Guidelines for Organic Certification of Maple Sap & Syrup

The Vermont Organic Farmers LLC (VOF) guidelines for maple production must be in compliance with the USDA National Organic Program Standards (7 CFR Part 205). In addition, the guidelines are drawn from those practices established in the Vermont State law (6 V.S.A. Chapter 32); the Vermont Department of Agriculture Maple Quality Control Manual; Forest Management and Tapping Guidelines by the Department of Forests, Parks and Recreation; Joint Statement of the North American Maple Syrup Council and the International Maple Syrup Institute on Organic Production of Pure Maple Syrup and from the knowledge and practices developed by organic sugarmakers.

I. INTRODUCTION

All organic maple sap and syrup producers must be familiar with the general requirements of the USDA National Organic Program (NOP). Please contact the VOF office if you do not have a copy of these standards or visit www.ams.usda.gov/nop. The following maple guidelines provide additional information for determining what practices are compliant with the national standards. In addition, producers should make sure they are compliant with Vermont State laws governing the production and labeling of Vermont Maple Syrup.

NOP Section 205.2 defines organic production as, "A production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity."

Organic maple sap and syrup production is defined by the following:

1) Cultural practices designed to maintain tree health and ensure long-term preservation of the sugarbush as an ecosystem;
2) The prohibition of synthetic materials added at various stages of management and production unless allowed on the National List of Allowed and Prohibited Substances NOP Sections 205.601-602 and 205.605-606.

II. PRODUCTION STANDARDS

All Guidelines are subject to existing Federal, State, and local food handling and sanitation requirements.

A. Sugarbush Management

Organic producers shall take the necessary steps to protect the sugarbush ecosystem. Ideally organic maple sap production should come from a diverse ecosystem and not from a pure maple monoculture. "...Under most circumstances, the creation of a pure maple monoculture is not desirable, as the presence of other species contributes to diversity, increases nutrient cycling, reduces spread of insects and diseases" (p.35 North American Maple Syrup Producer's Manual). However, this diversity may depend on the natural community that the stand starts out as, and it is recognized that due to current, past management, and natural disturbance, many sugar makers have forests and stands with less than the ideal diversity and age distribution of trees. If producers have a sugar maple monoculture and/or even age stand, the forest management plan(s) will need to address diversification of species and regeneration. In addition, "Forest biological diversity is a broad term that refers to all the life forms found within forested areas and the ecological roles they perform. As such, forest biological diversity encompasses not just trees but the multitude of plants, animals and microorganisms that inhabit forest areas and their associated genetic diversity." (D Lindemeyer and J Franklin, Conserving Forest Biodiversity. 2002)

For certification purposes, VOF defines a "sugarbush" as a property that:

- is used for maple sap collection,
- is comprised of one or more contiguous stands as described in a forest management plan that meets the Vermont State Use Value Appraisal (UVA) Forest Management Plan Template and Sugarbush Management Standards for the UVA Program dated October 8, 2014,
- includes one or more "sap collection zones"

  ✔ A "sap collection zone" refers to a group of red and sugar maple trees whose sap is collected by a conductor, single mainline or a collection of mainlines that drains into a single sap storage tank.
- has one physical address or can be referred to by one physical address.

B. Certification Requirements

1) In order to be certified, no synthetic fertilizers, herbicides or pesticides or other synthetic substances not on the National List shall have been applied to the production area (sugarbush) in the 3 years preceding harvest of an organic crop.

2) A written forest management plan is required for each property used for maple sap collection. Forest management plans must meet all components and practices as required by the Vermont State Use Value Appraisal (UVA) Forest Management Plan Template and Sugarbush Management Standards for the UVA Program dated October 8, 2014 and must bear the signatures of the preparer (for example, consulting forester), land owner and county forester. Forest management plans written before March 1, 2016 must include components and practices as required by the Sugarbush Management Standards for the UVA Program dated October 8, 2014 when amended or when they expire. UVA requires

that active management take place based on the current conditions of the stand. Applicants with properties not enrolled in UVA program must still meet the above requirements but should call the VOF office to discuss the county forester signature requirement. Plans expire after 10 years based on the date the forest inventory data was collected. In order to keep their certification in good standing, producers need to submit an updated plan with current data. When a plan is amended less than 10 years after the forest inventory data was collected, a copy of the amended plan with new signatures from the preparer (for example, consulting forester), land owner and county forester will be required.

3) In addition to UVA plan components VOF requires the following management practices. A written description of how these management practices will be met must be included in the forest management plan or in a separate addendum. A checklist to assist landowners and consulting foresters draft forest management plans and addendums that are compliant with these guidelines is available upon request from the VOF office.

    a. Species Diversity: Producers must describe in their forest management plans how forest diversity will be maintained or achieved.

    b. Ecologically Sensitive Areas: Ecologically sensitive areas, if present, must be identified in the plan and shall be protected.

    c. Wildlife Habitat: Habitat for wildlife species, including amphibians, birds, aquatic life and mammals, must be addressed in the plan. The plan may address problems such as deer overpopulation as well as preservation or improvement of habitat for rare or endangered species.

    d. Invasive Species: If the producer decides that control of invasive species is needed, a description of methods used must be included in the plan and must be done without the use of any prohibited herbicides.

    e. Multiple Age Classes: Producers must describe in their forest management plans how the recruitment or retention of multiple age classes will be achieved. In forests with pre-existing even aged stands of maple trees, a plan to convert the stand to multiple age class management is required. This conversion may be carried out within a time frame appropriate for the site. For example, a series of crop tree release, improvement cuts and/or selection harvests with a rotation age of 150 years could be an appropriate timeline (see Appendix for limits on basal area reduction). In addition, for even age stands, information on why the stand is currently even aged must be included in the plan (for example, grazing in previous years, previous forest management, natural events).

f. Thinning Practice/Harvest Techniques: Whole tree harvest (a form of logging in which entire trees with intact branches and crowns, are removed from the sugarbush) is prohibited in any stand that has tapped trees or has trees that will be tapped within the timeframe of the current forest management plan. Leaving crowns, branches, trees and coarse woody debris smaller than 3 inches in diameter in the forest improves the recycling of biomass, nutrient cycling, and wildlife habitat. Material smaller than 3 inches in diameter must be left in the woods and cannot be removed at a landing and returned to the woods.

   Deviation from this standard could result in the loss of certification. No whole tree harvest techniques shall be used for a period of 3 years immediately preceding harvest of the organic crop.

g. Residual Stand Damage
   - During thinning or harvest, damage to remaining trees must be minimized or avoided.
   - Trees with 20% or more harvest-imposed damage must not be considered acceptable growing stock, and must not be counted in the residual basal area.
   - Since the roots of maples are close to the soil surface, producers must avoid passing with their machinery too frequently during and outside the production season.
   - Any trees or areas of forest with significant root damage or soil disturbance must not be considered acceptable growing stock, and must not be counted in the residual basal area.

h. Forest Soil & Roads
   - The number of roads must be kept to a minimum and located so as to minimize damage to roots from soil compaction. However in areas where roads are required, they must be maintained in a manner that prevents soil erosion. For example, this may include ditching, water bars, or maintaining vegetative cover.
   - It is recognized that ruts may form in regularly used forest roads (such as main forest roads used daily for access to the sugarbush or sap collecting stations) during sugaring. However producers must manage those areas to prevent soil movement. Examples include bringing in stone or other material, constructing water bars or ditching.
   - Minimize soil compaction by keeping travel with heavy equipment in the forest to a minimum.

- If a producer chooses to use fertilizer inputs, fertilization applications shall be in accordance with requirements based on observed and diagnosed deficiencies. Lime and other non-synthetic fertilizers are allowed. Contact the VOF office for a complete list of accepted inputs.
- Water quality must be maintained or improved. Silting/ Sedimentation of streams must be prevented.
- If parts of the sugarbush are going to be grazed this practice must be addressed in the forest management plan to ensure no long-term damage to the sugarbush will occur.

i. For the long-term health of the tree, research indicates that it is best to distribute tap holes around the entire circumference of the tree rather than placing tap holes in close proximity for multiple years. Because of this, producers often mark a spot adjacent to a current tap hole with substances such as lumber crayons/markers to avoid tapping in the same location the following year. Similarly, for the long-term health of the forest and identification and integrity of sugarbush boundaries, lumber crayons/markers are used on tapped trees to identify boundaries or cull trees. VOF allows lumber crayons/markers provided that; 1) the material used to mark tap holes is applied in such a way that it will not come into contact with sap, syrup or soil, 2) the minimum amount required is used, and 3) the purpose of marking trees is to ensure their long-term health and management.

4) Maps of each sugarbush must contain the following information:

a) Location of sugarhouse, collection tanks
b) Adjoining land use (hay, forest, corn…)
c) Location and acreage of all stands described in the forest management plan
d) Number of acres
e) Major roads and physical features
f) Identification of all areas in the stands where trees are tapped or are planned to be tapped within the time frame of their forest management plan. Stands are defined as homogenous areas (soil type, species, age structure) managed with the same techniques.
g) Identify major sap collection zones showing how the sap gets to a single releaser, collection tank or point. Mainline locations are not required.

Features not on the map included with the forest management plan drafted by the consulting forester can be added to the map or an overlay by the producer.

5) On rented land, a long-term lease or contract is recommended. Organic producers must be able to provide documentation that verifies that they have co-management rights to the leased or rented property and that the property in question will be under continuous organic management for the duration of the contract.

6) All producers seeking certification (new or continuing) must submit an annual Organic Systems Plan (OSP), pay an annual certification fee and have an on-site inspection that occurs during the sugaring season (typically between mid-January and the end of April). The National Organic Program requires that all production facilities and sugarbushes under a certified organic producer's management be inspected annually. A supplemental certification fee may be charged for any applicant who requires additional work by the Review Committee or inspector. Conditions that may require a supplemental fee are as follows: a certification inspection visit that takes longer than 4 hours, an additional audit trail review of a farm or processing application, out-of-state travel, a repeat inspection visit to gather new information or to inspect another part of the farming operation (e.g. all sugarbushes under a producer's management), or inspection of a farmer/processor whose facilities are in different locations. Supplemental work is not included in the initial certification fee and will be charged at cost (inspector's salary and travel), plus an administrative fee.

7) In addition to the annual certification inspection, some VOF certified maple producers will receive a summer forest inspection to verify if they are complying with a VOF approved forest management plan. These summer inspections will be randomly selected and VOF will incur the costs of all unannounced inspections.

C. Invertebrate and Vertebrate Pest Management

All relevant production practices should take pest prevention into consideration. Growers must use management practices to prevent pest problems. Once prevention fails, methods of control having the lowest ecological impact should be the first choice. Although "natural" insecticides are widely accepted as organic because of their natural origin and swift decomposition, when overused they pose a danger to soil organisms, beneficial insects and wildlife, as well as to humans using them. All pesticides, no matter how they are derived, should be handled with caution and used only in accordance with the labeled instructions and Vermont State Law.

Accepted

- Use of mechanical controls such as traps, lures, barriers and sound.
- Biological controls such as release of natural predators and parasites and providing habitat for natural predators
- Microbial and viral diseases, provided no petroleum-based synergists or carriers are used, if the inert ingredients are disclosed and contain only accepted ingredients.
- Habitat modification to discourage vertebrate pests

- Shooting of mammals and birds in accordance with VT state law ▪ Physical barriers such as fences, netting, etc.
- Bacillus thuringiensis (BT) for forest tent caterpillar if all ingredients (including inerts) are approved

Only when the above practices are insufficient, a producer may use a biological or botanical substances or a synthetic substance from the National List. Many "natural" insecticides are prohibited due to synthetic inert ingredients. Please refer to VOF's Product List for Organic Crop Production.

Prohibited

- Pesticides containing prohibited substances.
- Bacillus thuringiensis (BT) for forest tent caterpillar with prohibited inert ingredients

For pest control management in the sugarhouse and other facilities where organic product is handled or stored, management activities must be described in the application and must include exclusion/prevention of pests, good sanitation, and restriction of habitats for pests. Pest logs describing where and when pesticides are used are required for producers who use synthetic controls. Ongoing monitoring and inspection should be performed in the facility to determine the presence and degree of activity of any insect or rodent pests. If a processor does use a synthetic or non-synthetic substance to control pests, this must be listed in their application, including all measures taken to prevent contact of the substance with organic products or ingredients. If measures taken to prevent pests have failed, and if non-synthetic controls and substances from the National List are also not able to prevent or control pests, a synthetic substance not on the National List may be used provided that the producer and VOF agree on the substance, method of application and measures being taken to prevent contact with the organic product. In the case of fogging and broad surface treatments, organic product must not be contaminated. All food contact surfaces must be covered or otherwise protected from contamination.

D. Tapping Management

Spout placement and techniques used to place the spout must not be done in such a way that compromises the health of the tree. Spouts must be distributed on the trunk following guidelines below.

1) It is important to allow long enough dropline lengths (recommend 36"-40") to allow vertical staggering as well as horizontal offsetting of new tap holes. Dropline length should not be less than 24".
2) The number of spouts per tree must be based on the diameter of the tree measured at breast height when there is no snow on the ground. Two tapping guidelines exist based on type and size of spout used. They both presume that trees are healthy and capable of growing 1/8" of

new wood annually measured at the outside growth rings. The Appendix references the UVA Tapping Guidelines, which are the same but are described using a 2inch diameter class (For example 10" diameter = 9.0" to 10.9" and 12" diameter = 11.0" to 12.9"). The table below shows the actual minimum diameters.

	Standard Spout (3/16"- 5/16") or smaller	*Large Spout (7/16")*
0 spouts	Less than 9" diameter (less than 28" circumference)	Less than 11" diameter (less than 34" circumference)
1 spout	9-14.9" diameter (28"-47" circumference)	11-18.9" diameter (34"-60" circumference)
2 spouts	15-20.9" diameter (47"-66" circumference)	19" & over, diameter (60" & over circumference)
3 spouts	21" & over, diameter (66" & over circumference)	Prohibited
4+ spouts	Prohibited	Prohibited

It is understood that there will be some deviation from the above table due to human error. More than 10% deviation will be considered deliberate and may result in a noncompliance.

3) The depth of the tap hole shall be no more than 2.5 inches from the surface of the bark.
4) Retapping a previously tapped tree during the same season (double tapping) or reaming (freshening the tap hole) is not permitted.
5) Leaving spouts in trees at the end of the tapping season (60 days after end of sap flow) is not permitted.
6) Trees should not have taps in them during the growing season. This is to maximize the ability of the tree to heal tap holes and maximize carbohydrate reserves. Because of this concern, taps shall only be set in the winter months, not before December 1st. VOF will accept proposals and may offer exemptions to this guidance on a case-by-case basis.
7) The use of synthetic fungicides, antibiotics, fumigants, sterilants, etc. in contact with trees is prohibited.
8) Single use spouts, even when biodegradable, must be removed from the forest when spouts are removed.
9) When replacing pipelines and droplines, old material must be removed from the forest within two seasons. This allows for producers to remove old material in two steps by taking down old lines the first year and removing all old lines in the second year. Producers are encouraged to recycle all plastic materials. Contact the Agency of Agriculture for more information.
10) For our purposes, a tree is defined as a woody plant with an erect, perennial stem that can reach a size of at least 9.5 inches in circumference at a point 4.5 feet above ground; has a

well-defined crown of foliage; and can reach a total vertical height of at least 13 feet (adapted from Little, 1979).

E. Production Equipment, Methods, and Syrup Storage

Sap Collection and Storage Equipment:

Accepted:

- Use of metal and plastic spouts and seals and plastic tubing.
- Wire used to hang mainline must be kept from damaging the trees it is attached to or that support it. Use of nails or bolts must be kept to a minimum and considered as a "spout" if used in an allowable maple tree in the year that the nail or bolt is put in the tree.
- Stainless steel or food grade poly collection tanks (covered if outdoors)
- Vacuum systems maintained to not leak prohibited substances onto the ground, water or sap.
- If a generator or other gasoline or diesel engine is run in the same room that sap is stored in, then the exhaust must be vented to the outside.
- Existing galvanized buckets provided that producers submit annual lead tests. Producers must purchase non-galvanized buckets for replacement purposes. Stainless steel buckets and equipment are encouraged.
- Food grade plastic buckets and bags are permitted.
- All new equipment must have lead- free solder to prevent lead contamination. The intention of all producers should be to move away from equipment (especially pans where the sap is cooked) that contains any lead. Producers that have equipment that may contain lead must submit annual lead tests. For example, bronze gear pump, uncertified brass fittings, copper preheaters, etc.

Prohibited:

- Sap storage tanks must either be inside or covered (dome tanks are considered covered). If sap storage tanks are inside there must be no risk of contamination from prohibited substances (exposed insulation, exposed light bulbs without light bulb guards, etc.).
- Synthetic fungicides, antibiotics, fumigants, sterilants, etc. not on the National List are not allowed in contact with trees. As new technology becomes available it is up to the producer to make sure that new equipment does not contain prohibited materials (i.e. fungicides, antibiotics, fumigants, sterilizers, etc.).
- All galvanized equipment that comes in contact with sap or syrup is prohibited, with the exemption of existing galvanized buckets (see above).
- All plastic that comes in contact with sap or syrup must be food grade (suitable for collecting, containing or storing potable water). Please note that sewer pipe (often green) is not food grade. This is required by the State of Vermont in Title 6 Chapter 32 Section 494 e-l.
- Bronze sap pumps are prohibited.

- Producers shall not use lumber treated with arsenate or other prohibited substances in places that will come in direct contact with soil or livestock. The National Organic Program is currently finalizing their interpretation of the use of treated lumber in organic production. Until their draft guidance is finalized, VOF will allow the following uses of treated lumber: Treated lumber cannot come into contact with tapped trees or sap but can be used to support infrastructure (holding up mainlines/tubing), or other instances that are considered "isolated from production (sheds to house vacuum pumps/sap tanks. etc.)."

Sap Filtration and Reverse Osmosis Equipment:

Accepted:

- Use of reverse osmosis, ultra filtration of sap, and ultraviolet light are allowed.
- Pool filters, if used for sap filtration, must use food-grade diatomaceous earth or sand that is NSF or ANSI certified (or other comparable standard for materials intended for contact with potable water). VOF has worked with the Vermont Agency of Agriculture to review pool filters and maintains a list of swimming pool filters that meet the requirements for plastics and filter materials under Vermont law. Please contact the VOF office for a list of these filters.

Prohibited:

- Sap filtration equipment must be kept clean (no evidence of mold or unsuitable odors) and must not compromise the integrity of the organic product.

Syrup Production, Filtration, Storage and Processing Equipment:

Accepted:

- Defoamers are considered processing aids in the production of organic maple syrup. Processing aids must be approved on the National List (see section 205.605). Processing aids must be produced without the use of genetically modified organisms, irradiation and sewage sludge. In products labeled as 100% organic, processing aids that are agricultural must be organically produced. Accepted defoamers include certified organic vegetables oils. Contact the office if you have questions as to whether a defoamer would be allowed for organic production. Please note that overuse of organic vegetable oils can impart off flavors in syrup. Caution: Food allergies are on the rise. Soy oil, peanut oil and dairy products are known allergens. If an allergen containing defoamer is used, VOF recommends providing information about it on your label. In addition, many bulk maple syrup buyers have specific requirements for approved defoamers. When purchasing defoamer from an equipment supplier, the equipment supplier must be able to provide an organic handling certificate if the defoamer has been repackaged by the equipment supplier.
- Stainless steel, food grade plastic and epoxy-lined drums are allowed (provided interior coating is not chipping or cracking – producer must have protocol to check for this).

- Food grade diatomaceous earth added to syrup before filtering. If DE is used as a filtering agent, the product cannot be labeled as 100% organic. (Please see section IV Labeling) Food grade paper and sand, felt, or synthetic filters may be used.
- All new equipment must have lead- free solder to prevent lead contamination. The intention of all producers should be to move away from equipment (especially pans where the sap is boiled) that contains any lead. Producers that have equipment with lead solder must submit annual lead tests.
- Storage containers and boiling equipment shall be made of food grade materials.

Prohibited:

- *Synthetic defoamers, such as Atmos, are not allowed for the production of organic maple syrup products.* Please contact the VOF office if you have a question about your defoamer.
- There must be no risk of contamination of exposed syrup by prohibited substances (exposed insulation, exposed light bulbs without light bulb guards, etc.).
- Drums with chipped epoxy liner, rust, or other imperfections which can impact syrup quality are prohibited.
- Storage containers and boiling equipment shall be made of food grade materials. All equipment must be washed and well rinsed.
- Direct discharge of wastewater that is above ambient outdoor temperatures into adjacent surface water.
- Storage of pesticides (insecticides, herbicides, fungicides) in the same room where sap or syrup is present.

F. Practices Required for Split Operations

Certified organic maple and other tree syrup producers who chose to switch to a conventional defoamer (one not approved for use in organic production) at the end of the season must follow the following record keeping protocols:

- Notify the VOF office of the date that production will switch to conventional.
- The production records (boiling and canning logs) must clearly indicate the dates of production and lot numbers of the wholesale or retail containers that contain the syrup produced with conventional defoamer.
- Maintain purchase receipts verifying the dates and amounts purchased for both conventional defoamer and defoamer approved for use in organic production.
- Maintain usage records for amounts of both conventional defoamer and defoamer approved for use in organic production.
- Wholesale containers of syrup must have a clear means of visually distinguishing the contents as whether certified organic or non-organic.
- Retail containers of non-organic syrup must not make an organic claim or otherwise be represented as organic, including on websites.

- Producers selling retail products must clearly indicate that both organic and non-organic maple syrup are sold.
- Sales records must be maintained to clearly and accurately distinguish wholesale and retail sales of both non-organic and certified organic syrup.
- All records must be maintained on-site for at least five years and be made available to the on-site inspector or to the VOF office upon request.
- Producers should anticipate their inspector conducting a full mass balance audit of their prior year's production and sales records in addition to an audit of their current year-to-date production and sales records for both organic and conventional production.

Due to the unique nature of maple syrup production where it is difficult to determine the amount of sap for each production run, VOF will not certify producers that are switching back and forth between conventional defoamer and defoamer approved for use in organic production as we feel it is impossible to verify the integrity of the organic product. Therefore, once conventional defoamer is used, a producer cannot switch back to organic production until the next season.

G. Washing and Disinfection of Equipment

It is required that all equipment be kept clean and free of traces of cleansing agents. Every time cleansing agents or disinfectants are used, filter, pans, seals, and tanks shall be rinsed thoroughly with water.

1) Water coming into contact with finished product or used as an ingredient in finished product must be tested every 2 years for both total coliform and E.coli to ensure potability. No documentation verifying potability is required if producers are using water from municipal sources or using condensed steam (condensate) or filtered water from reverse osmosis machines (permeate). Water from other sources (ex. well or spring) that comes in contact with the finished product must have documentation verifying potability every 2 years. Equipment used for sap collection and transport does not need to be washed with water verified as potable. This is because sap is boiled to a minimum of 217 degrees F, therefore significantly reducing the risk of contamination from pathogenic bacteria. In addition, it is understood that permeate and condensate may not be available at the beginning of the season, and tested water sources may not be available for initial cleaning (before the first boil of the season). VOF allows this practice given that the product is then boiled to 217 degrees F or packed at 185 degrees F, therefore significantly reducing the risk of contamination from pathogenic bacteria.

2) If maple producers also run dairy farms and if the water they use in their maple operation is the same source as the water used in their dairy operations, they do not need to provide additional documentation of water testing. Instead, dairy farms and dairy processors with a state-inspected, approved water supply, do not need to provide additional documentation of water testing as the Pasteurized Milk Ordinance requires water testing as part of the

licensure program. During the organic inspection, dairy producers must make the Report of Bacterial Examination of Water available to demonstrate compliance.

3) The building(s) used for reverse osmosis, boiling, and/or canning must have floors that can drain and are washable. Gravel floors are allowed. Dirt floors are prohibited.

4) Conventional cleaning products may be used provided that care is taken to avoid any contamination of the organic product.

5) Chlorine bleach products that are of sufficient purity to be categorized as a “food grade” substance (as confirmed by the EPA registration number and the manufacturer’s intended use statement) may be used up to maximum-labeled rates for disinfecting and sanitizing food contact surfaces. Rinsing is not required unless mandated by the label. Producers using food grade bleach solutions to clean tubing are encouraged to trap the chlorine wash so it does not damage the roots of adjacent trees and should consider the fact that most distributors of sugaring equipment do not recommend this practice due to the fact that the salty residue left behind can be attractive to wildlife and result in significant damage to drop lines, lateral lines, mainlines and conductor systems.

6) Tubing systems shall not be sanitized with prohibited products during the season of sap flow unless the sanitization is followed by a purge or rinse.

7) Reverse osmosis machines and boiling equipment must be thoroughly rinsed after the use of any cleaning chemicals or preservatives. The producer must have a protocol to verify that the quantity and quality of water used in this rinse is adequate. This does not have to be documented each time with cleaning records.

8) Before putting syrup into drums for storage, producers must clean and rinse barrels to ensure that syrup does not come in contact with a contaminant. If barrels are cleaned and rinsed by the buyer, producers must have a copy of the buyer’s protocol for review to submit as part of the OSP unless that buyer is certified as an organic handler.

9) The Vermont Required Agricultural Practices (RAPs) Rule for the Agricultural Nonpoint Source Pollution Control Program specifies that "farming" includes the use of land for maple sap and the production of maple syrup. Sections 6.01 and 6.02 of the RAPs state that agricultural wastes cannot be discharged to surface waters via pipe, ditch, or other conduit, nor cross property boundaries. Permeate may be considered agricultural waste if it contains passed sugars that could lead to increased biological oxygen demand (BOD), and any water above outdoor ambient temperature can be a source of thermal pollution. The RAPS also require neutralizing the pH of pan acid wash water. Use of a 1:1 ratio between baking soda and concentrated acid (before dilution) is recommended. VOF recommends producers follow this protocol. Application of pH-neutralized phosphoric acid) spread at agronomic rates on land not intended for use in organic production after the ground has thawed and any spreading

bans have been lifted, is one acceptable method of disposal. The application of waste wash water containing phosphoric acid or containing any prohibited synthetic substances (such as RO membrane storage cleaning solution) to areas used for organic crop production is equivalent to the application of an unapproved synthetic fertilizer and may result in the disqualification of crops produced in those areas and require a three-year transition period before being used to harvest organic crops in the future.

III. RESIDUE TESTING

Residue testing of organic syrup may be required when there is reason to believe that the syrup has come into contact with a prohibited substance or has been produced using excluded methods. During the annual inspection or on a separate site visit, VOF may randomly select a container (open barrel or retail unit) to take a sample for analysis. These samples may be analyzed for lead content, synthetic defoamer and any other residue of concern.

If an operation uses galvanized buckets, they will be asked to provide documentation that the lead equipment is not contaminating the organic syrup. Any syrup with lead levels above 250 ppb cannot be sold as organic. Producers with samples above the 250 ppb lead level must also reassess their management and equipment and submit proposed changes in writing to the VOF Review Committee. Certification continuation or renewal will depend upon the implementation of this proposal and a new lead test showing levels below 250 ppb.

VOF will do periodic residue testing on no less than five percent of the total number of certified operations annually. Such tests will be arranged by VOF and expenses paid for by VOF. A representative of VOF will perform the sampling. Sample integrity will be maintained throughout the chain of custody, and residue testing will be performed in an accredited laboratory. Chemical analysis will be made in accordance with the methods described in the most current edition of the Official Methods of Analysis of the AOAC International or other current applicable validated methodology determining the presence of contaminants in agricultural products (§ 205.670). VOF will also follow and keep up to date with instructions from the NOP regarding sample collection and testing.

Results of residue testing must be submitted to the Administrator of AMS, USDA, the producer, and made available to the public if not part of an on-going compliance investigation. If test results indicate a specific agricultural product contains pesticide residues or environmental contaminants that exceed the Food and Drug Administration's or the EPA's regulatory tolerance, VOF is required to promptly report the data to the Federal Health Agency whose tolerances have been exceeded.

IV. LABELING

Producers must submit their labels to VOF for approval prior to sale. For those producers who are applying only their farm sticker and VOF logo sticker to their product, they are not required to meet the label requirements as set forth below (for example, adding the phrase “certified by VOF”.)

1) 100% Organic

   Products represented as 100% organic must contain 100% organic ingredients including processing aids. For example, producers using food grade diatomaceous earth as a filtering agent may not label their product as 100% organic.

   Products in the 100% organic category may be labeled anywhere on the package as “100% organic” or “organic” and may indicate ingredients individually as organic in the ingredient statement. Producers may use the USDA seal and the VOF logo. However, if a producer chooses to use both logos, the VOF logo may not be more prominent than the USDA seal. On the information panel below information identifying the handler or distributor, the certifying agency of the handler must be identified with a phrase such as “Certified organic by Vermont Organic Farmers” or “Certified by VOF” with no intervening text between the handler information and the phrase identifying the certifier.

2) Organic

   Products represented as “organic” must contain at least 95% organic ingredients. The remaining 5% must also be organic unless those ingredients are not commercially available. This 5% may also include non-agricultural substances (such as food grade diatomaceous earth) from the National List §205.605. These non-organic ingredients must not be produced using genetic engineering or sewage sludge or be irradiated.

   Products in this category may be labeled anywhere on the package as “organic” and may use the USDA seal and the VOF logo. However, if a producer chooses to use both logos, the VOF logo may not be more prominent than the USDA seal. Producers must indicate each organic ingredient in the ingredient statement. On the information panel below information identifying the handler or distributor, the certifying agency of the handler must be identified with a phrase such as “Certified organic by Vermont Organic Farmers” or “Certified by VOF” with no intervening text between the handler information and the phrase identifying the certifier.

   If you list the percentage of organic ingredients in the product, the size of the percentage statement must not exceed ½ the size of the largest type size on the panel on which the statement is displayed and must appear in its entirety in the same type size, style, and color without highlighting.

If your product is labeled as both “organic” and “contains 100% pure maple syrup”, please be sure that it is not misconstrued that the product is also 100% organic. VOF will not approve labels where 100% pure and organic are on the same text line.

V. VALUE ADDED

If you produce any value-added products (such as maple candy or maple sugar) that you plan to represent as organic, you will need to keep records sufficient to track all raw ingredients to the sale of the final product. Required records include production logs, lot numbers, and sales records. Please refer to the VOF Guidelines for Organic Certification of Processed Products for more information on certifying processed products. Please note if the gross sales from your value-added products total more than $5,000, you will need to fill out a complete processing application.

VI. AUDIT TRAIL

Audit trail and inventory control procedures must be readily auditable and detailed enough to trace all sap/syrup from the supplier, through the entire manufacturing process, and on through the distribution system to the retailer, using lot numbers or identifiable codes. It is required to have sequential coding or lot numbers on the storage barrels and containers to be able to identify all syrup and allow traceability of syrup back to date of boiling and canning. A production log must be kept that shows how much syrup was produced on each day of boiling and how much syrup was repackaged on each day of canning. Producers certified only for sap production must maintain records of how much sap was collected in total.

All records, including production records (boiling logs, canning logs, forest activity logs (tapping dates and dates taps are pulled, thinning, etc)), , receipts for inputs such as purchased organic sap and defoamers, receipts for equipment and supplies including number of spouts installed, purchase orders, bills or inventory records, and sales records must be made available for the inspector to review and must be kept for 5 years.

APPENDIX: Sugarbush Management Standards and Tapping Guidelines for Forestland in Use Value Appraisal

Sugarbush Management Standards and Tapping Guidelines for Forestland in Use Value Appraisal

The purpose of this document is to describe the forest management standards on enrolled forestland with trees tapped for maple sap. At the end of this document are the tapping guidelines. The term “shall” is used for mandatory requirements and the term “should” is used when practices are recommended.

While production of a food product such as maple syrup is an agricultural activity in which the processing of sap to maple syrup occurs in the sugarhouse, management of a woodlot for sap production is a forestry activity. A sugarbush is not agricultural land but a forested ecosystem with multiple values, products and services and -- like any forestland -- should be managed with these products and services in mind, including water quality, biodiversity, wildlife habitat, and value-added forest products.

The following standards shall be followed in sugarbush management on stands enrolled in Forestland UVA:

- There should be long-term planning for the recruitment or retention of multiple age classes (unevenaged management is recommended, though even-aged management may be allowed). When regenerating a forest stand, hybrid silvicultural systems are also possible including continuous cover, and shelterwood with reserves.

- Since the basis of any long-term forest-based management activity, such as sugaring, is a healthy forest, minimum residual stocking standards for sugarbush management shall be the same as the minimum residual stocking standards for northern hardwood stands managed for sawtimber. See appropriate guides in UVA Manual Appendix A.

- No single entry while tending the forest with intermediate treatments should reduce stocking by more than one-third, and residual stocking shall be expected to consist of healthy, vigorous trees with sound structure. Harvesting more than one third in any entry may cause sunscald, windthrow, epicormic branching or susceptibility to drought.

- It is understood that emphasis in a sugarbush is on maple sap production and the species of principal interest will be sugar maple and/or red maple. To avoid a monoculture, landowners and managers shall retain a minimum of 25% of total basal area in a combination of non-sugar maple species. (Note: It is recommended that the most varied suite of species found in the forest community be maintained or encouraged. This could include “up to” 8-11 species.) A

variance of the 25% may be approved by the county forester if the landowner justifies the change. In instances when the stand, prior to harvest, already has less than 25% non-sugar maple trees, the percent residual non-sugar maple stocking shall not be less than pre-treatment and the management plan shall address ways to increase these percentages over time.

- Sugarbush management often includes the maintenance of saplines which may include annual clearing of trees, saplings and woody material from under, above, and near lines. The amount of woody material removed while clearing lines should be minimized to keep negligible any effect on the basal area, and in most cases it should be left on the ground to enhance coarse woody material. Beyond cutting for line clearing any additional harvesting for fuelwood or salvage shall be quantified in the plan with either a basal area target, number of crop trees to be released, or by indicating the volume to be removed from any stand.

- For purposes of UVA, Acceptable Growing Stock (AGS) is based on timber quality of the merchantable stem; trees that are healthy, vigorous, and single stemmed with minimal defect from rot, wounds or branches. It is recognized that a good sap producing tree may not be an acceptable timber tree. However, the definitions for AGS and Unacceptable Growing Stock (UGS) will remain the same for enrolled forest land managed for maple sap production to prevent potential highgrading which would adversely affect forest management options in the future. *Note: Large diameter UGS may be retained for tapping purposes as long as the ratio of UGS to AGS is not higher post-harvest.*

- Conversion of a stand to sugarbush use may require special consideration in those natural communities where maple is an associate species of lesser abundance. Every stand should be managed with consideration of the natural community type, tapping the maples only as feasible. Examples of such types are Red Maple Swamps, Riparian Silver Maple Forests (both present problems with equipment and fragile soils), Hemlock-Northern Hardwood, Red SpruceNorthern Hardwood, and Sandplain Forests with oak and pine as dominants and red maple as an associate. While these forest communities can contain large numbers of maple they should not be managed toward any single species or converted to a maple monoculture by harvesting only the dominant oak, pine, spruce, tamarack or ash.

- Sugarbushes shall be mapped following the UVA mapping standards. The stand will be identified using Stand Type based on SAF Cover Type or Vermont's Natural Communities as per

UVA guidelines. The UVA map shall also include the identification of those stands that are tapped or have plans to be tapped within the plan time frame.

- All taps shall be removed annually at the end of each sugaring season before full maple leaf out. Used tubing, mainlines and drop-lines should be removed from the woods, when replaced or when the sugarbush is no longer tapped.

The UVA Tapping Guidelines below shall be referenced in the forest management plan on a stand level where trees are tapped or are planned to be tapped within the time frame of the current plan and a copy of these Guidelines should be included in the landowner's copy of their forest management plan. Taps per tree should not exceed the number of taps in the table below (these are within 2-inch diameter classes). Droplines of 30-36 inches are recommended.

	Standard Spout (5/16")	*Large Spout (7/16")*
0 taps	Less than 10" diameter (less than 29" circumference)	Less than 12" diameter (less than 35" circumference)
1 tap	10-14" diameter (29-47" circumference)	12-18" diameter (35-60" circumference)
2 taps	16-20" diameter (47-66" circumference)	20" & over, diameter (60"+ circumference)
3 taps	22" & over, diameter (66" & over circumference)	Prohibited
4+ taps	Prohibited	Prohibited

VOF Sugarbush Map Requirements

The maps that are included with most forest management plans often do not provide VOF staff or inspectors with all of the information they need to accurately assess the areas of a property that contain infrastructure related to maple sap collection. This makes it difficult to verify buffer zones, estimate the time needed to complete inspections, and to ensure all production areas are inspected as per the National Organic Program requirements. In addition, the Use Value Appraisal program has revised their guidelines regarding sugarbush map requirements. VOF's alignment of the organic maple sap and syrup guidelines with the new Use Value Appraisal guidelines means that their map requirements need to be met in addition to VOF's.

The VOF guidelines for organic certification of maple sap and syrup require that the producer submit maps of all sugarbushes being tapped which include the following:

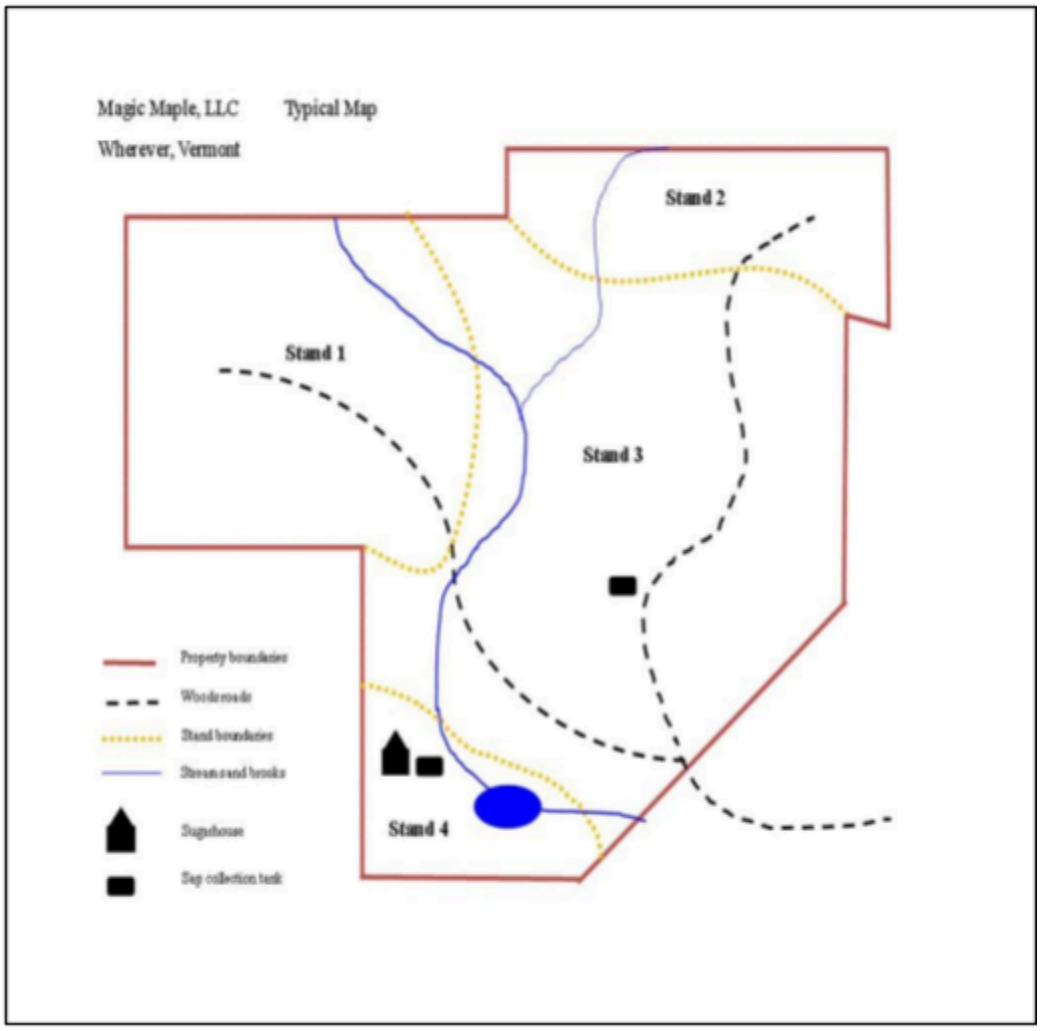
- location of sugarhouse and collection tanks, adjoining land use (hay, forest, corn...),
- location and acreage of all stands described in the forest management plan, number of acres,
- major roads and physical features,
- identification of all areas in the stands where trees are tapped or are planned to be tapped within the time frame of their forest management plan, and
- identify major sap collection zones showing how the sap gets to a single releaser, collection tank or point. Mainline locations are not required.

Features not on the map included with the forest management plan drafted by the consulting forester can be added to a copy of the map or to an overlay by the producer.

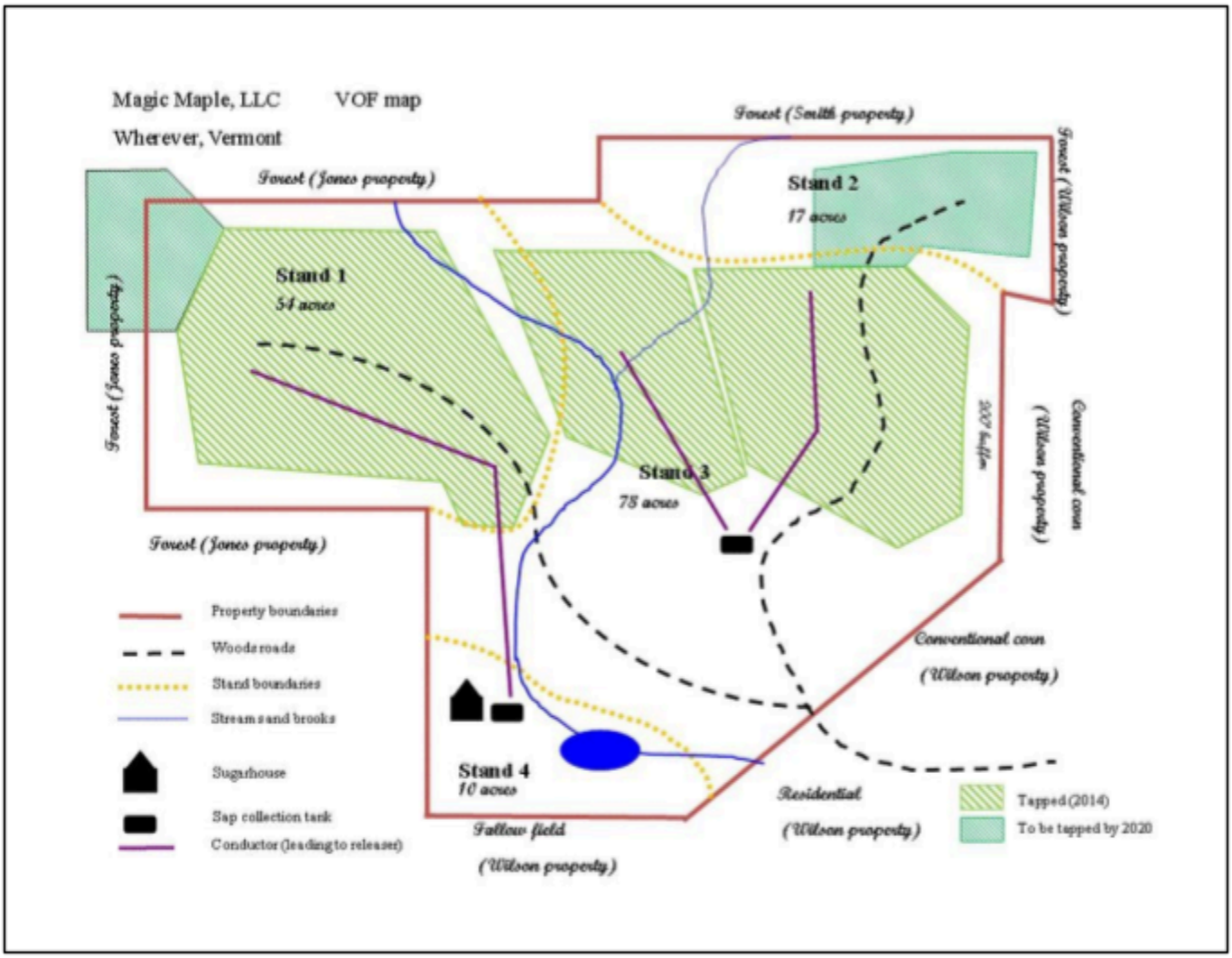
Typical Map:

The map to the right is typical of maps submitted with forest management plans.

Even if drawn over an aerial photo, it does not clearly indicate where the tapped trees are, how sap gets to the sugarhouse, stand acreage, where expansion of the tapped area might occur during the time frame of the plan, or how adjacent land is used.



VOF Sugarbush Map Requirements



Sugarbush Map Meeting VOF and UVA Guidelines:

The map above clearly indicates conductor systems and outlines areas that contain taps (light green). It also includes areas in which taps are expected to be installed during the timeframe of the UVA approved forest management plan (dark green). The to-be-tapped area in the upper left indicates that another forest management plan describing the tapped area of the "Jones property" will be required, as would documentation verifying that the Jones parcel had not substances prohibited in organic production applied in the last three years.

Note that main lines are not required. Here, "conductor systems" refers to the widest diameter tubing used to transport sap from a sugarbush to a sap collection tank/releaser.

Additional information shown can be added directly to a copy of the original map or to a transparent "overlay" that can be placed on the original map.