Organics' operations at the Monaco Street site.

B. The Monaco Greenwaste Facility Is Configured and Operated to the Maximum Extent Feasible to Mitigate Adverse Impacts on Neighboring Properties

Attached hereto as **Exhibit 1** is the expert report of Robert Rynk, Ph.D., who has concluded that the practices and procedures implemented at the site, such as buffer zones, site watering and application of magnesium chloride, erection of an 8-foot screening fence on the boundary near residences, routine wind monitoring, cessation of operations based on sustained wind speeds and the use of 25-foot pile heights, all evidence best industry practices and effective dust and mulch product migration mitigation efforts.

C. A1 Organics Continues to Monitor and Document Site and Weather Conditions on a Daily Basis

Attached hereto as **Exhibit 2** are weekly reports (weeks of March 25, 2019, April 1, 2019 and April 8, 2019), reflecting daily logs maintained by A1 Organics and demonstrating its site and wind monitoring practices. This exhibit supplements the daily reports appended as Exhibit U to A1 Organics' Comprehensive Submission in support of is amended CUP application.

D. PUD Request #180913 Is Withdrawn

By this letter, A1 Organics confirms, for the sake of clarity, that its PUD request (#180913) was withdrawn upon A1 Organics' submittal of its January 11, 2019 CUP application, which application was amended on March 22, 2019.

We hope that the foregoing is helpful to the Planning Commission's review and consideration of the issues relevant to A1 Organics' amended CUP application.

Respectfully yours,

Erin M. Verneris

Exhibit 1

SUNY Cobleskill

April 16, 2019

Commerce City Planning Commission
7887 East 60th Avenue
Commerce City, CO 80022

Dear Planning Commission Members:

I am writing at A-1 Organics, Inc.'s ("A1 Organics") request regarding the company's efforts to obtain a conditional use permit at the Monaco Greenwaste Organic Recycling Facility in Commerce City. I was asked to review and comment about the site and operating practices at this facility. In particular, I was asked to review and comment on the pile dimensions and dust and mulch product management at the facility. My assessments and comments are summarized below.

First, please allow me to summarize my qualifications. My professional CV accompanies this letter for your reference. I have over 30 years of professional experience working in the composting and organics recycling fields. In this time, I have served as a consultant, expert witness, instructor, writer and editor. Currently, I am a Professor at SUNY Cobleskill College of Agriculture and Technology. I also co-teach the fundamentals of composting course for the U.S. Composting Council. In summary, I am deeply knowledgeable about the organics recycling industry, including the operations, site features, health and safety concerns and environmental impacts and mitigation efforts relevant to this industry.

Assessment and Comments:

1. **Appropriateness of the Site**

The Monaco Street location is an appropriate and well-situated site for the Facility's purpose and activities.

- The site is located in an area dominated by commercial and industrial enterprises that are compatible and similar in their impacts on their surroundings, including trucking and aggregate supply yards.
- In addition, horse stables and residences are located on the eastern boundary of the facility. Mature trees provide visual screens between the activities on the site and those few residences, and the facility itself maintains a 100-ft. buffer distance between the site boundary and activities on the site. A buffer zone of 500 ft. from the eastern boundary further insulates the properties to the East from any impacts of screening and grinding activities. In addition, both of these activity areas are intentionally sheltered by mulch piles on the side facing the residential neighbors.

EXHIBIT 1

- An elevation drop between the active sections of the site and Monaco Street shields the facility from view. The sight lines drawn on the facility diagram, which was part of my review, show that the tops of the mulch piles are at or below the level of Monaco Street.
- Although volume capacity data has not been provided, I have reviewed numerous diagrams and photographs of the site, taken while it has been in production. Based on this evidence, the site appears to be more than large enough to accommodate the scale of operation, including space set aside for wetlands, buffer zones and setbacks, vehicle movement and access for fire-fighting vehicles. The layout shows ample space for movement of equipment and allows flexibility in the locating of all materials at each stage of production – feedstock receiving and storage, grinding, screening, coloring and finished product storage. The layout is sensible, allowing efficient vehicle travel and water application for dust control.

2. Dust Mitigation

Windblown dust appears to be the primary concern regarding neighbor impacts. Dust is an inherent concern for natural resource industries that operate outdoors (e.g., lumber, aggregates, concrete, mulch, agriculture), but dust can be satisfactorily managed under normal weather conditions. A1 Organics' dust control practices, as set forth in the company's Dust Control and Mitigation Plan, reflect the industry's best practices for dust management. Unusual dust level conditions are monitored and controlled by state-level regulatory agencies.

- The site is largely surrounded by land uses that are not sensitive to dust, and some uses that are significant dust producers themselves, such as the sand and gravel quarry located at the site's southern boundary and directly adjacent to the Monaco Street facility. While the residences on the eastern boundary are an exception, vegetation, trees and buffer zones help to reduce dust impacts for those areas.
- The facility has adopted appropriate best practices for dust control, including wind monitoring, regular site watering, paved site roads, and application of magnesium chloride to road surfaces. A1 Organics' Dust Control and Mitigation Plan also includes a provision to stop all grinding and screening activities when the wind is sustained at 15 mph. This provision is conservative. In my experience, 15 mph is a relatively low trigger. Organic recyclers more commonly use a threshold of 30 mph as the criterion for ceasing operations in order to mitigate dust.

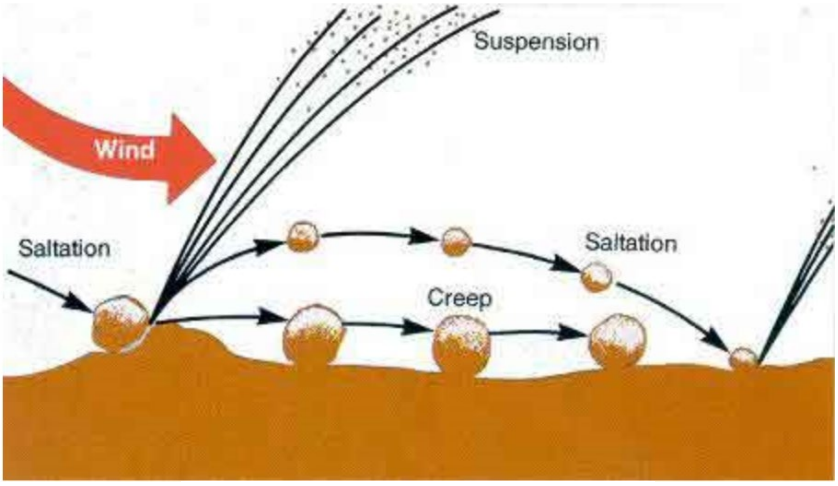
3. Mulch Product Migration

A perimeter barrier, such as the proposed 8-ft. "net" or screening fence, is an effective solution to prevent the migration of mulch products off-site.

- Mulch particles are generally too large, and sometimes too moist (e.g., after coloring), to become airborne. If they do migrate, mulch-sized particles tend to move along the ground due to their size and mass, rather than being carried aloft. Unusually high winds (e.g., greater than 40 mph) can still displace mulch. However, even then and as stated above,

windblown mulch tends to fall to the ground close to its origin. Thus, an 8-ft. screening barrier is an effective measure to prevent mulch from migrating off-site.

- As shown in the illustration below, wind erosion, which is the issue at hand, occurs in three modes – suspension (small particles in the air), saltation (less small bouncing particles) and creep (large particles rolling or sliding along the ground). Given their size, mulch particles are large enough to be subject to creep rather than suspension or saltation, making a screening fence an effective product containment tool. As for dust particles which may migrate in high wind conditions through suspension (shown below), routine site watering and wind monitoring appropriately address those impacts.



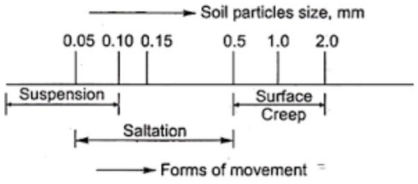


Fig. 7.4. Forms of soil movement depending on particles size

4. 25-ft. Pile Heights

The maximum pile height of 25 ft. maintained at the Monaco Greenwaste Facility is reasonable and justifiable. In fact, A1 Organics' use of 15-25-ft. piles at this facility is substantially more conservative, i.e., less vertical height, than the common practice throughout the mulch industry, where pile heights routinely exceed 25 feet.

- The Commerce City local land use regulations mandate pile heights of less than 8 ft. in elevation. From the documents that I reviewed, it is unclear to me whether the reference point for that restriction is the road level (i.e., Monaco Street) or the base of the pile. The regulation is silent on which measure to use. If pile heights were to be measured from the base of the pile, the regulation as applied would be unduly restrictive and would fail to account for the safety and industry-specific reasons that determine pile heights for mulch and soil enhancement products.

EXHIBIT 1

- It is common for mulch-processing facilities to create much taller (and wider) piles, as tall as 60 ft. The mulch industry typically works with tall piles because (i) the economic constraints of the industry, (ii) wood mulch tends to be sold or otherwise moved quickly, and (iii) wood mulch has a low odor risk. For perspective, the International Fire Code (IFC, Section 2808) permits individual wood mulch piles as large as 25 ft. high, 150 ft. wide and 250 ft. long. (It is not a mandatory nor universally adopted code.) Moreover, the 25 ft. pile height used as the Monaco Greenwaste Facility is suitable for short-cycle mulch piles, such as those managed on this site.
- If piles were limited to 8 ft. in height, A1 Organics would have difficulty operating on this site. Unlike in its current configuration, the site would become crowded with piles of mulch material. For example, a pile (or set of piles) holding 10,000 cubic yards requires about 2.5 times more space at an 8 ft. height compared to a 25 ft. height.
- An 8 ft. pile height limitation would only exacerbate the risk of dust migration. **Smaller piles produce more dust because they project a larger surface area than larger piles.** As shown in the calculation and illustration below, using the 10,000 cubic yard pile example, a pile that is 8 ft. in height has more than **twice** the exposed surface area as a 25 ft. high pile (see area highlighted in green). Dust and other airborne particles arise from exposed surfaces. A dust source with a greater surface area emits a greater dust load. Here, if 8 ft. piles were used at the Monaco site instead of pile heights up to 25 ft as requested by A1, it would double the exposed surface area and thus would double the risk of airborne particles. Also, smaller piles dry more quickly. Drier pile surfaces allow more particles to become air borne.

Free-Standing Trapezoidal Pile Dimensions Based on Assumed Volume, Base Width and Angle of Repose RR 4/10/2019

1. Manually input information in highlighted cells. All other cells are calculated.

2. These calculations are approximate because the ends of the tapezoidal pile are assumed to be vertical.

Assumed volume	10,000	Cu. Yards
	270,000	Cu. feet
Pile Height (ft.)	8	25
Base Width (ft.)	100	100
Assumed angle of repose (degrees)	45	45
Cross sectional area (sq. ft.)	232	725
Side slope (slant) length (ft.)	11	35
Top width (ft.)	84	50
Required length (ft.)	1164	372
Total surface area (sq. ft.)	**124,556**	**46,404**
% of 8 ft. high pile	*100%*	*37%*
Total footprint (sq. ft.)	**116,379**	**37,241**
% of 8 ft. high pile	*100%*	*32%*

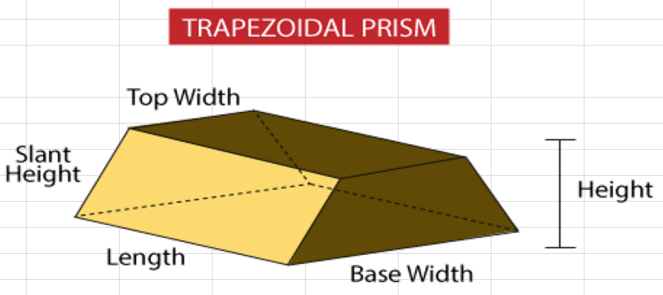


EXHIBIT 1

Conclusions:

A1 Organics' Monaco Greenwaste Facility is configured and operated to the maximum extent feasible to mitigate adverse impacts on neighboring properties. Practices and procedures implemented at the site, such as buffer zones, site watering and application of magnesium chloride, erection of an 8 ft. screening fence on the boundary near residences, routine wind monitoring, cessation of operations based on sustained wind speeds and the use of 25 ft. pile heights, all evidence best industry practices and effective dust and mulch product migration mitigation efforts.

Please feel free to contact me if you have questions or requests.

Sincerely,

Robert Rynk, P.E., Ph.D.
Professor
SUNY Cobleskill
106 CEST Building
Cobleskill, NY 12043
rynkrf@cobleskill.edu

EXHIBIT 1

ABBREVIATED CURRICULUM VITAE

Robert Rynk, P.E., Ph.D.
Professor, State University of New York, Cobleskill
rynkrf@cobleskill.edu
April 2019

PROFESSIONAL EXPERIENCE

Professor 2006 to Present

State University of New York (SUNY), Cobleskill, Department of Agricultural Engineering Technology, Cobleskill, NY

Duties include teaching, advising and service in agricultural engineering and environmental technology subjects including agricultural equipment, waste management, renewable energy and fundamental science and technology. Coordinator and principal faculty advisor for the Environmental and Energy Technologies Bachelor of Technology program.

Environmental and Agricultural Engineering Consultant 1999 to Present

Self employed, Emmaus, PA and Cobleskill, NY

Engineering consultant in environmental and agricultural engineering, specializing in composting, waste management and environmental protection. Projects involve technical consulting, editing and writing, environmental permitting, water management, and irrigation. Full time business from March 2004 through July 2006. Part time otherwise.

Senior Technical Editor, Special Projects Director, Executive Editor 1999 to 2004

The JG Press, Inc., Emmaus, PA

Technical editor for *BioCycle*, monthly magazine covering organic materials processing, recycling, renewable energy and residuals management. Executive editor of *Compost Science and Utilization*, quarterly peer-reviewed scientific journal. Director of special projects including national technical conferences and international symposiums, special reports, grant-funded projects, consulting services, and surveys.

Associate Professor and Extension Waste Management Specialist 1993 to 1999

University of Idaho, Department of Biological and Agricultural Engineering, Moscow, ID

Responsible for extension, research and teaching in subjects related to agriculture, natural resources and the environment. Emphasis of extension program: waste management and environmental protection concerning agriculture, food processing and municipal solid waste. Research emphasis: composting and other treatment processes for recycling of organic materials. Teaching emphasis: solid waste management, natural treatment technologies. Selected programs, projects and courses are listed in the following pages.

Engineering Consultant 1989 to 1993

Self employed, Shutesbury, MA

Engineering consultant in environmental and agricultural engineering, specializing in waste management, agriculture and horticulture. Projects involved technical writing, environmental permitting, facility design, technical advising, water management, and irrigation.

PROFESSIONAL EXPERIENCE -- CONTINUED

Extension Engineer 1981 - 1989.

University of Massachusetts, Food Engineering Department, Amherst, MA

General education and outreach in agricultural and environmental engineering topics including agricultural production, waste management, environmental protection, water quality, irrigation, greenhouse engineering, agricultural structures and environmental, and other engineering topics.

Industrial Engineer 1977-1979

Twin County Grocers, Edison, NJ. General Dynamics, Avenel, NJ.

EDUCATION

Ph.D. Food Engineering, with emphasis in biological and environmental engineering; 1992, University of Massachusetts.

M.S. Biological and Agricultural Engineering, with emphasis on greenhouse engineering, energy conversion and energy conservation; 1981, Rutgers University.

B.S. Industrial Engineering. B.A. Business Administration; 1977, Rutgers University.

MEMBERSHIP IN PROFESSIONAL AND SCHOLARLY ORGANIZATIONS

Registered Professional Engineer, Massachusetts

American Society of Agricultural and Biological Engineers (ASABE)

Editorial Board, Journal of Compost Science and Utilization

NYS Association for Reduction, Reuse and Recycling (NYSAR3)

U.S. Compost Council,
Board of Directors, 1999 to 2005
Co-chair, Legislative and Environmental Affairs Committee, 2003-2006
Chair, Bioreactor Landfill Subcommittee

Water Environment Federation (until 2001)

Association of Environmental Engineering and Science Professors (until 2001)

Northwest Biosolids Management Association (until 2000).

HONORS AND AWARDS

Outstanding Agronomic Educational Video – American Society of Agronomy. FOR: Compost. A Resource for Western Agriculture. November 2000.

Silver Award, Agriculture Communicators in Education (ACE). FOR: Composting at Home (40-page booklet). R. Rynk and M. Colt. March 1998.

Best Feature Article Award, Honorable Mention -- Journal of Soil and Water Conservation. FOR: Agricultural Composting in the United States - Trends and Driving Forces. R. Kashmanian and R. Rynk. Vol. 51, No. 3. May-June 1996.

American Society of Agricultural Engineers Blue Ribbon. Award for Extension Publications for On-Farm Composting Handbook. June 1993.

COLLEGE COURSES DEVELOPED AND/OR TAUGHT

Waste Management and Technology; SUNY, Cobleskill

Composting Principles and Applications; SUNY, Cobleskill

Biomass and Biowaste Energy Technology, SUNY, Cobleskill

Environmental Science and Technology, SUNY, Cobleskill

Alternative Energy Production Technology, SUNY, Cobleskill

Environmental and Energy Technology Seminar, SUNY, Cobleskill

Principles of Physics I and II; SUNY, Cobleskill

Equipment Testing and Development; SUNY, Cobleskill

Agricultural Structures and Equipment I and II; SUNY, Cobleskill

Agricultural Mechanics; SUNY, Cobleskill

Solid Waste Technology and Management; University of Idaho/Washington State University

Natural Systems for Wastewater Treatment and Water Quality Management (co-instructor); University of Idaho/Washington State University

Composting (co-instructor); University of Idaho/Washington State University

PROFESSIONAL TRAINING COURSES DEVELOPED AND/OR TAUGHT

Composting Operations. Co-Instructor. Sponsored by NYSAR3, Bethlehem, NY. September 2016.

Compost Operators 5-day Training Course. Principal Instructor in NY and curriculum co-developer. U.S. Composting Council. Taught sporadically in NY. (1) August 2016, Cobleskill; (2) August 2014, Ithaca; (3) August 2010, Cobleskill.

Food Waste Composting Workshop. Instructor. Iowa Waste Reduction Center, University of Northern Iowa, Cedar Rapids. August 2015.

Foundations of Composting Training Course. Co-instructor. Taught annually at the U. S Composting Council Annual Conference, annually 2005-2019. Various locations.

Massachusetts Composting Short-Course. Instructor. Massachusetts Dept. of Environmental Protection, Taught sporadically: (1) April 2014, Dudley, MA; (2) November 2010, Belchertown, MA; (3) March, 2008. Wrentham, MA.

Composting: The Practical Science (Recycling 201). Annual training program. Instructor. Professional Recyclers of Pennsylvania, 2003-2009

Advanced Composting (Recycling 220). Annual training program. Instructor. Professional Recyclers of Pennsylvania, 2003-2009

NY State Association of Reduction, Reuse and Recycling (NYSAR3). Composting Workshop Course, NYS Association of Recyclers Annual Conference, Cooperstown, NY November 14-15, 2007

Fundamentals of Composting and Facility Management, Inland Empire Utilities Agency, Chino, CA, October 2006

Composting and Vermicomposting Principles and Production, Perry Environmental, Ltd., Hamilton, New Zealand, May 2006

On-Farm and On-Site Composting, Compost, Queensland, Brookfield, Australia, April 2006

Fundamentals of Composting and Facility Management, Western Lake Superior Sanitary District, Duluth, MN, January 2006

SPECIAL SCHOLARLY AND PROFESSIONAL EDUCATIONAL PRODUCTS

The Future of Agricultural Composting: A Video Workshop. (Producer, script author) January 2000

Natural Wastewater Treatment Systems. CD-ROM: Manuscript and educational resources. S. Chen, T. Hess, R. Rynk, and A. Klenimer. July 1999

Compost: A Resource for Western Agriculture, January 1999. AND Composting: A Tool for Western Agriculture, November 1998. Satellite workshops and videos. (Producer and script writer)

SELECTED RESEARCH PROJECTS

Heat Recovery from Composting. On-going since 2013.

Spontaneous Combustion in Bulk Organic Materials. On-going since 2000

Effect of Maturity on the Performance of Compost as a Bedding Material for Dairy Cattle. 2007

Comprehensive Compost Odor Response Project, 2004 - 2006

Bunker Hill Mine Remediation and Ecological Restoration Using Organic Residuals, 1997 - 1999

Vermiculture and Composting - Beneficial Practices for Managing Aquaculture Wastes, 1994 -1997

Managing Food and Agricultural Residues via Composting. 1994 -1999

Composting Sugarbeet Tare Dirt to Control Nematodes. 1993 - 1999

Evaluation of Structured Paper as an Amendment for Composting Biosolids. 1993 - 1995

Development of an Expert System Computer Program for Automatic Control of a Forced-Aeration Composting System. 1989-1991

Conversion of Obsolete Potato Harvesting Equipment to Turn Composting Windrows. 1989

Development of a Greenhouse Soil Cooling System for Specialty Cut Flower Production. 1987

Analysis of Energy Inputs and Outputs for a Solar-Assisted Shellfish Hatchery. 1985

Development of an Inexpensive Heat Exchanger for Heating Greenhouses with Water from a Low-Temperature Heat Source (solar or waste heat). 1980 – 1981

SELECTED PUBLICATIONS -- *where no authors are listed. R. Rynk is the sole author*.

BOOKS AND PROCEEDINGS:

The Composting Handbook (working title). R. Rynk et al. (editor and lead author). Plant and Life Sciences Publishing, Ithaca, NY. Expected 2019. Pending final editing.

Irrigation, Sixth Edition (contributing editor). L.E. Stetson and B. Q. Mecham (principle editors). The Irrigation Association. Falls Church, VA. 2011.

Proceedings of the 2002 International Symposium, Composting and Compost Utilization. F.C. Michel, R. Rynk, and H.A.J. Hoitink. (eds.). JG Press, Inc. Emmaus, PA. 2002.

Commercial Compost Production Systems. R. Rynk and T. Richard. Chapter in: Compost Utilization in Horticultural Cropping Systems. P.J. Stoffella and B.A. Kahn (eds.) CRC Press. 2001

On-Farm Composting Handbook. R. Rynk et al. (editor and lead author). Northeast Regional Agricultural Engineering Service, Ithaca, NY. 1992

SELECTED PUBLICATIONS -- CONTINUED

REFEREED JOURNAL ARTICLES:

Heat Recovery from Composting – A Comprehensive Literature Review. M.M. Smith, J.D. Aber, and R. Rynk. Compost Science and Utilization. Pending publication. 2016.

Mitigation of Odor-causing Emissions—Bench Scale Investigation. F. Buyuksonmez, R. Rynk, A. Yucel and M. Cotton. Jrnl. of the Air, Water and Waste Management. 62:12, 1423-1430. Nov. 2012.

Self-Heating in Yard Wastes: Conditions Leading to Spontaneous Combustion. R. Buggeln and R. Rynk. Compost Science and Utilization. 10 (2). 2002

Occurrence, Degradation and Fate of Pesticides during Composting, Part I. F. Büyüksönmez, R. Rynk, T. Hess, and E. Bechinski. Compost Science and Utilization. 7(4). 1999

Occurrence, Degradation and Fate of Pesticides during Composting, Part II. F. Büyüksönmez, R. Rynk, T. Hess, and E. Bechinski. Compost Science and Utilization. 8 (1). 2000

Creating Positive Incentives for Agricultural Composting. R. Kashmanian and R. Rynk. American Journal of Alternative Agriculture. 13 (1). 1998

Agricultural Composting in the United States - Trends and Driving Forces. R. Kashmanian and R. Rynk. Journal of Soil and Water Conservation. 51(3). 1996

MANUSCRIPTS IN REFEREED CONFERENCE PROCEEDINGS (MANUSCRIPT REVIEWED):

Heat Recovery from Composting – A Comprehensive and Contemporary Literature Review. M.M. Smith, J.D. Aber, and R. Rynk. Proceedings of the 2015 International Composting Conference. Beijing, China. 2015.

Role of Composting in Environmental, Soil and Plant Health Management. H.A.J. Hoitink, R. Rynk, and F.C. Michel. 2002 International Symposium, Composting and Compost Utilization. Columbus, OH. 2002

Agricultural Composting in the United States - Trends and Driving Forces. R. Kashmanian and R. Rynk. International Symposium on the Science of Composting. Bologna, Italy. June 1995

PROFESSIONAL REPORTS, GUIDELINES AND HANDBOOKS:

An Investigation of Clopyralid and Aminopyralid in Composting Systems. E.J. Gilbert, J. Barth, E. Favoino and R. Rynk. Waste Resource Action Programme (WRAP), Banbury, UK, 2009

Generation, Measurement and Mitigation of Odors from Composting Facilities. California Integrated Waste Management Board. 2006

Evaluation of the Likelihood and Risks of BSE in Food Residuals and Food Residuals Compost. City of Portland Office of Sustainable Development. 2003

Managing Nitrogen from Biosolids. (contributing author) Northwest Regional Guidelines and Biosolids User's Manual. Northwest Biosolids Management Association. 1999

Idaho Waste Management Guidelines for Aquaculture Operations. (contributing author) Idaho Department of Environmental Quality. 1998

Biosolids and Septage Handling and Use in Idaho. University of Idaho Cooperative Extension System. May 1997

POPULAR ARTICLES, FACT SHEETS, BOOKLETS AND NOTEBOOKS

Fires in mulch piles – Advice and experience from the industry. Amerimulch Quarterly Newsletter. Spring 2009.

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Exhibit 2

Daily Report: Kevan Northup week of March 25th 2019

A1 Monaco Site.

March 25th - See the Monaco Wind and Temp report for the day.

Painting and Screening ops today. No dust is blowing off any operations today.

The site was watered three times today, with truck traffic on the east side of the site.

3:00 PM - end of shift and equipment cleanup has begun.

11 large truck, 3 pickups were loaded on the east side of the site with mulch today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

March 26th - See the Monaco wind and Temp report for the day.

The site was watered twice today on the east side.

Painting ops today, no dust was coming off of the painting ops at all today due to wet material being painted and added water to the painting operations.

Grindings on site today. The water tanker was connected to the grinder and water was ran into the operations at all times the grinder was operating. The grinding operation was shut down while the tanker watered the east side of the site.

4:30 PM - end of shift and equipment cleanup has begun.

12 trucks and 4 pickups were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

March 27th - See the Monaco Wind and Temp report for the day.

The site was watered on the east side of the site today.

Painting ops today, no dust was coming off of the painting ops at all today due to wet material being painted and added water to the painting operations.

Grindings on site today. The water tanker was connected to the grinder and water was ran into the operations at all times the grinder was operating. The grinding operation was shut down while the tanker watered the east side of the site.

4:30--end of shift and clean up has begun.

2 pickups were loaded on the east side of the site with mulch or soils today. . No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

EXHIBIT 2

March 28th– See the Monaco Wind and Temp report for the day

Screening GW and no material is blowing away from the stackers all day. Grindings on site today. The water tanker was connected to the grinder and water was ran into the operations at all times the grinder was operating. The grinding operation was shut down while the tanker watered the east side of the site.

No painting operations today.

4:30 PM - end of shift and equipment cleanup has begun

11 trucks or trailers and 2 pickups were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

March 29th– See the Monaco Wind and Temp report for the day

Grinding on site today. Water truck is hooked up to the grinder and no dust is coming off the grinder or any other place on site today.

Site has rain falling and the roads were wet when we got on site at 5:45. No site watering today.

4:30 PM - end of shift and equipment cleanup has begun

4 pickup trucks or trailers were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

No Saturday operations

Daily Report: Kevan Northup week of April 1st 2019

A1 Monaco Site.

April 1st - See the Monaco Wind and Temp report for the day.

Painting and Screening ops today. No dust was blowing off any operations today.

The site was watered two times today, with truck traffic on the east side of the site.

4:30 PM - end of shift and equipment cleanup has begun.

12 large truck, 2 pickups were loaded on the east side of the site with mulch today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 2nd - See the Monaco wind and Temp report for the day.

The site was watered three times today because of the number of vehicles on the east side of the site picking up material.

Painting ops today, no dust was coming off of the painting ops at all today due to wet material being painted and added water to the painting operations.

Grindings on site today. The water tanker was connected to the grinder and water was ran into the operations at all times the grinder was operating.

Screening ops- no dust was blowing any in direction during all operations from the stackers or screener today.

4:30 PM - end of shift and equipment cleanup has begun.

10 trucks and 10 pickups were loaded on the east side of the site with mulch or soils today. 2 large trucks were loaded on the east side of the site today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 3rd - See the Monaco Wind and Temp report for the day.

The entire site was watered today two times for dust control.

Limited painting ops today, no dust was coming off of the painting ops at all today due to wet material being painted and added water to the painting operations.

Grindings on site today. The water tanker was connected to the grinder and water was ran into the operations at all times the grinder was operating. The grinding operation was shut down while the tanker watered the east side of the site.

5:00--end of shift and clean up has begun.

15 large trucks and no pickups were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 4th– See the Monaco Wind and Temp report for the day

The water tanker was connected to the grinder and water was ran into the operations at all times the grinder was operating today. The grinding operation was shut down while the tanker watered the east side of the site during the early afternoon today.

Screening operations- no dust was blowing any in direction during all operations from the stackers or screener today.

Only painted today during the morning hours. Water is added to the painting ops and no dust came off the painting ops at all today.

4:30 PM - end of shift and equipment cleanup has begun

12 trucks or trailers and 2 pickups were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 5th– See the Monaco Wind and Temp report for the day

Grinding was on site today; the operator had the day off so no grinding ops today.

The site was watered two times today.

4:30 PM - end of shift and equipment cleanup has begun

12 large trucks or trailers and 6 pickup trucks were loaded on the east side of the site with mulch or soils today. 5 large trucks were loaded on the far west side of the site today.

No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 6th.

No grinding operations today.

Screening and painting ops today only. Water was added to the painting ops and the screening ops had no dust blowing from the stackers or the screener today.

The site was not watered and the gates were closed and locked so no trucks or other vehicle traffic today. Only limited operation today

5:00 am end of shift site clean.

Daily Report: Kevan Northup week of April 8th 2019

A1 Monaco Site

April 8th - See the Monaco Wind and Temp report for the day.

Painting and Screening ops today. No dust was blowing off any operations this morning.

The site was watered once in the morning and once in the afternoon.

Shut down screening ops at 2:30 pm due to wind. There was not material blowing more than 10' from the screening ops when I shut it down.

The wind was not blowing the heavy wet material from the stackers during any of the painting ops today.

Grinding ops were also shut off at 2:30. The water tanker was connected to the grinding ops at all times it was in operations. No material blew away from the stackers at any time during the operations.

4:00 PM - end of shift and equipment cleanup has begun.

2 large truck, 6 pickups were loaded on the east side of the site with mulch today. 4 large trucks were loaded on the far west side of the site and never drove on the east side today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 9th - See the Monaco wind and Temp report for the day.

The site was watered three times today because of dry conditions on the east side of the site.

No painting ops today.

No Grindings ops on site today.

Screening ops- no dust was blowing any in direction during all operations from the stackers or screener today.

4:00 PM - end of shift and equipment cleanup has begun.

10 trucks and 1 pickup were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 10th - See the Monaco Wind and Temp report for the day.

It is raining today on site so the site will not be watered.

Because of high winds and weather conditions on site there will be no production ops on site today. Maintenance on equipment and the site.

The grinder is off site as of this morning.

EXHIBIT 2

3:00--end of shift and clean up has begun.

13 large trucks and no pickups were loaded on the east side of the site with mulch or soils today. 10 trucks were loaded on the far west side of the site today, and none of them drove on the east side of the site at any time. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 11th– See the Monaco Wind and Temp report for the day

The site has standing water in places and the rest is wet from snow and rain. The site will not be watered today.

Screening operations- no dust was blowing any in direction during all operations from the stackers or screener today. In part, because the material being screened is wet and the wind is not blowing.

No painting or grinding ops today.

4:30 PM - end of shift and equipment cleanup has begun

4 large trucks or trailers and no pickups were loaded on the east side of the site with mulch or soils today. No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 12th– See the Monaco Wind and Temp report for the day

The site is still wet from the storm on Wed so it will not be watered today.

Screening ops today with no wind conditions that shut it off and no dust or material was blowing away from the stackers or the screener today. The material being screened is still wet from the storm.

4:30 PM - end of shift and equipment cleanup has begun

13 large trucks or trailers and 4 pickup trucks were loaded on the east side of the site with mulch or soils today. 5 large trucks were loaded on the far west side of the site today.

No tipping customers drove on the east side of the site, all were diverted to the far west side via the main road coming from the office trailer going west.

April 13th

No grinding or painting operations today.

Screening ops today only. The wind was not blowing any material or dust away from the stacker or the screener today, and the material was still wet from the storm this week.

The site was closed to all customers only screening operations today. So, no trucks were loaded.

The site was not watered and the gates were closed and locked so no trucks or other vehicle traffic today. Only limited operation today

12:00 noon- end of shift site clean.