

SWBC CERTIFICATION AUDIT REQUIREMENTS - VINEYARD

Last updated: 09 Nov 2020

Audit season
Growing or peak operating season
Should be looked at during growing and off-season
Can be reviewed any season

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
Goal A: SET A SUSTAINABILITY FOUNDATION						
Outcome - Compliance with law and applicable regulations						
A.1	Essential Year 0	Growers identify all applicable laws and regulations to their operations and their region and understand how they apply to production activities.		Verify comprehension or knowledge of laws		
A.2	Essential Year 0	Growers ensure that vineyard and farm operations are not in violation of national, provincial, regional or local environmental laws or associated administrative rules or requirements, as determined by any regulatory agency through an enforcement action.		Verify comprehension or knowledge of laws		Visual review of operations & infrastructure
A.3	Essential Year 0	Growers demonstrate that surface water and groundwater use follow applicable law and regulations. Stored volumes, withdrawal rates, and annual water consumption are within the parameters specified in the use license/approval held.	Check applicable permits	Verify comprehension or knowledge of applicable laws Explanation of water safeguards	Comprehension or knowledge of applicable laws Explanation of water safeguards	Visual review of water-related operations & infrastructure
Outcome - Commitment to sustainability						
A.4	Essential Year 0	Growers have formally integrated sustainability into the business strategy (e.g. company mission, vision, and values) and have included the sustainability commitment/policy in employee orientation and handbook (if applicable).	Review business strategy, employee handbook, or similar	If no formal document exists, can describe how sustainability fits in the business & its operations	Workers can describe the sustainability-business link	
A.5	Essential Year 0	Growers have one or more persons responsible for continuously maintaining certification management efforts.	Named in operative documents	Determine who is responsible Responsible person explains role		

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A.6	Continuous improvement	<p>Growers develop and implement a training plan for all their staff members that:</p> <ul style="list-style-type: none"> a. includes information about sustainability practices, environmental safeguards, and requirements for different tasks, functions and areas; b. ensure that sales and other front-facing staff correctly understands and efficiently communicates what it means to be a certified sustainable, and how it contributes to resource conservation and efficiency management; and c. includes task-related procedures and instructions, and general and task-related occupational health and safety information. <p>The plan approaches training on a continual basis to refresh staff knowledge and check for learning and to update content and include new topics as needed.</p>	<p>Training plan Training records</p>	<p>Explain training program and content. Indicate name of responsible person who can describe program and content</p>	<p>Sample employees to determine if they have received training, and test for knowledge on topics throughout audit</p>	<p>Audit-wide observation to ensure that training content is effectively applied in the operation No conflicts between processes/procedures and training content</p>
Outcome - Baseline information and record keeping						
A.7	Essential Year 0	<p>Growers have a description of baseline information that includes:</p> <ul style="list-style-type: none"> a. Total area of the property, total production area, and total area of natural ecosystems. b. Crop variety, crop density, and crop management practices. c. Harvest and yield records for the last three years or since the vineyard was established if that was less than three years. d. Estimated production and yield volumes per production unit for the current or upcoming season. e. Input use per production unit or per product produced (Examples of inputs include synthetic and organic fertilizers and pesticides, water, energy (electrical and fuels for machinery), labour, and other materials). 	<p>Review vineyard baseline information in documents</p>	<p>Explanation or awareness of any missing information</p>		<p>Does the baseline coincide with the vineyard infrastructure and features</p>

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A.8	Essential Year 3	<p>Growers prepare a map of their farm using an aerial photograph, topographic map, a photocopy of a road map or a tax map as a base. The map must include the following elements and information:</p> <ul style="list-style-type: none"> a. Parcel boundaries and vineyard blocks. b. Waterways on or adjacent to the property, including manmade ditches and irrigation ponds. c. Riparian areas and their associated buffer areas, including areas impacted by production activities or otherwise degraded. d. Primary and internal roads and any stream crossings. e. Buildings, well heads, pumps and other infrastructure. f. Ecosystems and other conservation areas that are or may be habitat for any endemic, endangered or vulnerable species. 	Does the map include all of the requested information			Does the information provided on the map
A.9	Continuous improvement	<p>Growers calculate their approximate annual GHG emissions and identify opportunities to reduce them. Calculation methods can be defined and documented by the growers or depend on computer-based modelling tools (such as COMET Farm Voluntary Carbon Reporting Tool and Cool Farm Tool).</p>	GHG calculations	If not documented, get information on calculation & results. Explain lack of or missing documentation.		

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Outcome - Vineyard Management Plan						
A.10	Essential Year 0	<p>Growers design and implement a vineyard management plan to organize all actions and measures designed to improve the sustainability of their farms and its compliance with the SWBC standards including general guidelines, expected results, deadlines and responsible parties, progress milestones for multiple-year implementation, policies, work calendars, and other specific plans as required by this standard. The vineyard management plan must include information for the following topics:</p> <ul style="list-style-type: none"> a. protection of natural ecosystems, biodiversity and natural resources (Conservation plan - Criterion B.33); b. soil management (Erosion control plan - Criterion B.4 and Soil management plan - Criterion C.3). c. nutrient management (Nutrient management plan - Criterion C.9). d. integrated pest management (IPM) and agrochemical management (IPM plan - Criterion D.1). e. occupational health and safety (Health and safety plan - Criterion F.13). f. succession issues (Succession plan - Criterion F20). 	<p>Review vineyard management plan and contents.</p> <p>Are all aspects covered?</p>	<p>Explanation or awareness of any information gaps. Determine comprehension and application of plan content.</p>	<p>Determine employee knowledge and comprehension of plan.</p>	<p>Identify conflicts between operations and vineyard and infrastructure conditions and plan.</p>
A.11	Essential Year 3	<p>Growers update their vineyard management plan at least once every three years, or when there are changes in production operations or infrastructure that affect compliance with this standard, to improve its results and accurately reflect the reality of their operations, workforce and productive systems.</p>	<p>Check version data and/or review records</p>	<p>Determine plan review process and frequency.</p>		

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Goal B: WATERSHED MANAGEMENT AND CONSERVATION						
Outcome - Protection of water sources						
B.1	Essential Year 0	Growers identify all water sources used and all permanent and seasonal water courses, wetlands, and other aquatic ecosystems, and their related protection zones on property maps of conservation features (including surface and groundwater).	Review maps	If missing on map, description of locations and types	Determine field worker knowledge and understanding of protection zones	Verification of location on map and in field
B.2	Essential Year 0	Growers identify the water bodies affected by their activities either directly (within property boundaries) or indirectly (the next downstream waterbody that would receive any waters running off the vineyard).	Review maps	Descriptions of affected waterbodies if none indicated on maps		Verification of location on map and in field
B.3	Essential Year 0	Growers ensure that productive activities do not contaminate, degrade or destroy water sources.	Any available procedures that may affect or safeguard water	Description of precautions taken not to contaminate or affect water bodies	Field workers indicate whether or not water bodies are affected; determine knowledge of protection measures	Observation of operations and possible impacts
Outcome - Control of erosion						
B.4	Essential Year 0	Growers develop an erosion control plan to organize and implement all the actions and best practices to minimize soil erosion and control runoff water. The plan includes general guidelines, expected results, deadlines and responsible parties, and progress milestones for multiple-year implementation. This plan must be included as part of the Vineyard Management Plan (see criterion A.10).	Erosion control plan and contents	Description of erosion control practices. Determine reasons for no practices if problems are observed.	Determine field worker knowledge or understanding of erosion control practices and their application	Evidence of control practices and/or erosion
B.5	Essential Year 0	Growers implement measures to minimize erosion and runoff from roads, such as: <ul style="list-style-type: none"> • avoiding steep slopes and out-slope when necessary; • paving steep and/or heavy use roads; • grassing dirt roads when feasible; • posting speed limit signs on main vineyard access roads; and/or • implementing appropriate structures such as culverts, turnouts, drop boxes, etc. 	Erosion control plan and contents	Description of erosion control practices. Determine reasons for no practices if problems are observed.	Determine field worker knowledge or understanding of erosion control practices and their application	Evidence of control practices and/or erosion

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B.6	Essential Year 0	<p>Growers implement measures to minimize erosion and runoff from vineyard blocks and avenues, such as:</p> <ul style="list-style-type: none"> • inspecting vineyard blocks and avenues before and after major storm events; • re-vegetating steep areas; • terracing, contour farming, and strip-cropping; • installing runoff diversion ditches and canals, with drop boxes and other structures to control water velocity and capture sediment; • implementing sediment control basins; • filter strips; and/or • minimization of herbicide use. 	Erosion control plan and contents	<p>Description of erosion control practices.</p> <p>Determine reasons for no practices if problems are observed.</p>	Determine field worker knowledge or understanding of erosion control practices and their application	Evidence of control practices and/or erosion
B.7	Essential Year 0	<p>Growers implement measures to minimize soil compaction, such as:</p> <ul style="list-style-type: none"> • avoiding the use of heavy farm machinery when soils are susceptible to erosion, compaction, or other damage; • planting deep-rooted crops or cover crops in high traffic area; • minimizing mechanical cultivation; and/or • preventing the entrance of heavy equipment into the vineyard during wet soil conditions. 	Erosion control plan and contents, if compaction is covered and applicable	Description of practices to avoid compaction, if applicable.		Evidence of practices to avoid compaction, if activities are taking place
B.8	Continuous improvement	Where applicable, growers install and maintain water bars or other runoff control structures during the fall season to divert water away from vulnerable areas and reduce runoff water velocity downslope in avenues .	Erosion control plan and contents, if compaction is covered and applicable	Description of any applicable practices or reasons for no practices if evidence indicates issues exist.		Evidence control structures, if used
B.9	Continuous improvement	In headlands where applicable, growers plant non-tilled vegetative cover to protect soils from erosion and disturbance. Cover crops can be permanent or annually disked and seeded.	Review vineyard map to identify possible areas Erosion control plan and contents, if applicable	Description of any applicable practices or reasons for no practices if evidence indicates issues exist.		Inspect headlands, if applicable
B.10	Continuous improvement	Growers maintain native vegetative cover on ditch banks and bottoms. Herbicides are not used to control such covers at any time.		Description of any applicable practices or reasons for no practices if evidence indicates issues exist.	Determine if herbicides are or have been applied in ditches and bottoms, if applicable	Condition of ditches and bottoms Evidence of herbicide use

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B.11	Continuous improvement	Growers maintain highly erodible areas, such as steep slopes or locations with unstable soils, with a continuous vegetative cover or covered with straw, crop residues, mulch, or geotextile fabric.	Review vineyard map to identify possible areas Erosion control plan and contents, if applicable	Description of any applicable practices or reasons for no practices if evidence indicates issues exist.		Inspect steep slopes and vulnerable areas
B.12	Continuous improvement	Growers implement measures to protect, maintain, and assure that spillways, pipes, open channels, and other drainages are stable (not eroding) and/or are properly lined/armored to prevent erosion, and disperse water and protect and maintain outlets, such as: <ul style="list-style-type: none"> • installing energy dissipaters prior to water streams re-entering the downstream waterway; • installing properly sized culverts to accommodate high flows; and/or • harden water inlets and outlets. 	Review vineyard map to identify possible vulnerable infrastructure and areas	Description of any applicable practices or reasons for no practices if evidence indicates issues exist.	Determine if field workers know of any problem areas and actions taken	Inspect potentially vulnerable areas
B.13	Continuous improvement	Growers implement measures to ensure that drainage does not directly enter the waterways for all road lengths that potentially drain to a water body crossing.	Review vineyard map to identify possible vulnerable infrastructure and areas	Description of any applicable practices or reasons for no practices if evidence indicates issues exist.	Determine if field workers know of any problem areas and actions taken	Inspect potentially vulnerable areas

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Outcome - Protection and restoration of Waterways, Wetlands and Riparian Buffers						
B.14	Essential Year 0	<p>Growers avoid the following activities in water courses, wetlands, and other aquatic ecosystems, or within 30 meters of them:</p> <ul style="list-style-type: none"> a. Mining or soil removal. b. Deforestation and elimination of vegetative cover, and removal of snags and trunks that are habitat for fish and other aquatic life. c. Dumping solid waste or untreated wastewater, including water for washing agricultural facilities and stables. d. Dumping of hazardous waste (according to Annexes I and II of the 1992 Basel Convention) in soils and water bodies. e. Construction of impoundments, stream channelization, adding fill, extraction of aggregates for construction industry, or in any other way changing the depth or direction of flow of a water body. f. Draining or drying of water bodies or wetlands through filling, excessive water withdrawal or other means. g. Pollution of aquatic ecosystems that significantly alters their chemistry or species composition. h. Application of agrochemicals or fire, except for the control of invasive plant species or restoration purposes, and then only if governed by a plan developed by a competent professional. i. Installation of filling/washing stations. 	<p>Identify in any plan, map, or similar document if these activities take place or have taken place.</p> <p>Written evidence of complaints, sanctions, or other actions by local, provincial, or national authorities.</p> <p>Review any plan for fire or herbicide use in water courses, wetlands and other aquatic ecosystems</p>	<p>Determine if any of these activities take place or have taken place in recent years.</p> <p>Description of nature and extent of activities, when they took place, and any remediation actions.</p>	<p>Determine if workers have knowledge of these activities have taken place: nature, extent, and time.</p>	<p>General ocular inspection of target areas during the audit.</p> <p>Spot check high-risk areas and infrastructure.</p>

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B.15	Essential Year 0	<p>Growers establish and maintain vegetated protection zones next to all permanent water bodies, springs, wetlands and other aquatic ecosystems. The buffer strips and protection zones have the following characteristics:</p> <p>a. They are 10 meters wide (measured from the edge of the water body or wetland to the outer edge of the strip or zone) on slopes less than eight percent, and 15 meters wide on slopes greater than or equal to eight percent, or around all naturally occurring springs.</p> <p>b. They are primarily native mix of herbaceous vegetation, shrubs, trees, at least as high as the nearby crop.</p> <p>c. Pesticides (including herbicides) and fertilizers are not applied within or on the buffer strips and protection areas.</p> <p>d. Vegetation in these areas are not cut, removed, or otherwise disturbed unless it proves to be a threat to human health, biodiversity, or the environment, or is proven to harbor a pest or disease that threatens grape production.</p>	<p>Review maps to identify and locate existing water bodies.</p> <p>Review vineyard management plan and/or operating procedures to determine safeguards for these protection zones (pesticide & fertilizer applications; vegetation control)</p>	<p>Determine knowledge of water bodies.</p> <p>Description of protection measures, if applicable.</p> <p>Determine reasons for absence of measures if they are needed.</p>	<p>Determine worker knowledge of protection area practices and safeguards</p>	<p>Inspect sample of waterbodies and aquatic ecosystems to determine condition.</p>
B.16	Essential Year 0	<p>Growers keep roads, trails and other infrastructure that crosses or abuts water courses, wetlands, and other aquatic ecosystems and their protection zones to the minimum necessary for production activities.</p>	<p>Review maps to identify and locate existing water bodies and their proximity to infrastructure.</p>	<p>Determine knowledge of water bodies.</p> <p>Description of protection measures, if applicable.</p> <p>Determine reasons for absence of measures if they are needed.</p>		<p>Inspect potential risky areas where infrastructure and waterbodies/ecosystems are in close proximity.</p>
B.17	Essential Year 0	<p>Growers obtain all the necessary legal permits for infrastructure, and it is designed to avoid impacts to aquatic life and water quality.</p>	<p>Review permits and related documentation, if applicable</p>	<p>Determine if permits have been obtained, or knowledge of their need and applicability.</p>		
B.18	Essential Year 3	<p>Growers are aware of how water extraction from streams can impact fish and other aquatic life and implement measures to minimize such impact.</p>		<p>Determine comprehension of these impacts and any precautions taken.</p>		

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B.19	Continuous improvement	Growers ensure that work on diversions, including installing and servicing pumps and intakes, is only done when salmon are not present in streams, during approved in-stream work periods and in accordance with federal, provincial, state and local government regulations and permits .	Identify any documented procedures or processes	Descriptions of processes in place, if any. Awareness and explanation of gaps or information. Determine awareness of the need for safeguards. If no awareness, determine why.	Verify if safeguards are implemented	Observe any related operations taking place.
B.20	Continuous improvement	Growers keep riparian zones or cultivation setbacks of perennial waterways (year-round flow) and seasonal waterways potentially harboring salmonids that are an average of 20-30 meters wide.	Identify possible riparian zones on maps.			Inspect possible areas where setbacks might be needed.
B.21	Continuous improvement	Growers have removed unnatural in-stream barriers to fish and wildlife. If barriers still exist, plans are in place to remove these barriers where feasible.		Determine knowledge of any existing barriers and plans to remove them. Determine if barriers have been removed in the past. If barriers were or will not be removed, determine reasons.		If barriers exist, inspect to see if they can be removed.
B.22	Continuous improvement	Growers implement specific actions to eliminate non-native vegetation species from existing protection zones, replacing them with native species through planting or natural regeneration. The amount of effort is commensurate with the level of non-native invasion and the feasibility of eliminating certain species. Non-native species are never used to re-vegetate or establish protection zones.	Determine if there are records of removal actions taken. Identify on maps.	Determine if any action has been taken to remove non-native species from these areas or establish native species.		Inspect areas where actions have been taken.
B.23	Continuous improvement	Where riparian buffer zones are already established, growers give high priority to establishing tree canopy cover over salmonid-bearing and potentially salmonid bearing streams in ways comparable to undisturbed local reference conditions.	Identify any areas on maps where tree planting and/or protection has taken place.	Determine if trees have been planted, or existing areas protected.		Inspect areas where these actions have been taken.
B.24	Continuous improvement	Growers install and maintain fish screens to avoid fish loses. Maintaining activities take into account the presence of debris and sediment, temperature changes and other damaging factors.	Identify on maps possible intake areas	Determine if there water intake areas in water courses, and if precautions are taken to avoid fish losses.	Workers indicate if precautions have or have not been taken if they have been present during the respective operations.	Inspect waterways and infrastructure where protection might be needed.

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Outcome - Conservation of landscape-level biodiversity						
B.25	Essential Year 0	Growers identify all-natural ecosystems (map A.9.) and protected areas (as designated by local authorities) within or adjacent to the operation.	Identify areas on maps.	Description of ecosystems on property, especially if not on maps. Reasons for ecosystems not identified on map.	Workers demonstrate knowledge of ecosystems existence and location.	Verify location in field versus map. (Sample major areas but be aware throughout field inspection.)
B.26	Essential Year 0	Growers do not destroy any natural ecosystems as of the initial engagement date for certification with the SWBC Program.	Note: in high-risk areas or ownerships, consult older satellite imagery (Google Earth included).	Determine if any areas have been disturbed and why. Determine the dates and nature of any recent ecosystem destruction or degradation.	Determine worker knowledge of ecosystem disturbance on the property.	Inspect ecosystems as part of field audit.
B.27	Essential Year 0	Where feasible, growers maintain and protect large non-crop trees, unless they pose a direct threat to human and infrastructure safety.		Determine policy on leaving large trees. Description and explanation of any recent removals.	Confirm in sample field worker interviews.	Are large trees seen on the property? Is there evidence of recent cutting?
B.28	Essential Year 3	Growers establish hedgerows or vegetated buffer strips, or both, around natural ecosystems and aquatic ecosystems (See also C.15), protected areas within or adjacent to the vineyard, and around any other sensitive habitat areas or strategic places previously identified (including frost pockets within the vineyard). These areas are designed to: a. include flowering plants that encourage beneficial insect populations near crops and fields; b. provide critical wildlife habitat; c. improve or expand existing riparian buffers; d. reduce soil erosion and provide slope stabilization; and e. uptake nutrients and intercept sediment and other pollutants that may emanate from fields, developed areas, or roadways.	Locate ecosystems on maps.	Description of buffer strips, hedgerows, and similar protected zones around waterbodies and ecosystems. If not on maps, determine reasons and locations.	Verify if field workers are aware of buffer zones and their purpose. Description how these areas are managed, if applicable.	Inspect as part of field audit.
B.29	Continuous improvement	Growers incorporate non-crop vegetation that is composed of native or xeriscape plants around housing and infrastructure, such as: border plantings and barriers, live fences, shade trees, and permanent agroforestry systems.				Inspect as part of field audit.

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B.30	Continuous improvement	Growers incorporate and maintain insectary hedgerows every five to ten rows.				Inspect as part of field audit.
B.31	Continuous improvement	Where feasible, growers maintain existing non-crop vegetation and keep at least 10% of the total property as biodiversity areas, for example, native and naturalized grasslands, small forest patches, and flowering plants, shrubs and trees in corners, and along vineyard edges and property boundaries.	Locate these areas on maps and estimate coverage. Determine if there is a listing of vineyard areas by land use with extensions (acres or % of total area).	Ascertain if the vineyard protects-maintains biodiversity areas or natural ecosystems. Determine knowledge of location and extent (acres or % of total property).		Inspect the condition and extent of these areas during field audit.
B.32	Continuous improvement	Growers establish and protect biological infrastructure that offer habitat, refuge and food for bats, birds, pollinators or other wildlife, such as: <ul style="list-style-type: none"> • wild native bird nest boxes, nesting platforms and nest perches. • bee blocks; and/or • ponds. 	Indication of structure location on map.	Determine if structures exist or have existed, and if they were used by target populations. Reasons for absence or removal, if applicable.	Determine worker knowledge of any existing structures and their occupation.	Look for these structures during the field inspection. Condition?
Outcome - Vineyard Conservation Plan						
B.33	Essential Year 3	Growers develop and implement a conservation plan to organize and detail all the actions necessary to comply with all the essential criteria of this standard related to the conservation of natural ecosystems and resources and make progress towards achievement of the Continuous Improvement Criteria in that area (see Criterion A.12). The plan must include: <ol style="list-style-type: none"> Objectives of the actions to be implemented. Quantitative targets and parameters. Time-bound management actions. Resources and responsible personnel to be assigned. Actions for: <ol style="list-style-type: none"> No intervention and conversion of forests and ecosystems. Conservation of non-pest or non-invasive plants or animals. No contamination. Natural restoration and succession of native vegetation and ecosystems, if applicable. This plan must be included as part of the Vineyard Management Plan (see criterion A.10).	Review conservation plan and related documents. Review its content and scope to verify compliance with this criterion.	Discuss the development, review, and maintenance of the plan. Explanation of information or documentation gaps, if any. Assess comprehension on plan implementation and impacts.	Assess employee, particularly field workers, knowledge of plan and/or comprehension of any conservation actions taking place and the reasons for them.	Cross-verify plan contents with applicable property conditions and operations during field inspections.

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Goal C: SOIL AND NUTRIENT MANAGEMENT						
Outcome - Soil management						
C.1	Essential Year 0	Growers send soil samples to a lab for analysis at least once every three years. Laboratory analysis should include at a minimum include organic matter content, soil organic carbon, bulk density, pH, cation exchange capacity, electrical conductivity, soil water holding capacity, chlorides, and macronutrients and principal micronutrients as recommended.	Find and review soil analysis results to determine if they meet the requirements of this criterion.	Describe approach to soil analysis including frequency, sampling process, and how results are used and interpreted. Determine reasons for any analyses gaps.		
C.2	Essential Year 0	Growers send irrigation water samples for laboratory analysis at least once every five years if they have their own water system (well water); otherwise they request the water analysis results to their local purveyor. Analysis include electrical conductivity (soluble salts), pH, alkalinity, and presence of heavy metals.	Evidence of water analyses and dates. Verify compliance of analysis with this criterion.	Explanation of sampling process, frequency, and use of results. If from water provider (municipality or irrigation district), can provide a copy of results or explain them. Determine reasons for any analyses gaps.		

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C.3	Essential Year 0	<p>Growers develop and implement a soil management plan to identify specific practices for conserving soils, preventing soil loss and degradation, and maintaining and enhancing soil fertility.</p> <p>Growers should seek the support of experts to help develop any of the elements of this plan. The plan includes:</p> <ol style="list-style-type: none"> a. the identification of areas susceptible to erosion, compaction, or other types of soil degradation (see Criterion B.4); b. the identification of naturally low-fertility or other types soils that require special management to maintain or improve crop health; c. soil conservation actions to minimize soil degradation and restore soil health for the areas identified in points a and b, and for the vineyard in general; d. a soil sampling plan for laboratory analysis based on soil types and production goals, and the correct sampling techniques for the desired analysis; e. records of soil and water analysis within the last three years; <p>This plan must be included as part of the Vineyard Management Plan (see criterion A.10).</p>	<p>Review soil management plan and contents.</p> <p>Determine compliance with this criterion.</p>	<p>Determine how plan was developed and updated and is used.</p> <p>Explanation of gaps in contents or information.</p> <p>Determine staff comprehension of plan and its use.</p>		<p>Condition of or practices in special management areas and areas susceptible to erosion (B.4) observed during field audit.</p>
C.4	Essential Year 3	<p>Growers select cover crops and vegetation (see criterion C.9) according to soil properties and characteristics, nutrient and water requirements, climate, and erosion and runoff concerns.</p>		<p>Explanation of any cover crop and buffer area vegetation selection.</p>		<p>General observations during field inspections.</p>
C.5	Essential Year 3	<p>In areas with nutrients deficiencies, growers implement practices to increase soil nutrients, for example:</p> <ul style="list-style-type: none"> • plant nutrient enhancing species as cover vegetation, such as nitrogen fixating plants; • minimize tillage; • incorporate organic matter; and • implement a differentiated fertilization plan. 	<p>Determine if these practices are documented and described.</p>	<p>Practices to enhance soil fertility are described.</p> <p>Justifications for any gaps in practices or information.</p>		

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C.6	Continuous improvement	Growers use soil and water analysis results to update their soil management plan at least once every five years, adjusting and incorporating further measures as necessary.	Determine dates on soil and nutrient management plans with respect to soil and water analyses results to understand integration of results	Explanation of how often the plan is updated and how analyses results are incorporated. Examples.		
C.7	Continuous improvement	<p>Growers incorporate organic matter into vineyard soils if required and as per their nutrient management plan (see Criterion C.9.). If organic matter is applied:</p> <ol style="list-style-type: none"> it is managed to prevent pests, pathogens, weed species propagation and nutrient leaching. it is not made of or contains untreated human sewage. it is not applied as a top dressing during high-precipitation periods when the chance of run-off is higher; and the carbon-nitrogen ratio is considered to avoid over-vigorous soils . 	<p>Determine if any of these practices are described or recorded. Review.</p> <p>Identify and review any documentation of the source, nutrient content or C:N ratio of incorporated organic fertilizers.</p>	Determine if these materials are applied, when, and how.		If recently applied, inspect area where used.
Outcome - Nutrient management						
C.8	Essential Year 0	<p>Growers minimize the environmental risks of fertilizer use by implementing best practices, such as:</p> <ul style="list-style-type: none"> using optimum fertilizer rates and sources to reduce loses by leaching and volatilization; selecting optimum fertilizer application equipment and application techniques; calibrating equipment for mixing and applying fertilizers; properly storing organic and/or synthetic fertilizers; and/or using local fertilizer sources as much as possible. 	<p>Identify and review any documents that describe these practices.</p> <p>Determine if records of application rates based based on nutrient analyses or other recommendations.</p> <p>Identify and review any application equipment calibration records to determine calibration methods and frequency.</p>	<p>Description of fertilizer application and storage practices, and equipment calibration practices.</p> <p>Explanation of information or procedural gaps.</p>		Inspect fertilizer storage area for fertilizer storage practices.

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
C.9	Essential Year 0	<p>Growers develop a nutrient management plan and incorporate it into their soil and fertility management plan, that:</p> <ul style="list-style-type: none"> a. identifies nutrient needs and fertilization timing; b. keep records of tissue and fruit quality analysis; c. includes actions to enhance fertilization management and nutrient availability for vines; d. documents for all nutrient applications and any changes and/or deviances from the plan; and e. is in accordance with the requirements of the Minister's Regulation - Code of Practice for Agricultural Environmental Management. <p>This plan must be included as part of the Vineyard Management Plan (see criterion A.10).</p>	<p>Identify and review the nutrient and soil management plans and related documents.</p> <p>Determine if these are part of soil and fertility management plans.</p> <p>Do the plans comply with the contents of this criterion?</p> <p>Determine how often the plans are updated and how soil analyses results are incorporated?</p> <p>Review fertilizer application and tissue and fruit analyses results to determine compliance.</p>	<p>Assess knowledge of the nutrient management plan, its practices and uses, and how it is updated.</p> <p>Explanation of knowledge, information, or data gaps.</p>		
C.10	Essential Year 0	<p>Growers use tissue analysis as a tool at bloom-time and/or veraison to obtain a fuller-picture of the vine nutrient status, as necessary.</p>	<p>Review evidence of tissue analysis and how it is used</p>	<p>Explanation of tissue analysis process and frequency, and use of results.</p>		
C.11	Essential Year 3	<p>Growers collaborate with the winery to conduct test fruit quality parameters (including at least Brix, pH, TA and YANC).</p>	<p>Identify the tests that are carried out.</p>	<p>Description of tests carried out and how the vineyard collaborates with client wineries.</p>		
C.12	Essential Year 3	<p>Growers demonstrate overall and progressive reductions in the use of synthetic nitrogen fertilizers by applying organic fertilizers and establishing of cover crops (See Criterion D.11)</p>	<p>Review fertilization records for this and past few seasons to detect any trends in applications and types used.</p>	<p>Explanation of fertilization strategy and any reductions in synthetic fertilizer use, or reasons for no reductions.</p>		

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
C.13	Continuous improvement	If feasible, growers increase progressively the organic matter (OM) content of their vineyard soils through practices such as: <ul style="list-style-type: none"> • incorporation of crop residues (materials pruned and thinned) into the vineyard soil; and/or • application of compost. 	Review OM content in last 2-3 soil analysis results to determine trends.	Explain practices used to improve soil OM content and challenges faced.	Determine knowledge or comprehension of mechanisms used to increase soil OM.	Visual inspection for evidence of practices.

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
Goal D: INTEGRATED PEST MANAGEMENT						
Outcome - Integrated pest management						
D.1	Essential Year 0	<p>Growers develop, implement, and document an integrated pest management (IPM) plan as the first resource to manage weed and phytosanitary conditions of vineyards, to ensure optimal productivity and quality. The IPM plan includes:</p> <p>a. The identification of the weeds, pests and diseases that occur in the vineyard based on observations, historical records, technical documents, and expert advice. Each pest and disease should be described in terms of their interaction with grapevines, life cycles, natural predators, preferred food and environment requirements; and any other information as considered relevant.</p> <p>b. A description of the physical, biological, chemical and other prevention and control mechanisms for each weed, pest and disease.</p> <p>c. The identification of intervention [pest] thresholds, those levels of pest and disease outbreaks that trigger different control mechanisms for each pest and disease.</p> <p>d. A weed, pest and disease monitoring plan, as described in criterion E.2.</p> <p>e. The mechanisms to be employed for capturing information about weed, pest and disease prevention and control and analysing it to determine the results and future actions.</p> <p>f. A training plan that defines the training that vineyard management and workers will need to correctly implement the IPM program and sets out how and when training will be carried out.</p> <p>g. A system to track the beneficial effects of biodiversity—insects, plants, and animals—so that these can be protected and increased, and that the negative effects of production activities on them can be avoided.</p> <p>This plan must be included as part of the Vineyard Management Plan (see criterion A.10).</p>	<p>Determine if an IPM plan (one plan or a collection of documents) exists.</p> <p>Review plan/documents to determine if contents meet the requirements of this criterion.</p> <p>Identify and review for completeness:</p> <ul style="list-style-type: none"> • Monitoring records • Records of pest and disease intervention or control • Worker training records 	<p>Description of the IPM approach/strategy/plan and its elements.</p> <p>Demonstration of comprehension of how it all works as an integrated approach.</p> <p>Explanation of gaps in plan or contents.</p>	<p>Try to interview workers that received training to determine:</p> <ul style="list-style-type: none"> • knowledge or understanding any of the elements of pest management that are covered in the plan • competence in carrying out any processes or procedures assigned to them 	<p>General observations of practices described in the plan and/or related to pest control.</p>

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
D.2	Essential Year 0	<p>Growers implement a weed and pest monitoring system as part of their IPM plan that includes:</p> <ol style="list-style-type: none"> the different methods for observing and, where necessary, calculating the size of pest populations and disease outbreaks, and the damage they are causing in vineyards; the frequency of vineyard pest and disease monitoring activities; the tools and systems for recording monitoring data and later analysing them to determine if pests and diseases are exceeding thresholds; mechanisms to carry out follow-up monitoring after pest prevention and control techniques are implemented to determine their effectiveness; include a field inspection to monitor insect, mite, weeds, disease and vertebrate pests during growing season and according to the stage of vine growth; and written records of IPM activities, results, and pest and disease incidents for at least three years. 	<p>Determine if the IPM plan includes weed and pest monitoring. Are monitoring methods described? Are there records?</p>	<p>Explanation of pest and disease monitoring methods, frequencies, and how the information is used to make decisions.</p>	<p>Try to interview workers that received training to and work in monitoring to determine their knowledge of and competence in these processes or procedures</p>	<p>Observe any evidence of monitoring in the field, such as pheromone traps</p>
D.3	Essential Year 0	<p>When synthetic pesticides are used, growers ensure to:</p> <ol style="list-style-type: none"> use the substances with the lower toxicity and persistence as possible; apply the treatments to the smallest possible area to achieve control (localized applications); implement measures and/or physical barriers to avoid spray drift; and respect all buffer zones next to water bodies and ecosystems. 	<p>Are there any documents that describe a reduced-toxicity approach to pesticide use? Are there any documents that describe the precautions taken to avoid environmental impacts when pesticides are applied? Do they cover the contents of this criterion?</p>	<p>Description/explanation of the vineyard's approach to environmental protection in the use of pesticides and during applications. Reasons for information or procedural gaps.</p>	<p>Workers demonstrate knowledge or comprehension of the environmental precautions for pesticide application.</p>	<p>Observe presence of buffer zones and vegetation to prevent spray drift to adjacent properties, water bodies, or ecosystems. Observe application practices if present.</p>

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
D.4	Essential Year 0	<p>Growers keep records of all pesticide applications (including natural and organic substances) that include at least the following information:</p> <ol style="list-style-type: none"> application place (vineyard blocks) and area (acres or ha); application date and time of day; commercial name and active ingredient; total quantity applied and amount of water or other mix ingredient, if applicable; application method, and equipment identification if available; target pest; crop stage and harvest date; weather conditions; and person that recommended the application. 	Review application records to ensure they cover the content of this criterion.	<p>Determine justification for missing information, if any.</p> <p>If records are not kept, determine how the vineyard tracks pesticide use.</p>		
D.5	Essential Year 0	<p>Growers protect bees and other beneficial insects during pesticide applications by:</p> <ol style="list-style-type: none"> not spraying on or close to beehives and other potential forage and habitat resources for beneficial organisms. not applying pesticides harmful to pollinators when plants (including weeds) are in bloom; and applying pesticides at times when pollinators are not as active, for example, at dusk and dawn. 	Identify and review any documents that describe the precautions taken to avoid impacts on pollinators when pesticides are applied. Do these documents cover the contents of this criterion?	<p>Description of specific actions taken to reduce pesticide effects on pollinators.</p> <p>Explanations for reasons if no actions are needed or taken.-</p>	Workers describe or have knowledge of specific actions taken to reduce pesticide effects on pollinators.	If applications are taking place, observe any precautions taken.
D.6	Essential Year 0	<p>Growers have a system in place to manage or eliminate offsite spray drift from pesticide operations, or both. The system includes:</p> <ol style="list-style-type: none"> training of pesticide application teams on drift minimization or avoidance techniques; using the proper equipment, especially nozzles, for the types of substances applied; and monitoring conditions such as wind speed, humidity, radiation, and rainfall, and applying when these are optimum to avoid spray drift. 	Identify and review documents that describe drift reduction and/or management. Identify and review any training records for application workers, and descriptions of training content. If special equipment is used, review any records or descriptions of it that may exist.	<p>Description of procedures or processes to eliminate or manage drift.</p> <p>Explanation of the conditions that affect decisions about what actions to take, and how the conditions are monitored or determined.</p> <p>Description of related training.</p> <p>Explanation of why no special actions are needed to control drift, if any.</p>	Relevant workers can demonstrate understanding of practices, and methods used. (Evidence of training effectiveness)	If applications are taking place, observe any drift control mechanisms.

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
D.7	Essential Year 0	Growers comply with buffer zone and no-application zone requirements as indicated in pesticide labels, and in this standard.		Determine procedures for pesticide applications and if these comply with the indicated requirements. Explanation for non-compliance, if applicable.	Workers can describe precautions taken, if applicable.	General observations of areas around waterbodies and ecosystems. Evidence of buffer areas and vegetation barriers?
D.8	Essential Year 0	Growers maintain and calibrate mixing and application equipment at the beginning of each season and where relevant whenever water output/ha changes based on height of canopy being sprayed. <u>See Chapter 7 of the BCWGC Best Practices Guide for a guidance on how to calibrate sprayers.</u>	Review calibration records and determine when calibration takes place.	Determine calibration procedures, practices, and frequency. Explanation for lack of calibration.	Interview any workers involved in calibration to determine knowledge of methods and good practices.	
D.9	Essential Year 0	Growers ensure that mixing, loading, transporting, and cleaning pesticide and fertilizer application equipment do not contaminate the environment through spillage or the discharge of leftover pesticide mix, or equipment wash water to the environment. Vineyards have infrastructure in place to capture, and if necessary, treat all equipment wash water and retain and clean up chemical spills.	Identify and review documents related to pesticide handling, mixing, and the cleaning of equipment to determine compliance with this criterion.	Description of these processes and procedures, and explanation of their absence or lack of implementation.	Workers involved in these processes demonstrate knowledge and implementation of procedures.	Inspect storage, mixing, loading, and cleaning areas.
D.10	Essential Year 0	Growers store pesticides safely in a locked building, with ready access to safety and fire protection equipment. Storage areas are constructed to prevent liquid products from flowing directly into streams or rivers in the case of spills, a fire or an explosion. Follow B.C. Min of Agriculture provincial rules.		Explanation of any compliance gaps.		Inspect storage areas to verify compliance with this criterion.
D.11	Essential Year 0	Growers store pesticides in their original containers. If containers are damaged, pesticides are stored in another suitable container and a replacement label is obtained from the supplier. Follow B.C. Min of Agriculture provincial rules.		Explanation of any compliance gaps.		Inspect storage areas to verify compliance with this criterion.

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
D.12	Essential Year 0	Growers triple wash all empty pesticide containers and use wash water as part of the pesticide mix to be applied. Empty pesticide containers are returned to vendors for recycling. If vendors do not accept empty containers for products they have sold, vineyards store containers in a locked area until such time they can be disposed of at authorized collection sites or according to legally sanctioned methods.	Identify and review any related procedures and records of empty container recycling or delivery to disposal services.	Determine how empty pesticide containers are handled, stored, and disposed. Explanation of lack of precautions and obstacles to compliance.	Determine if relevant workers follow these procedures.	Inspect storage and disposal areas to determine compliance with this criterion.
D.13	Essential Year 0	Growers ensure that liquid and dry materials are stored separately, and that dry materials cannot be contaminated by spilled products.		Explanation of any compliance gaps.		Inspect storage areas to verify compliance with this criterion.
D.14	Essential Year 0	Growers ensure that a spill clean-up kit is available in each pesticide or hazardous substances storage.		Explanation of any compliance gaps.	Determine if relevant workers can explain spill containment and cleanup procedures, and can demonstrate where equipment is located.	Inspect storage areas to determine if spill kits are available and complete.
D.15	Essential Year 0	Growers ensure that emergency response numbers are readily available to all workers in the operation.		Explain emergency response processes and whom gets called.	Workers know where the numbers are located or whom to call in emergencies.	Look for numbers posted in key work or employee rest areas.
D.16	Essential Year 0	Growers implement a safety training policy and program for field workers handling pesticides that: <ul style="list-style-type: none"> a. focuses on reducing the risks to farm worker safety; b. is designed and carried out by competent professionals in the field; c. includes information about applicable law and regulations, the substances being used and all applicable emergency procedures; and d. includes records of all training activities, their contents, and their participants. 	Review policy and program documents and training records for completeness and compliance with this criterion.	Description of the pesticide safety training policy, program and activities, and explain gaps in policy and program documents or implementation.	Verification that workers have received training and can demonstrate comprehension of pesticide safety procedures.	Observe workers in any related operations to determine if they follow safety procedures.
D.17	Essential Year 0	Growers and their staff participate in regular training activities to keep up to date about integrated pest management approaches and techniques.	Identify and review IPM training records, including training event content and frequency.	Determine management approach to IPM training, including training content, frequency, and any improvements needed. Explanation of training gaps.	Knowledge and comprehension of IPM elements demonstrated by relevant workers.	

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
D.18	Essential Year 0	Growers demonstrate that they implement biological, mechanical and physical pest control measures based on pest monitoring results and [pest] thresholds before considering pesticide use.	Review related monitoring and control measure records to determine if monitoring results influenced controls or pesticide use.	Determine approach to pesticide use decisions and how monitoring influences this.	Verification that different pest and disease prevention and control measures are used.	
D.19	Essential Year 3	Growers rotate pesticide mode of action by target pest, excluding herbicides, sulphur, oil, and bio fungicides, to avoid increasing pest resistance to pesticides.				
D.20	Essential Year 3	Growers evaluate the results of the IPM program and pest control activities after every growing season. The evaluation includes a review and analysis of: <ul style="list-style-type: none"> a. Pest monitoring activities. b. Pest or disease damage. c. Weather conditions when the pest or disease outbreak occurred. d. Prevention and control measures applied, including pesticide application data. e. Crop yield and grapes quality. f. Any other relevant information as necessary. See the BCWGC Best Practices Guide for guidance on how to conduct evaluation activities for pest management.	Identify and review any documents that will indicate that the IPM program is evaluated at least annually based on monitoring and control data.	Description of annual IPM review process and explanation of how previous year's data and information influences the review and decisions. Explanation for lack of reviews, if applicable.		
D.21	Continuous improvement	Growers use low-smoke agricultural burning to burn diseased vines and/or other wood if necessary. Burning permits may be required based on venting index .	Determine if any burning permits exist.	Determine if burning takes place or has taken place recently. Description of burning techniques and procedures or processes. Evidence of permits obtained, or explanation why not.	Verify that any burning takes place according to established procedures.	

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
Goal E: IRRIGATION OPTIMIZATION						
Outcome - Optimized irrigation systems						
E.1	Essential Year 0	Growers install backflow prevention devices in line before any injection equipment.	Location of backflow devices on irrigation system plans/maps, if these exist.	Determine if backflow devices are installed and where.		
E.2	Essential Year 0	Growers test the irrigation distribution uniformity and the overall application efficiency of the irrigation system at least once every three years, keep records of the test results, and analyse those records to implement changes in or adjustments to the irrigation systems.	Identify and review any documents related to irrigation system testing Determine if testing complies with this criterion, and results are used.	Explanation of irrigation system testing process and frequency. Demonstrate how results are used. Explanation of information or testing gaps.		
E.3	Essential Year 0	Growers identify and delineate irrigation management zones in the vineyard.	Identify any irrigation management zones on maps.	Describe if and how irrigation management zones are marked in the vineyard. Explanation for why zones are not marked.	Field workers can point out zones in the field and explain what they are.	
E.4	Essential Year 0	Growers test irrigation water at least once annually or obtain data on water quality from their water purveyor. Vineyards send irrigation water samples for laboratory analysis at least once every five years if they have their own water system (well water); otherwise they request the water analysis results to their local purveyor (see criterion D.3. for water testing).	Evidence of water analyses and dates. Verify compliance of analysis with this criterion.	Explanation of sampling process, frequency, and use of results. If from water provider (municipality or irrigation district), can provide a copy of results or explain them. Determine reasons for any analyses gaps.		
E.5	Essential Year 0	Growers analyse the results of water testing to identify any potential problems and their respective management solutions and document any decisions as part of their management system.	Identify and review documents that describe decisions about irrigation based on water analysis results.	Explanation of how water analysis results are reviewed and their influence on irrigation decisions.		

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
E.6	Essential Year 0	Growers implement mechanisms to monitor and measure water use. Mechanisms may include but are not limited to installing flow meters on wells and/or other water sources and pumps, either directly or through their water purveyor; getting water use metrics directly from their water purveyor; and/or record keeping of water use within the vineyard.	Identify and review any records of water use as well as description of monitoring or measuring methods.	Describe how water use is monitored and how it influences decisions about use. Explanation of lack of consumption monitoring or gaps in data.		Locate/verify any meters or other measuring devices used for monitoring.
E.7	Essential Year 0	Growers use low-volume irrigation (e.g. drip irrigation, micro-sprinklers) or have plans to transition to low-volume irrigation within three growing seasons after the first assessment date for the SWBC standard.	Evidence of purchase and installation of low-volume equipment, if installed.	Description of any low-volume irrigation equipment installed. If not installed, explanation of reasons.		Verify installation of equipment in vineyard-
E.8	Essential Year 0	Growers perform and document maintenance activities for all irrigation and water distribution systems least once every irrigation season. This includes but is not limited to checking filters, gauges (flow meters and/or pressure gauges), pressure control meters, relief valves, submains, drip lines, and emitters, repairing line leaks and breaks, and fixing any head rotation or emitter problems.	Review records of irrigation system inspection and maintenance. Determine frequency of these activities.	Description of irrigation system inspection and maintenance procedures, frequency, and scope. Explanation of reasons for no routine inspection or maintenance or lack of records.	Verify if workers report maintenance issues or participate in routine inspections.	
E.9	Essential Year 3	Growers optimize pump efficiency by one or all the following options: a. ensuring that the correct impeller is used; b. improving friction loss in fittings at pump discharge; and/or c. Replacing old pumps with more efficient models.	Determine if new pumps or similar equipment were purchased or installed, and when.	Describe improvements in pumping capacity and efficiency, if applicable. Explanation of efficiency improvement plans or obstacles.		
E.10	Essential Year 3	Growers implement a system to monitor the irrigation system during irrigation events to identify leaks and other maintenance issues and repair them quickly. Field personnel should be trained on how and what to communicate as soon as possible so any issues affecting the irrigation systems performance can be addressed.	Evidence of pressure loss detection systems or other monitoring mechanisms installed. Review any procedures or training records for compliance with this criterion.	Description of how leaks, breakage, or other irrigation system issues are detected.	Determine if workers have been trained and know how to report irrigation system maintenance or malfunction issues.	If the irrigation system condition is in use, sample inspect for leaks or other issues.

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
E.11	Essential Year 3	Growers monitor and keep records irrigation of soil moisture, rainfall, and other soil and weather conditions to make and document decisions about irrigation needs. Soil moisture is at least reviewed via the “shovel test” method, and plant water status by visually assessing shoot tips and tendrils.	Determine if soil moisture, precipitation, relative humidity, or other soil, plant, or weather conditions are monitored, and records are kept. Cross verify with irrigation records and decisions to irrigate.	Explanation of how weather, soil, and plant condition information is used to make decisions about when and how much to irrigate. If records are absent, determine what information is used to make decisions. Explanation for decisions made with incomplete or no information available.		Inspect vineyards for water stress, over-irrigation, or other evidence of poorly timed or calculated irrigation applications.
E.12	Essential Year 3	Growers document all irrigation events. records include data for: a. date of irrigation event; b. amount of water and total area irrigated; c. type of irrigation mechanisms; d. basis for irrigation decision based on information collected according to Criterion E.6.	Find and review irrigation records. Determine if the information is complete and complies with this criterion.	Description of the irrigation records kept. Explanation for information gaps or absence of recordkeeping.		
E.13	Continuous improvement	Growers demonstrate that the maximum amount of water applied has not exceeded the soil water holding capacity .	Compare irrigation amounts in records with a documented calculation of water holding capacity.	Explanation of what are the water holding capacity for the different types of soils on the property and how these were determined. Describe how the amount of water to be applied is calculated. Explanation of the reasons this information is not used, if applicable.		Observation to see if there is evidence of excess irrigation, such as ponding, sediment areas, etc.
E.14	Continuous improvement	If feasible, growers schedule irrigation events during nighttime to reduce loses by evaporation.	Verify irrigation start times on records, if recorded.	Determine if nocturnal irrigation is feasible and implemented. Explanation of why it is not.		

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
E.15	Continuous improvement	Growers use support tools for monitoring soil moisture to track soil moisture depletion and adjust irrigation events timing and amounts of water applied. Support tools include but are not limited to: tensometer, conductivity block, TDR, soil moisture probe.	Identify and review any documents indicating the purchase, installation, and use of monitoring equipment.	Description of any soil moisture measuring and monitoring instruments used. Explanation of how this monitoring influences irrigation decisions.		Verify presence of monitoring equipment.
E.16	Continuous improvement	Growers quantify plant moisture stress by using a plant-applied method to determine irrigation event start and timing throughout the growing season. Plant-applied methods include but are not limited to pressure chamber and evapotranspiration.	Identify and review any records of plant moisture stress evaluation.	Explanation of any plan moisture stress evaluation methods used and how these influence irrigation decisions. Explanation of why these methods are not used.		
E.17	Continuous improvement	Growers use advanced monitoring systems for weather, plant and soil moisture conditions in the vineyard to support their irrigation timing and quantity decisions.	See E.9	See E.9		
E.18	Continuous improvement	Growers implement measures to avoid over-irrigation of their blocks.		Description of how over-irrigation is avoided, including monitoring and how irrigation times and amounts are calculated.		Observation to see if there is evidence of excess irrigation, such as ponding, sediment areas, etc.
E.19	Continuous improvement	Growers ensure their vineyard pumps are properly sized for the acreage and consider equipping them with variable frequency drives.	Evidence of pump size and capacity related to irrigation system capacity.	Explanation of how pump was selected and the determination of proper size and power.		
E.20	Continuous improvement	Growers demonstrate that electric pumps in their vineyards are powered by renewable energy.		Explanation of energy source.		Inspection of pump and any related electrical energy equipment.

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
Goal F: SOCIAL EQUITY						
Outcome - Employee training						
F.1	Essential Year 0	<p>Growers create a written employee handbook and guarantee that all workers have free access to it. It must include at least the following elements:</p> <ul style="list-style-type: none"> a. company mission, vision, and values, including the commitment to sustainability and sustainable practices; b. job descriptions and company standards and regulations. c. training and development policies; d. employee evaluation processes, grievance policy, and disciplinary actions. e. harassment and discrimination policies; f. policies and processes for communicating concerns and suggestions about workplace or working conditions; g. salary, benefits and incentives; h. health and safety policies and practices; and i. a handbook review and update schedule. <p>The handbook is part of employee orientation content (see Criterion A.4).</p>	<p>Identify and review employee handbook or compendium of documents that comprise a handbook.</p> <p>Determine if the contents meet the requirements of this criterion.</p> <p>Identify and review onboarding and training records related to the handbook.</p> <p>Verify handbook review and update schedule and dates.</p>	<p>Description of the handbook, its contents, and how it is used and made accessible to employees.</p> <p>Explanation of content gaps or absence of handbook.</p> <p>Explanation of how the handbook is integrated into employee orientation training.</p>	<p>Determine employees knowledge of handbook and its contents.</p> <p>Verification of employee access to handbook.</p>	<p>If a printed version of the handbook is made available, does its location provide easy and unrestricted access for employees.</p>
F.2	Essential Year 3	<p>Growers develop and implement an emergency response protocol that includes:</p> <ul style="list-style-type: none"> a. written procedures to address emergency situations within the farm facilities; b. information about handling of hazardous substances (see Criteria D.14 and D.16); and c. preparedness for disasters and extreme weather events. 	<p>Identify and review any emergency response procedures and protocols and determine compliance with this criterion.</p>	<p>Explanation of gaps in or lack of emergency response protocols.</p>	<p>Verify employee knowledge of emergency procedures according to their position, tasks, and responsibilities.</p>	<p>Evidence of posted emergency procedures, signs, and other emergency response information and equipment.</p>
F.3	Essential Year 3	<p>Growers assign an annual budget line item for to fund their Continual Training Plan, dollarized or in-kind (see Criterion A.6).</p>	<p>Determine annual budget for training and in-kind contributions.</p>	<p>Describe annual monetary and in-kind allocation for training and how it is determined.</p> <p>Explanation for no budget or inadequate budget.</p>		

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
F.4	Essential Year 3	Growers implement a system to encourage workers to submit suggestions or concerns about workplace conditions, such as safety conditions, job training, employee development opportunities, business performance, and operational efficiencies, without fear of retributions or negative repercussions.	Review policy and procedures for worker communications about improvements or concerns. Review any records of worker communications and actions taken.	Explanation of how workers can make suggestions, express concerns, or lodge complaints. Description of how these communications are evaluated, and any decisions made.	Knowledge of how to make suggestions or express concerns. Evidence of any negative consequences.	If suggestion boxes are used, verify if they are located so as to protect the identity of anyone who uses them.
F.5	Essential Year 3	Growers make trade journals, industry newsletters and other learning and knowledge resources available to the management team and employees.		Explanation of what materials are made available and how.	Confirmation that these materials are made available.	
F.6	Continuous improvement	Growers encourage workers to attend training seminars or other educational programs, and the company pays for the training costs or allows workers paid time off from work to attend, or both, in accordance with the continuous training plan (Criterion A.6).	Identify and review any evidence of the vineyard sponsoring employees to attend external training, seminars, or other education events.	Description of recent employee participation with complete or partial vineyard sponsorship. Explanation of sponsorship policy and process for employees to access sponsorship.	Verification of recent participation in event that was covered by the company.	
F.7	Continuous improvement	Growers require their management team to regularly attend regional and provincial meetings, seminars, and symposiums that are related to sustainability, winemaking, or any other topic related to vineyard practices, goals, and objectives and that benefits and improves their work.	Identify and review any evidence of the vineyard management attending external meetings, seminars, or other education events related to the topics in this criterion.	Description of recent management participation in these events and how events and participation is decided upon.	Management team members verify participation and its benefits.	
F.8	Continuous improvement	Growers implement at least one formal recognition program for workers, and have some recognitions related to sustainability.	Review documentation on employee recognition program, and recently recognized employees, if the program is in place.	Explanation of how the recognition program works and employee recognition criteria. Explanation for lack of program and when one might be started.	Determine employee knowledge of program and recently recognized employees.	Announcements, photos, or other displayed information about the program and recognized employees.
F.9	Continuous improvement	Growers organize field trips for their staff members at least twice a year, to learn about environmental stewardship and overall sustainability.	Review any records of trips and their focus.	Description of recent trips and objectives or learning opportunities.	Determine employee participation in trips and the knowledge gained.	

ID	Type	Criteria	Docs	Interviews: Owner - management - responsible employee	Interviews: Employees / field workers / workers assigned to process	Eyes
F.10	Continuous improvement	Growers have a current membership in the local growers' associations and the management team attends their meetings and participates in their events	Document evidence of membership	Describe memberships and recent meeting attendance.		
Outcome - Worker health and safety						
F.11	Essential Year 0	Growers place warning signs for potential hazards throughout their facilities, and make sure that the signs are in a language that is understood by workers and visitors.			Workers are aware of signs and what they mean.	Evidence of signs and other warnings of potential hazards.
F.12	Essential Year 0	Growers provide personal protection equipment (PPE) free of charge to workers according to the identified health and safety risks for the tasks. Workers are trained in the proper use of PPE and are required to use it while carrying out task with identified risks. Employees that handle hazardous substances and chemicals: <ul style="list-style-type: none"> a. receive, at no cost, personal protective equipment (EPP) as indicated by the label of the substances applied or handled or the material safety data sheet (MSDS), whichever is stricter. b. Have access to facilities to bathe and change their clothes after finishing working with these substances and before leaving the workplace at the end of the workday. 	Review records of PPE distributed according to the type of work being done. Review training records and match individuals with distributed PPE.	Explanation of PPE policies and procedures: <ul style="list-style-type: none"> • Distribution • Required use • Training • Bathing facilities and requirements Explanation of why PPE is not provided for free to workers that handle chemical substances or is not provided, or is incomplete or inappropriate.	Verify that workers who handle chemicals and hazardous substances have been trained and receive the right PPE at no cost. Verify that all workers whose tasks have health and safety risks receive the correct PPE and have been trained in its use.	Observe vineyard operations and verify if workers have the correct PPE and are using it correctly.
F.13	Essential Year 3	Growers develop and implement a health and safety plan that: <ul style="list-style-type: none"> a. is developed according to industry standard resources and is based on a risk analysis of production activities and tasks; b. includes all the requirements of applicable law and regulations; and c. is adjusted to the operations size and type. This plan must be included as part of the Vineyard Management Plan (see criterion A.10).	Identify and review the health and safety plan, or the collection of documents that comprise it, and the related risk analyses, to verify compliance with this criterion. Verify that it is part of the vineyard management plan. Verify compliance with applicable laws.	Provide general explanation of the plan and describe: <ul style="list-style-type: none"> • risk analysis process and methodology • Plan review and modification process and frequency • Associated laws or legal considerations taken into account Explanation for the absence of a plan or gaps in plan contents.	Verify that workers can demonstrate knowledge and implementation of the health and safety measures applicable to their work activities. If these measures are not implemented, determine the reasons.	Observe vineyard operations and verify whether or not the workers are implementing the safety measures indicated for their activities in the health and safety plan.

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F.14	Continuous improvement	The management team conducts employee health and safety meetings at least once a month, and record attendance and document all the issues discussed, and actions agreed. Employees should be able to express concerns about working and safety conditions without fear of repercussions.	Review records of meetings, including attendance, meeting contents, and issues raised.	Explanation of how meetings are conducted and workers concerns are managed and acted upon. Explanation for the lack of records and meetings.	Verify that monthly meetings take place and that workers are able to freely express concerns about conditions.	
F.15	Continuous improvement	Growers have a planned and documented schedule for maintaining all equipment, machinery, and infrastructure.	Identify and review documents related to equipment, machinery, and infrastructure inspection and maintenance processes. Determine if these processes are carried out on a regular basis, and the results are recorded.	Explanation of the inspection and maintenance procedures and processes, including frequency and decisions about actions taken. Explanation of the absence of processes or gaps in records.	Verify with workers that equipment, machinery, and infrastructure is checked regularly and repairs or maintenance is carried out.	Observe the condition of infrastructure, machinery, or equipment for hazards due to improper maintenance or lack of repairs.
Outcome - Workers salaries and benefits						
F.16	Essential Year 0	Growers ensure that all salaries are at or above the market value for the region according to each type of job and position. Under no circumstance, workers' salaries will be lower than the established minimum wage for the region.	Review: <ul style="list-style-type: none"> Any salary studies or information on local, provincial, or national salary levels, including legal requirements. Payrolls to determine if these salary requirements are met, including for legally required overtime. 	Description of how minimum wages are determined. Demonstration of knowledge about local or regional wages for equivalent work. Explanation of any wages that appear to be below regional market or minimum wages.	Verify that workers understand their wage rates and how they compare with similar work within the region or industry.	

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F.17	Continuous improvement	Growers offer additional benefits to their workers and document such benefits. Additional benefits may include but are not limited to private or supplementary medical insurance, transportation, additional vacation or personal leave, and dental care.	Review descriptions of worker benefits in the employee handbook and other related documents to identify employee benefits that are in addition to legal requirements.	Description of worker benefits beyond legal requirements.	Workers demonstrate knowledge of and that they receive benefits that are in addition to legal requirements, and can provide examples.	
F.18	Continuous improvement	<p>Growers offer family support services to all their workers. Examples of family support services include but are not limited to the following [at the discretion of the employer]:</p> <ul style="list-style-type: none"> • flexible work schedules; • housing opportunities, referral information, and resources; • community resources information; • childcare or childcare referral program; • nutrition, health and wellness resources and/or referrals; • employer participation in groups dedicated to increasing housing opportunities; and • employer involvement in improving access to housing, health care, and childcare programs. 	Review descriptions of worker benefits in the employee handbook and other related documents to determine if these include family support benefits or services.	Description of worker family support benefits and services provided.	Workers demonstrate knowledge of family benefits and services, and can provide examples.	
Outcome - Business longevity						
F.19	Continuous improvement	<p>Growers track data about the costs of sustainability actions related to this standard, and any perceived additional income or cost reduction.</p> <p>Vineyards use this information as part of their annual management system review to decide on continued or new actions and improvements and adjust the management system and related policies and procedures accordingly.</p>		<p>Explanation of how management calculates and tracks costs related to sustainability in processes, programs, capital investments, maintenance, and similar activities, if applicable.</p> <p>Explanation of reasons for not tracking costs.</p>		

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F.20	Continuous improvement	<p>Growers have a long-term plan that encompasses the key issues for their future. This plan is periodically reviewed based on their operations' financial, sustainability, and production information. The plan should include or consider, among other issues:</p> <ul style="list-style-type: none"> • future production, sales, and income scenarios and goals; • ideas and plans for vineyard expansion; • infrastructure and equipment improvements and needs; • a long-term staffing and recruiting strategy based on projected staff needs; • a succession plan for renewing or new leadership, or renewing ownership on smaller properties; and • possible resource-economic, human, and natural resources-constraints and ways to address them, including future sustainability actions and improvements. <p>This plan must be included as part of the Vineyard Management Plan (see criterion A.10).</p>	<p>Identify and review any documents related to vineyard planning. Determine if they are part of the vineyard management plan and consider the elements described in this criterion.</p>	<p>Description of long-term plans and efforts to include future planning as part of the vineyard management plan.</p> <p>Explanation of gaps in planning topics, or the absence of long-term planning as part of the vineyard management plan.</p>		
Outcome - Neighbours and community						
F.21	Essential Year 0	<p>Growers actively engage with neighbours and local communities, inform them about their operations and about the sustainable practices implemented, and identify and document relevant concerns about their operations.</p>	<p>Identify and review any documents that describe interactions with neighbours and local communities, especially attempts to inform these stakeholders about sustainability efforts and operational changes or impacts.</p>	<p>Description of interactions--communications, meetings, events, announcements, etc.--with neighbours, community groups, and local stakeholders, and the results achieved.</p> <p>Explanation of why these activities have not taken place.</p>	<p>Determine employee knowledge of described interactions and any results.</p>	
F.22	Essential Year 0	<p>Growers manage workplace conditions to avoid noise and visual pollution of their surroundings.</p>		<p>Description of efforts to minimize noise and light pollution, any concerns raised by neighbours, and actions taken.</p>	<p>Determine if employees have knowledge of light or noise disturbing local residences.</p> <p>Verification that actions have been taken to minimize noise and light pollution.</p>	<p>Observation of potential sources of noise and light pollution.</p>

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F.23	Essential Year 3	Growers implement a procedure for making information regarding upcoming changes in relevant operations available to neighbours, community members, and other relevant stakeholders in a consistent and timely fashion.	Determine if there is a written procedure that complies with this criterion, and if there are records of providing information to local residents and relevant stakeholders.	Explanation of the procedure for informing neighbours and other relevant stakeholders about operational changes or events and their potential impacts. Description of the results of these efforts and actions taken. Explanation for the lack of a procedure.		
F.24	Essential Year 3	Growers have a written procedure to follow up on complaints made by neighbours and local communities. Winery workers understand how to receive any of these complaints or concerns.	Determine if there is a written procedure that complies with this criterion. Review records of any complaints received and actions taken.	Description of complaint management and decision-making process. Description of any recent complaints, how they were handled, and the results. Explanation of the lack of a process or procedure, or why records of complaints are not kept.	Verification that workers understand how to manage complaints from local residents. Description of recent complaints received and how they handled them.	
F.25	Continuous improvement	Growers analyse the ways that light, noise, fumes, and traffic from operations may impact neighbours and implement mitigation measures.	Identify and review any documents that describe assessments of these possible impacts, the decisions made, and the actions taken. Review complaint records (F.24) to determine if these impacts have been a concern of local residents or stakeholders.	Explanation of how these potential impacts are assessed and decisions made about what actions to take. Explanation of the lack of such an assessment, or gaps in any assessment.	Determine if workers perceive that operations may produce impacts that affect neighbours or local residents and stakeholders. Determine if workers are aware of related complaints, and can describe actions taken.	Determine if vineyard operations are or may produce any of these impacts.

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F.26	Continuous improvement	Growers seek opportunities to host events at their facilities to showcase their operations and best practices and build better relationships with local people.		Description of any events, such as tours, open houses, and similar where neighbours and local residents are invited and operations and practices are explained. Description of results or perceived benefits or disadvantages. Explanation of reasons for the lack of events.	Workers verify that these activities have taken place.	
F.27	Continuous improvement	Growers reduce light pollution by minimizing site lighting and incorporating in winery design technologies such as DARK SKY approved lighting, downward facing directional lighting, low-angle spotlights, and low reflectance surfaces.	Identify and review any documents that demonstrate the acquisition and installation of related lighting, or of actions taken with existing lighting to minimize light pollution.	Description of efforts to minimize light pollution, especially the replacement of older lighting types with more suitable equipment. Explanation for the lack of actions.	Workers verify that actions have been taken to replace or otherwise adjust vineyard lighting to minimize light pollution.	Observe, where possible, lighting installation to identify any possible sources of undue light pollution.