

# PrimusGFS v3.0

## Questions & Expectations

### **TABLE 2: IRRIGATION / WATER USE**

*(Including Question Applicability Table)*

REVISED AUGUST 22, 2018

This irrigation / water use section should be completed for each of the farm and indoor agriculture operations

Powered by Azzule Systems

## IRRIGATION / WATER USE

This irrigation / water use section should be completed for each of the farm and indoor agriculture operations

**IF USING: MUNICIPAL / DISTRICT WATER**

**Complete Pages: 1-2**

2.09.01 / 3.10.01

**IF USING: WELL WATER**

**Complete Pages: 3-4**

2.09.02 / 3.10.02

**IF USING: NON-FLOWING SURFACE WATER**

*(pond, reservoir, watershed)*

**Complete Pages: 5-6**

2.09.03 / 3.10.03

**IF USING: OPEN FLOWING SURFACE WATER**

*(river, canal, ditch)*

**Complete Pages: 7-8**

2.09.04 / 3.10.04

**IF USING: RECLAIMED WATER**

**Complete Pages: 9-10**

2.09.05 / 3.10.05

**IF USING: TAIL WATER**

*(includes hydroponics)*

**Complete Pages: 11-12**

2.09.06 / 3.10.06

*Where laws, commodity specific guidelines and/or best practice recommendations exist and are derived from a reputable source, then these practices and parameters should be used. This includes FSMA guidelines, and where any FSMA guidelines are stricter than the audit guidelines, the FSMA guidelines prevail, including compost produced in-house. Audit users should allow a degree of risk association if laws, guidelines, best practices, etc., have not been documented.*

*(Questions in the same column as the Irrigation / Water source used in the growing operation should be answered. The question number is dependent on the module being completed (Farm or Indoor Agriculture). The cells in dark gray are not applicable based on the specific source type). Question applicability table must be used in conjunction with the checklist.*

Points	Question	Municipal / District	Well	Non-flowing Surface Water	Open Flowing Surface Water	Reclaimed Water	Tail Water
0	Which water source(s) is/are used in the growing operation? For the water source(s) used in the operation, all informational gathering questions must be reviewed in the below sections for each source.	2.09.01/3.10.01	2.09.02/3.10.02	2.09.03/3.10.03	2.09.04/3.10.04	2.09.05/3.10.05	2.09.06/3.10.06
15	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	2.09.01a/3.10.01a	2.09.02a/3.10.02a	2.09.03a/3.10.03a	2.09.04a/3.10.04a	2.09.05a/3.10.05a	2.09.06a/3.10.06a
10	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	2.09.01b/3.10.01b	2.09.02b/3.10.02b	2.09.03b/3.10.03b	2.09.04b/3.10.04b	2.09.05b/3.10.05b	2.09.06b/3.10.06b
10	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	2.09.01c/3.10.01c	2.09.02c/3.10.02c	2.09.03c/3.10.03c	2.09.04c/3.10.04c	2.09.05c/3.10.05c	2.09.06c/3.10.06c
15	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	2.09.01d/3.10.01d	2.09.02d/3.10.02d	2.09.03d/3.10.03d	2.09.04d/3.10.04d	2.09.05d/3.10.05d	2.09.06d/3.10.06d
15	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	2.09.01e/3.10.01e	2.09.02e/3.10.02e	2.09.03e/3.10.03e	2.09.04e/3.10.04e	2.09.05e/3.10.05e	2.09.06e/3.10.06e
5	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	2.09.01f/3.10.01f	2.09.02f/3.10.02f	2.09.03f/3.10.03f	2.09.04f/3.10.04f	2.09.05f/3.10.05f	2.09.06f/3.10.06f
15	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	2.09.07/3.10.07	2.09.07/3.10.07	2.09.07/3.10.07	2.09.07/3.10.07	2.09.07/3.10.07	2.09.07/3.10.07
10	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	2.09.08/3.10.08	2.09.08/3.10.08	2.09.08/3.10.08	2.09.08/3.10.08	2.09.08/3.10.08	2.09.08/3.10.08
15	If the operation stores water (tank, cistern, container), is the storage container well maintained?	2.09.09/3.10.09	2.09.09/3.10.09	2.09.09/3.10.09	2.09.09/3.10.09	2.09.09/3.10.09	2.09.09/3.10.09

MUNICIPAL / DISTRICT			PAGE 1 OF 2
Question No.	Question	Total Points	Expectation
2.09.01/ 3.10.01	Is the water used for the growing operation sourced from municipal or district water pipeline systems?	0	Informational gathering question.
2.09.01/ 3.10.01	What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)?	0	Informational gathering question.
2.09.01/ 3.10.01	What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))?	0	Informational gathering question.
2.09.01/ 3.10.01	Does the water come in contact with the edible portion of the crop?	0	Informational gathering question.
2.09.01a/ 3.10.01a	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	15	<p>Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples are taken from a different location each test (randomize or rotate locations).</p> <p>For indoor agriculture operations, one sample per water source is collected and tested prior to use if &gt;60 days since the last test of the water source. Additional samples are taken at least monthly during use of the water source. For farm operations, there needs to be at least one water test per season, unless there are more stringent federal requirements.</p>
2.09.01b/ 3.10.01b	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	10	There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.
2.09.01c/ 3.10.01c	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	10	Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

MUNICIPAL / DISTRICT (CONTINUED)			PAGE 2 OF 2
Question No.	Question	Total Points	Expectation
2.09.01d/ 3.10.01d	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	15	For generic <i>E.coli</i> (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing ( <i>E.coli</i> O157:H7 and <i>Salmonella</i> - zero tolerance). <b>Failure to take corrective actions when there is evidence of high levels or an upward trend of <i>E.coli</i> may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.</b>
2.09.01e/ 3.10.01e	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	15	Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction based test, test probe, ORP meter or as recommended by the disinfectant supplier).
2.09.01f/ 3.10.01f	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	5	"Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. Any well "shocking" should be recorded. The appropriate support documentation should be available for review.
2.09.07/ 3.10.07	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	15	Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.
2.09.08/ 3.10.08	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	10	Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.
2.09.09/ 3.10.09	If the operation stores water (tank, cistern, container), is the storage container well maintained?	15	Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).

WELL			PAGE 1 OF 2
Question No.	Question	Total Points	Expectation
2.09.02/ 3.10.02	Is the water used in the growing operation sourced from wells?	0	Informational gathering question.
2.09.02/ 3.10.02	What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)?	0	Informational gathering question.
2.09.02/ 3.10.02	What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))?	0	Informational gathering question.
2.09.02/ 3.10.02	Does the water come in contact with the edible portion of the crop?	0	Informational gathering question.
2.09.02a/ 3.10.02a	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	15	<p>Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples are taken from a different location each test (randomize or rotate locations).</p> <p>For indoor agriculture operations, one sample per water source is collected and tested prior to use if &gt;60 days since the last test of the water source. Additional samples are taken at least monthly during use of the water source. For farm operations, there needs to be at least one water test per season, unless there are more stringent federal requirements.</p>
2.09.02b/ 3.10.02b	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	10	There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.
2.09.02c/ 3.10.02c	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	10	Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

WELL (CONTINUED)			PAGE 2 OF 2
Question No.	Question	Total Points	Expectation
2.09.02d/ 3.10.02d	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	15	For generic <i>E.coli</i> (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing ( <i>E.coli</i> O157:H7 and <i>Salmonella</i> - zero tolerance). <b>Failure to take corrective actions when there is evidence of high levels or an upward trend of <i>E.coli</i> may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.</b>
2.09.02e/ 3.10.02e	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	15	Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction based test, test probe, ORP meter or as recommended by the disinfectant supplier).
2.09.02f/ 3.10.02f	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	5	"Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. Any well "shocking" should be recorded. The appropriate support documentation should be available for review.
2.09.07/ 3.10.07	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	15	Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.
2.09.08/ 3.10.08	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	10	Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.
2.09.09/ 3.10.09	If the operation stores water (tank, cistern, container), is the storage container well maintained?	15	Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).

NON-FLOWING SURFACE WATER			PAGE 1 OF 2
Question No.	Question	Total Points	Expectation
2.09.03/ 3.10.03	Is the water used in the growing operation sourced from non-flowing surface water (e.g., ponds, reservoirs, watersheds, etc.)?	0	Informational gathering question.
2.09.03/ 3.10.03	What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)?	0	Informational gathering question.
2.09.03/ 3.10.03	What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))?	0	Informational gathering question.
2.09.03/ 3.10.03	Does the water come in contact with the edible portion of the crop?	0	Informational gathering question.
2.09.03a/ 3.10.03a	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	15	<p>Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples are taken from a different location each test (randomize or rotate locations).</p> <p>For indoor agriculture operations, one sample per water source is collected and tested prior to use if &gt;60 days since the last test of the water source. Additional samples are taken at least monthly during use of the water source. For farm operations, there needs to be at least one water test per season, unless there are more stringent federal requirements.</p>
2.09.03b/ 3.10.03b	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	10	There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.
2.09.03c/ 3.10.03c	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	10	Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.



NON-FLOWING SURFACE WATER (CONTINUED)			PAGE 2 OF 2
Question No.	Question	Total Points	Expectation
2.09.03d/ 3.10.03d	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	15	For generic <i>E.coli</i> (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing ( <i>E.coli</i> O157:H7 and <i>Salmonella</i> - zero tolerance). <b>Failure to take corrective actions when there is evidence of high levels or an upward trend of <i>E.coli</i> may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.</b>
2.09.03e/ 3.10.03e	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	15	Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction based test, test probe, ORP meter or as recommended by the disinfectant supplier).
2.09.03f/ 3.10.03f	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	5	"Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. Any well "shocking" should be recorded. The appropriate support documentation should be available for review.
2.09.07/ 3.10.07	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	15	Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.
2.09.08/ 3.10.08	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	10	Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.
2.09.09/ 3.10.09	If the operation stores water (tank, cistern, container), is the storage container well maintained?	15	Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).

OPEN FLOWING SURFACE WATER			PAGE 1 OF 2
Question No.	Question	Total Points	Expectation
2.09.04/ 3.10.04	Is the water used in the growing operation sourced from open flowing surface water (e.g., rivers, canals, ditches, etc.)?	0	Informational gathering question.
2.09.04/ 3.10.04	What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)?	0	Informational gathering question.
2.09.04/ 3.10.04	What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))?	0	Informational gathering question.
2.09.04/ 3.10.04	Does the water come in contact with the edible portion of the crop?	0	Informational gathering question.
2.09.04a/ 3.10.04a	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	15	<p>Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples are taken from a different location each test (randomize or rotate locations).</p> <p>For indoor agriculture operations, one sample per water source is collected and tested prior to use if &gt;60 days since the last test of the water source. Additional samples are taken at least monthly during use of the water source. For farm operations, there needs to be at least one water test per season, unless there are more stringent federal requirements.</p>
2.09.04b/ 3.10.04b	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	10	There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.
2.09.04c/ 3.10.04c	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	10	Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

OPEN FLOWING SURFACE WATER (CONTINUED)			PAGE 2 OF 2
Question No.	Question	Total Points	Expectation
2.09.04d/ 3.10.04d	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	15	For generic <i>E.coli</i> (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing ( <i>E.coli</i> O157:H7 and <i>Salmonella</i> - zero tolerance). <b>Failure to take corrective actions when there is evidence of high levels or an upward trend of <i>E.coli</i> may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.</b>
2.09.04e/ 3.10.04e	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	15	Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction based test, test probe, ORP meter or as recommended by the disinfectant supplier).
2.09.04f/ 3.10.04f	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	5	"Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. Any well "shocking" should be recorded. The appropriate support documentation should be available for review.
2.09.07/ 3.10.07	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	15	Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.
2.09.08/ 3.10.08	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	10	Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.
2.09.09/ 3.10.09	If the operation stores water (tank, cistern, container), is the storage container well maintained?	15	Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).

RECLAIMED WATER			PAGE 1 OF 2
Question No.	Question	Total Points	Expectation
2.09.05/ 3.10.05	Is reclaimed water used in the growing operation? NOTE: This refers to wastewater that has gone through a treatment process.	0	Informational gathering question.
2.09.05/ 3.10.05	What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)?	0	Informational gathering question.
2.09.05/ 3.10.05	What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))?	0	Informational gathering question.
2.09.05/ 3.10.05	Does the water come in contact with the edible portion of the crop?	0	Informational gathering question.
2.09.05a/ 3.10.05a	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	15	<p>Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples are taken from a different location each test (randomize or rotate locations).</p> <p>For indoor agriculture operations, one sample per water source is collected and tested prior to use if &gt;60 days since the last test of the water source. Additional samples are taken at least monthly during use of the water source. For farm operations, there needs to be at least one water test per season, unless there are more stringent federal requirements.</p>
2.09.05b/ 3.10.05b	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	10	There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.
2.09.05c/ 3.10.05c	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	10	Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

RECLAIMED WATER (CONTINUED)			PAGE 2 OF 2
Question No.	Question	Total Points	Expectation
2.09.05d/ 3.10.05d	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	15	For generic <i>E.coli</i> (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing ( <i>E.coli</i> O157:H7 and <i>Salmonella</i> - zero tolerance). <b>Failure to take corrective actions when there is evidence of high levels or an upward trend of <i>E.coli</i> may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.</b>
2.09.05e/ 3.10.05e	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	15	Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction based test, test probe, ORP meter or as recommended by the disinfectant supplier).
2.09.05f/ 3.10.05f	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	5	"Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. Any well "shocking" should be recorded. The appropriate support documentation should be available for review.
2.09.07/ 3.10.07	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	15	Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.
2.09.08/ 3.10.08	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	10	Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.
2.09.09/ 3.10.09	If the operation stores water (tank, cistern, container), is the storage container well maintained?	15	Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).

TAIL WATER			PAGE 1 OF 2
Question No.	Question	Total Points	Expectation
2.09.06/ 3.10.06	Are tail water (run off water) systems, including hydroponics, used in the growing operation?	0	Informational gathering question.
2.09.06/ 3.10.06	What is this water source used for (e.g., irrigation, crop protection sprays, fertigation, frost/freeze protection, cooling, dust abatement, etc.)?	0	Informational gathering question.
2.09.06/ 3.10.06	What type of irrigation methods are used (e.g., micro-irrigation, drip, overhead, flood irrigation, furrow irrigation, seepage irrigation, hydroponic (specify type))?	0	Informational gathering question.
2.09.06/ 3.10.06	Does the water come in contact with the edible portion of the crop?	0	Informational gathering question.
2.09.06a/ 3.10.06a	Are generic <i>E.coli</i> tests conducted on the water (taken from the closest practical source of use) at the required and/or expected frequency?	15	<p>Water samples should be taken from as close to the point of use as is practical. At least one sample per distribution system is required. If there are multiple sampling points in a distribution system, then samples are taken from a different location each test (randomize or rotate locations).</p> <p>For indoor agriculture operations, one sample per water source is collected and tested prior to use if &gt;60 days since the last test of the water source. Additional samples are taken at least monthly during use of the water source. For farm operations, there needs to be at least one water test per season, unless there are more stringent federal requirements.</p>
2.09.06b/ 3.10.06b	Do written procedures (SOPs) exist covering proper sampling protocols which include where samples should be taken and how samples should be identified?	10	There should be documented procedures in place detailing how water samples are taken in the field, including stating how samples should be identified i.e. clearly naming the location that the sample was taken, the water source and the date (this is important in order to be able to calculate geometric means). Samples should be taken at a point as close to the point of use as possible where water contacts the crop, so as to test both the water source and the water distribution system.
2.09.06c/ 3.10.06c	Do written procedures (SOPs) exist covering corrective measures for unsuitable or abnormal water testing results?	10	Written procedures (SOPs) should exist covering corrective measures not only for the discovery of unsuitable or abnormal water test results but also as a preparation on how to handle such findings.

TAIL WATER (CONTINUED)			PAGE 2 OF 2
Question No.	Question	Total Points	Expectation
2.09.06d/ 3.10.06d	If unsuitable or abnormal results have been detected, have documented corrective measures been performed?	15	For generic <i>E.coli</i> (unless more stringent guidelines/laws in existence) <126MPN (or CFU)/100mL (rolling geometric mean n=5) and <235MPN (or CFU)/100mL for any single sample. Where thresholds have been exceeded, there should be recorded corrective actions, including investigations, water retests and crop testing ( <i>E.coli</i> O157:H7 and <i>Salmonella</i> - zero tolerance). <b>Failure to take corrective actions when there is evidence of high levels or an upward trend of <i>E.coli</i> may result in an automatic failure of the audit. Auditor must detail corrective actions and preventative measures.</b>
2.09.06e/ 3.10.06e	Are there records of any anti-microbial water treatment (e.g. chlorination, U.V., ozone, etc.), and is testing current and available?	15	Any water treatment performed at the source (e.g., well, canal, holding tank) should be monitored. The strength of anti-microbial chemicals should be checked using an appropriate method for the anti-microbial in use (e.g., chemical reaction based test, test probe, ORP meter or as recommended by the disinfectant supplier).
2.09.06f/ 3.10.06f	Are records kept for periodic visual inspection and disinfection (if occurring) of the water source and available for review?	5	"Records" may include calendar books with commentary regarding what was checked, the condition, unusual occurrences, and any action taken. If using a disinfection injection system (e.g. chlorination), there should be monitoring logs completed on at least a daily basis. Any well "shocking" should be recorded. The appropriate support documentation should be available for review.
2.09.07/ 3.10.07	Is there a documented assessment for each water source covering animal access, upstream contamination/runoff, proper well condition, water treatment, backflow, maintenance, cross contamination from leaching, recirculating water systems, etc., as applicable?	15	Prior to the first seasonal planting and at least annually and when any changes are made to the system, there should be a documented risk assessment for each water source covering potential physical, chemical and biological hazards from animal access, upstream contamination/runoff, proper well condition, water treatment, water capture, backflow, maintenance, cross contamination from leaching, cross connections, recirculating water systems, etc. If flood or furrow irrigation is used, there needs to be examples of how the operation is minimizing the risk.
2.09.08/ 3.10.08	Are there backflow prevention devices on all main lines, including where chemical, fertilizer and pesticide applications are made?	10	Water systems should be fitted with backflow prevention devices to prevent contamination of the water supply. Main water lines should be fitted with back-flow protection for the incoming water (no matter what the source). Individual water lines should be fitted with backflow protection where practical.
2.09.09/ 3.10.09	If the operation stores water (tank, cistern, container), is the storage container well maintained?	15	Container should be structurally sound with no evidence of damage or rust, no vegetation growing on or in the container. The base of the container should be free from debris and weeds. Access lids are properly secured and any vents, overflow and drains are screened. Air gaps are present and should be at least twice the diameter of the water supply inlet and not be less than 25 mm (1 inch).