WATER QUALITY STANDARDS

FOR THE

SENECA NATION OF INDIANS

"We give greetings and thanks to the water which provides for our strength and well-being. All life, including people, plants and animals, need water. We give thanks to the lakes, rivers, and streams. The waters of the world quench our thirst and provide food for the plant and animal life. Now our minds are one." – Ganö:nyök

Enacted by Tribal Council Resolution # ___ DATE

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ARTICLE I. General Provisions

Section 100: Background, Findings, and Purpose

(A). Background

(a) The Seneca Nation ("Nation") is a federally recognized Native nation that includes five territories in Western New York: Allegany, Cattaraugus, Oil Springs, Buffalo Creek, and Niagara Falls. Three of the territories contain water bodies of significant value.

1. The Allegany Territory consists of 31,180.9 acres which surround the Ohi:yo' (Allegany River/Reservoir) (110 miles of shoreline) and other streams and creeks; it contains a total of 226 miles of water bodies (Figures 2.1-2.11). In 1960, the United States Army Corps of Engineers ("Army Corps") was authorized by the United States government to build the Kinzua Dam for flood control for the City of Pittsburgh, Pennsylvania. Approximately 10,000 acres of land were taken by the Army Corps through a permanent easement for the construction of the Kinzua Dam and reservoir. Construction of the Dam and reservoir resulted in the inundation of that land.
2. The Cattaraugus Territory consists of 22,060.8 acres and surrounds 16.4 miles of the Ga'dä:gësgë:ö' Gëhö:de' (Cattaraugus Creek) as well as other streams and creeks, for a total of 56.6 miles, as shown in Figures 3.1-3.12.
3. The Oil Spring Territory consists of 641.9 acres of land and includes at least 2.3 miles of water resources, including a percentage of Cuba Lake and 1.16 miles of shoreline along that lake (Figure 4.1-4.4).

(b) The Nation has occupied its land since time immemorial and has aboriginal and sovereign water rights on its territories. Proximity to the water is at the core of the Seneca people. The Seneca people have made their homes along the water and have used this natural resource for cultural, ceremonial, religious, fishery, seasonal, residential, and other purposes fundamental to the Seneca way of life.

(c) Water is the basis of many habitats and supports numerous species that are an integral part of the Seneca way of life. Most importantly, water is necessary for the health and welfare, political integrity and economic security of the Nation as a whole. The value and importance of water to the Seneca Nation is expressed in the Ganö:nyök, the Seneca Thanksgiving Address:

O:neganos - The Waters

The Creator made the water, in the rivers and lakes and the oceans, and the underground Springs -

And the Creator touched the water in the beginning of time and he made the water living,

And so the water is like us, it has a soul and it has a spirit -

And the Creator said to the water in the beginning, he said, "all the life I made, they have to drink the water, and so your job is to go into the creeks, and the springs, and rivers, and the oceans the big waters,

And you look for the people where they live and you will quench their thirst as you pass their Villages -

And so it is, that the water is making heartbeat and making like the Splashes and the waves on the lake and the river, same thing as the heart is going - same thing, and so the water is living - And so

that's why everyday you and I, we have to drink the fresh cold water so that we can live for tomorrow -

And that's how the Creator intended it and so that's why the Creator wants us every time we drink the water to give thanks to the Creator and say thank you to the water that quenches our thirst -

And so the rivers and the lakes are still going, and yet still our thirst is being quenched every day-

And so as we are thinking about this matter, we can put our minds together easily-

And we can send our thank you, our greetings, and our love to the spirit of the waters of all the world for following the Creator's way of doing things-

And we say thank you with love to the Waters of the world and our mind is agreed.

Then Our Creator made the fish and all the life in the water,

And the Creator said to the fish, he gave them a spirit and he gave them a soul, same as us, and he told the fish to keep the water clean, anything that falls in there they grab it right away-

And he said to the people and the animals, that whenever you need the fish for food, you can go there to the waters and they will give to you, and they will nourish your body-

And so the fish even today have a hard time, but they don't give up, they keep going right until their last breath, because the Creator told them to, and they don't give up.

And so I say that we the people, who are relative in a spiritual way to the fish life of the world, they still do their job for you and I,

And so for that reason, with Oneness of mind, we send our greetings and our love and our thankfulness, to the fish life of the world-

And so it be that way in our minds.

-Sakokwenionkwas Tom Porter 1996 Thanksgiving Address

(B). Findings

(a) Since time immemorial water and proximity to water have been highly valued by the Seneca people. The Seneca have made their homes along the water and the people have used this natural resource for cultural, religious, fishery, seasonal residential, and other purposes fundamental to the Seneca people's way of life.

(b) Water and the species and habitats it supports are an integral part of the Seneca way of life and their protection is necessary for the health and welfare, political integrity, and economic security of the Nation as a whole.

(c) The management of Seneca Waters is key to the assurance of long-term stewardship of the lands, waters and natural and cultural resources entrusted to the Nation by the Creator and has been secured to the Nation by treaty with the United States.

(d) The Nation and its people have faced significant challenges due to the impact of off-Territory projects like the Kinzua Dam and the "Seneca" Pumped Storage Project on Nation water resources. The Allegany River and Cattaraugus Creek areas have been particularly affected, with actual and potential contamination by toxic substances and hazardous materials, as well as alterations in water levels and flow patterns, stemming from past or ongoing off-territory land use activities.

(e) Impacts from upstream sources and discharges have occurred without adequate disclosure to the Nation, potentially jeopardizing water quality and public health. For example, rogue releases from substandard wastewater treatment plants, unmonitored agricultural operations, and poorly regulated/enforced upstream industries, as well as the installation and operation of a nuclear processing facility known as the West Valley Demonstration Project, have all impacted Seneca Waters. Their adverse impacts are evident, such as the increased occurrence of harmful algal blooms on the Ohi:yo' due to significant sediment loading and erosion along the Ga'dä:gësgë:ö' Gëhö:de'. Addressing these issues is crucial to mitigate risks and safeguard the well-being of the community.

(C). Purpose

(a) It is the policy of the Seneca Nation Council and the purpose of these Water Quality Standards to maintain, protect and enhance the quality of Seneca Waters; by doing so to promote the health, safety, social welfare and economic well-being of the Seneca Nation, its people and all residents of the Seneca Nation Territory; to achieve a level of water quality that provides for all cultural uses of the water, for the protection of habitat which will promote viable sustainable fisheries, for the propagation of fish, shellfish, wildlife and other aquatic resources, for the consumption of aquatic organisms, for recreation in and on the water, and for all existing and designated uses of the water; and to enhance the environment of the Seneca Nation Territory, as the permanent homeland of the Seneca people.

(b) Water Quality Standards define the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses and the people that use it. The designated uses and water quality criteria and standards set forth herein are established in conformance with existing uses of Seneca Waters and in consideration of the water quality potential and limitations of those waters. The criteria are designed to protect fundamental cultural, ceremonial, religious, fishery, and seasonal residential uses, public health and safety, and other water quality matters.

(c) These Water Quality Standards also may be used as cleanup standards for contaminated sites within the Seneca Nation Territory.

Section 101: Authority, Effective Date, and Scope

(A). Authority

The Seneca Nation has inherent sovereign authority to protect and control its water resources to ensure the health, safety, and cultural well-being of the Seneca people and to promote the political integrity and economic security of the Nation. The Seneca Nation Council hereby enacts these Water Quality Standards pursuant to this sovereign authority and its authority under Article XIII of the Constitution of the Seneca Nation of Indians of 1848[1], as amended.

(B). Effective Date

These Water Quality Standards shall become effective immediately upon their enactment by the Council.

(C). Scope

These standards apply to all Seneca Waters to protect those waters from any and all impacts regardless of where the source of those impacts is located. These standards shall be met by all discharges, structures, and other applicable activities that affect Seneca Waters, whether they are located within, bordering upon, or upstream of the Seneca Nation Territory.

[1] https://sni.org/app/uploads/2021/12/Constitution-of-the-Seneca-Nation.pdf

Section 102: Administration

(A). General Administration

The Seneca Nation Council delegates to the Environmental Protection Department ("EPD"), and specifically to the Water Quality Office within EPD, the authority and duty to administer these Water Quality Standards and to develop related water quality protection programs. In addition to the specific authorities and duties listed in the remainder of this section, EPD has the authority to:

(a) Conduct or contract for studies, research, and demonstrations with respect to the reduction or prevention of water pollution;
(b) Furnish technical services relating to water pollution problems and control technologies;
(c) Collect, compile, and analyze information relating to physical, chemical, biological, radiological, and thermal properties of Seneca Waters; and
(d) Perform such other functions as are reasonably required for the implementation of these Water Quality Standards.

(B). Entry and Inspection

EPD shall have the authority to enter and inspect at any reasonable time and in a reasonable manner any property, premise, or place in order to investigate any activity causing, threatening, or allowing water pollution to determine compliance with these Water Quality Standards and with applicable permits, if any. Such right of entry and inspection shall include but is not limited to the right to copy relevant records, inspect monitoring or sampling equipment, inspect treatment processes or equipment, and sample effluents that are being discharged into Seneca Waters.

(C). Enforcement

(a) If the entry and inspection provided for in Subsection B of this section is denied, the EPD may obtain from the Peacemakers Court a warrant to enter and inspect the property, premise, or place in question.
(b) The EPD may issue emergency orders under its own authority, notwithstanding any Peacemaker Court Rules to the contrary. Specifically, if the EPD determines that discharge of pollutants into the Seneca Waters from point or nonpoint sources or a combination of such sources is presenting an imminent and substantial endangerment to the public health or welfare or the environment, the EPD may, after consultation with the Seneca Nation's Legal Department, issue such emergency orders as may be necessary to protect public health or welfare or the environment.
    (i) Such orders shall be supported by the EPD record, may prohibit, restrict, or condition any and all activities that contribute or may contribute to the emergency, shall be effective immediately upon issuance, and shall remain in effect unless overturned or modified after a hearing, if a hearing is requested, or unless the EPD brings a civil action on the same matter in Peacemakers Court pursuant to Paragraph (c) below of this subsection. If the EPD brings such an action, the emergency order shall remain in effect for an additional 14 days beyond commencement of the action or for such longer period as may be authorized by the Peacemakers Court.
    (ii) A respondent issued an emergency order may submit a written request for a hearing on the order within 30 days after issuance of the order. Within 15 days of receiving the request for a hearing, EPD shall designate a Hearing Officer to preside at the hearing. Within 15 days of being designated, the Hearing Officer shall issue an order setting a date and location for the hearing; the date shall be at least 30 days after the date of issuance of the order.
    (iii) The Hearing Officer is hereby given the authority necessary to conduct the hearing and shall conduct a fair and impartial proceeding, shall maintain a record of the hearing, shall

not have any financial interest in the subject matter of the hearing, shall not have a relationship with a party to the hearing or to the subject matter of the hearing that would make it inappropriate to serve as the hearing official, and shall avoid delay. As soon as possible after the conclusion of the hearing the Hearing Official shall issue a written decision in which he or she may affirm, modify, or reverse the emergency order based on the evidence and arguments presented at the hearing. The decision shall contain findings of fact, conclusions of law, the reasons for those conclusions, and a final order. The decision of the Hearing Officer constitutes final agency action and may be appealed to the Seneca Nation Court of Appeals.

(iv) A respondent issued an emergency order may request in writing that the EPD stay the emergency order pending the outcome of a hearing under Subparagraph (iii) above. The request for a stay shall state the circumstances that justify the stay. EPD shall grant or deny the stay within 5 days after receipt of the request. If the EPD denies the stay, the denial shall be deemed final agency action subject to judicial review in the Seneca Nation Court of Appeals.

(v) If the respondent does not request a hearing within the 30 days provided, the emergency order shall not be subject to judicial review.

(c) The EPD may, after consultation with the Legal Department, bring and defend lawsuits in Peacemakers Court to enforce these Water Quality Standards. Specifically, the Director may request the Legal Department to file an action on EPD's behalf for a temporary restraining order, a preliminary injunction, a permanent injunction, or any other relief provided by law, including the assessment and recovery of civil penalties, in any of the following instances:

(i) Whenever a person has violated, or is in violation of, any provision, requirement or prohibition of these Water Quality Standards;

(ii) Whenever a person has violated, or is in violation of, any duty to allow or carry out inspection, entry, or monitoring activities; or

(iii) Whenever a person is creating an imminent and substantial endangerment to the public health or the environment, in which case the Director shall request the Legal Department to pursue injunctive relief but not the assessment of civil penalties, unless the endangerment is caused by a violation, as specified in Subparagraphs (i) and (ii) above.

Section 103: Revision of Water Quality Standards

(A). Triennial Review

At least once every three (3) years, the EPD shall review, hold public hearings on, and, as appropriate, recommend to the Seneca Nation Council revisions of these Water Quality Standards, taking into consideration the best current information available to it. EPD shall also re-examine any waterbody segment with water quality standards that do not include uses related to the protection and propagation of fish, shellfish, wildlife, human health, or recreation in or on the water, to determine if any new information has become available. If such new information indicates that such uses are now attainable, the Nation shall revise its standards accordingly.

Revisions to the Water Quality Standards shall incorporate relevant scientific and engineering advances with respect to water quality and waste treatment and shall be made pursuant to the public comment and hearing procedures described in Subsection B of this section. Whenever the Nation revises or adopts a new standard, the revised or new standard shall be submitted to the U.S. Environmental Protection Agency ("EPA") for review and approval as a federally enforceable standard, consistent with Clean Water Act ("CWA") § 303(c)(2)-(3), 42 U.S.C. §1313(c)(2)-(3), as amended.

(B). Public Comment and Hearing

Any revisions to these Water Quality Standards shall be made pursuant to the following procedures.

(a) **Public Notice and Comment**

EPD shall provide the public with notice of any proposed revisions to these Water Quality Standards by:

(i) Mailing or emailing notice to other Seneca Nation departments and programs, federal agencies, and agencies of affected Native nations and states that are likely to have an interest in the rulemaking, such as environmental agencies and agencies and departments with jurisdiction over fish and wildlife and other natural resources;

(ii) Mailing or emailing notice to persons on a list maintained by the EPD of persons who may be interested or affected by the proposed revisions to the Water Quality Standards; and

(iii) Using any other method that EPD finds to be appropriate for eliciting public participation, such as issuing a press release, posting notice on a web page, publishing notice in the Seneca Nation Newsletter, or providing notice at a public forum.

The notice shall provide at least 45 days for the public to submit written comments on the proposed revisions.

(b) **Public Hearing**

The EPD also shall provide a public hearing on proposed revisions to these Water Quality Standards so that comments may be made orally. Notice of a public hearing shall be made at least 45 days prior to the hearing. Public notice of the hearing may be provided at the same time as public notice of the proposed revisions to the Water Quality Standards, and the two notices may be combined.

(c) **Contents of Notice**

Public notices issued under this subsection shall contain the following information:

(i) Name and address of the office proposing the revisions;

(ii) A brief description of the proposed revisions;

(iii) Name, address, email address, and telephone number of a person from whom interested persons may obtain further information, including copies of the proposed revisions (the proposed revisions also may be posted on a website and the website address provided);

(iv) A brief description of the comment procedures and the time and place of the public hearing;

(v) The location of the administrative record, the times at which the record will be open for public inspection, and a statement that all comments submitted will be available as part of the administrative record; and

(vi) Any additional information that the EPD considers appropriate to provide.

If the public notice for a hearing is issued separately from the public notice of the proposed revisions, in addition to providing the information listed above, the notice shall reference the date of any previous public notices relating to the proposed revisions and include a brief description of the nature and purpose of the hearing, including applicable procedures.

(d) **Procedures for Public Hearing**

(i) The EPD shall designate a Hearing Moderator for the public hearing. The EPD Director or a member of the staff may serve as the Hearing Moderator, so long as the Hearing Moderator does not have a financial interest in the outcome of the proposed revisions. The public hearing is not an adjudicative hearing and is conducted solely for the purpose of providing an opportunity to the public to orally present their views on the proposed revisions to the Water Quality Standards. The Hearing Moderator shall be responsible for the orderly conduct of the public hearing but is not empowered to make any findings of fact, conclusions of law, or recommendations on the proposed revisions to the Standards.

(ii) Hearings shall be held at a time and place that facilitates attendance by the public.

(iii) The Water Quality Program Manager, another member of the EPD staff, or the Hearing Moderator shall inform the audience of the issues involved in the proposed revisions, the considerations the EPD will take into account, the EPD's tentative determinations (if any) to be recommended to the Council, and any information that is particularly solicited from the public.

(iv) Any person may submit oral or written statements and information concerning the proposed revisions to the Water Quality Standards. The Hearing Moderator may set reasonable limits on the time allowed for oral statements. The Hearing Moderator shall allow the submission of written statements at the hearing but shall not require a written statement instead of or as a condition of making an oral statement.

(v) A recording or written transcript shall be made of the hearing. At the conclusion of the hearing the Hearing Moderator shall forward to the EPD the record of the hearing, which shall consist of the recording or written transcript and any materials submitted at the hearing. The hearing record shall be made available to the public for review.

(vi) If the EPD determines it necessary, the EPD shall extend the public comment period provided under Paragraph (a) of this Subsection B to allow the record to remain open for at least 30 days after the public hearing to provide an opportunity for the submission of rebuttal and supplementary information.

(e) **Obligation to Raise Issues During the Public Comment Period**

(i) All persons who believe that a proposed revision to the Water Quality Standards should be issued, modified, or withdrawn must raise all reasonably ascertainable issues and submit

all reasonably available arguments and facts supporting their position, including all supporting material, by the close of the public comment period.

(ii) The EPD may extend the public comment period on its own initiative or on request if it determines that such extension is necessary to obtain full public participation and may grant additional time to comment to any person who demonstrates a need for such time.

(f) **Reopening the Public Comment Period**

(i) Whenever any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a proposed revision to the Water Quality Standards or the EPD becomes aware of significant new information, the EPD may take one of the following actions:

(1) Withdraw revision and reopen the public comment period; or

(2) Prepare a new proposed revision and reopen the public comment period; or

(3) Reopen or extend the comment period to give interested persons an opportunity to comment on the information or arguments submitted.

(ii) The EPD shall issue public notice under Paragraph (a) of this Subsection B of any action taken pursuant to this Paragraph (f). In addition to the requirements of Paragraph (a), the notice for any action taken to reopen the public comment period shall state the scope of the reopening. Such scope shall be limited to the substantial new questions or significant new information that caused the reopening.

(iii) If the comment period is reopened pursuant to Subparagraphs (f)(i)(2) or (3) above, all reasonably available legal and factual grounds concerning the substantial new questions or significant new information, including any supporting material, shall be submitted in writing by a date not less than 45 days after the date of the public notice issued pursuant to Subparagraph (f)(ii). Thereafter, any person may file a written response to any such submission by a date not less than 30 days after the date set forth for filing the submission. Persons desiring to comment may request longer comment periods, which the EPD may allow to the extent the EPD finds is necessary to effect the purpose of the reopening.

(g) **Response to Comments and Administrative Record**

(i) Response to comments. The final revisions to the Water Quality Standards shall be accompanied by a response to the comments received. The EPD shall fully consider all comments received during the public comment period, including during any public hearing. The response shall: specify which of the proposed revisions have been changed, if any, and the reasons for the change; briefly describe and respond to all significant comments raised during the public comment period, including during the public hearing; and be made available to the public.

(ii) Administrative record. The administrative record shall consist of:

(1) The proposed revisions;

(2) The public notice(s);

(3) All comments received during the public comment period, including any extension or reopening of the public comment period;

(4) The tape or transcript of the public hearing and any written materials submitted at the hearing;

(5) The response to comments and any new material that is referenced in response to comments;

(6) Any other documents contained in the supporting file for the revisions to the Water Quality Standards; and
(7) The final revised Water Quality Standards.

The documents required under this Subparagraph (g)(ii) shall be added to the record as soon as possible after their receipt or issuance. The administrative record shall be complete upon issuance of the revised Water Quality Standards. The administrative record shall be available for public inspection beginning no later than the date of the public notice, despite not yet being complete. Material readily available at the EPD office or published material that is generally available need not be physically included with the rest of the administrative record.

(h) **Issuance and Effective Date of Revised Water Quality Standards**

(i) The Nation shall issue the final revised Water Quality Standards based on the administrative record.
(ii) The revised Water Quality Standards shall become effective upon approval by the Seneca Nation Council.
(iii) The EPD shall give public notice of the adoption of the revised Water Quality Standards as soon as possible pursuant to Paragraphs (a) and (c) of this subsection B and shall mail or email a notice to the same persons as were mailed or emailed notice of the proposed revisions, and to anyone else who requests to receive notice.

(i) **Reconsideration After Issuance**

(i) Whenever a person demonstrates to the EPD that it was impracticable to raise an objection within the public comment period, or if the grounds for the objection arose after the close of the comment period but within the time allowed for judicial review, and if the objection is of central relevance to the outcome of the revisions to the Water Quality Standards, the EPD shall convene a proceeding for reconsideration of the revised Water Quality Standards and provide the same procedural rights as would have been afforded if the information has been available at the time the revisions were proposed. The EPD may stay the effectiveness of the revised Water Quality Standards if necessary for the time required to allow reconsideration to occur. The proceeding for reconsideration shall include a new public comment period, which shall be limited in scope to the objection(s) that prompted the reconsideration.
(ii) All persons, including the person making the objection(s) that prompted the reconsideration, who believe that the revised Water Quality Standards are inappropriate for any of the grounds raised by the objection(s) at issue must submit all reasonably available legal and factual grounds supporting their position, including all supporting material, by a date no sooner than 30 days after the public notice of the reconsideration is issued under Subparagraph (h)(iii) below. Thereafter any person may file a written response by a date no sooner than 30 days after the date set by the EPD for filing the material. Persons desiring to comment may request longer comment periods, which the EPD may grant to the extent that it finds necessary to effect the purpose of the reconsideration.
(iii) Public notice of reconsideration shall be issued by the EPD pursuant to Paragraphs (a) and (c) of this Subsection B. In addition to the contents required in Paragraph (c), the public notice shall describe the objection that prompted the reconsideration proceeding, shall state

the scope of the reconsideration, and shall state whether the effectiveness of the revised Water Quality Standards has been stayed.

(iv) The EPD shall hold a public hearing pursuant to Paragraphs (b) and (d) of this subsection.

(v) The EPD shall maintain the administrative record of the reconsideration proceeding pursuant to Subparagraph (g)(ii) of this subsection.

(vi) Within a reasonable time after the close of the public comment period, the EPD shall issue a final decision on reconsideration pursuant to Paragraph (h) of this subsection. The EPD shall provide public notice of the decision pursuant to Subparagraph (h)(iii) of this subsection and shall make available a response to comments pursuant to Subparagraph (g)(i) of this subsection.

(C). Judicial Review

(a) Exhaustion. Any person challenging revised Water Quality Standards or the refusal of the Nation to reconsider revisions to the Water Quality Standards must have followed the procedures set forth in Subsection B of this section as a prerequisite to seeking judicial review of the revised Water Quality Standards or the EPD's decision to deny reconsideration.

(b) Notice of Appeal. A person may seek judicial review in the Seneca Nation Court of Appeals no later than 30 days after the EPD issues notice, pursuant to Subparagraph B(g)(iii) of this section, of either the revised Water Quality Standards at issue or the decision on reconsideration. The person shall file a notice of appeal pursuant to the Rules of Procedure for the Court of Appeals, as modified by this section.

(c) Filing the Administrative Record. Within 30 days following the date that petition for review is filed pursuant to Paragraph (b) of this Subsection C, the EPD shall file in the Seneca Nation's Court of Appeals a certified index of the administrative record on which the revised Water Quality Standards or denial of reconsideration.

(d) Standard for review. The Court's review shall be based on the administrative record. The Court may affirm, reverse, modify in whole or in part, or remand to EPD for further consideration any revised Water Quality Standard or denial of reconsideration, provided that the Court may reverse, modify or remand only if the action at issue is arbitrary and capricious, and abuse of discretion, or otherwise not in accordance with the law; in excess of jurisdiction or statutory authority; without observance of procedure required by law; or unsupported by substantial evidence. In no event shall the Court award damages against the Nation.

Section 104: Dispute Resolution

If a dispute arises between the Nation and a state or other Native nation approved by EPA to administer a Water Quality Standards program due to differing water quality standards between the two jurisdictions, the Nation will follow the Dispute Resolution Mechanism promulgated by the EPA and codified at 40 C.F.R. § 131.7, as may be revised from time to time, and incorporated herein by reference.

Section 105: Severability

If any provision of these Water Quality Standards or the application of any provision to any person or circumstance is held to be invalid, the remainder of these Water Quality Standards and the application of such provision to other persons or circumstances shall remain unaffected.

ARTICLE II. Definitions

Section 200: Definitions

Acute toxicity: toxicity that occurs within any short observation period, begins when the exposure begins, may extend beyond the exposure period, and usually does not constitute a substantial portion of the life span of an organism.

Adverse effect: any detrimental effect to any organism associated with exposure to a substance or to a change or changes in a water body's characteristics, including water flow, water level, water movement, or water temperature. This includes effects that are or may become debilitating, harmful, or toxic to the normal functions of the organism, but does not include non-harmful effects such as tissue discoloration alone or the induction of enzymes involved in the metabolism of the substance.

Algae: simple plant organisms without roots, stems, or leaves that contain chlorophyll and are capable of photosynthesis.

Ambient conditions: the measurable biological, chemical, and physical characteristics of Seneca Waters and associated dependent biotic communities.

Aquatic life: any animal or plant, such as fish, shellfish, macroinvertebrates, and wildlife, which lives at least part of its life cycle in the water.

Best Management Practices: practices consistent with the purposes of these Water Quality Standards that are undertaken to control, restrict, and diminish nonpoint sources of pollution, and measures, including but not limited to structural measures, that are determined to be the most effective and practicable means of preventing or reducing pollution from nonpoint sources.

Bioaccumulation: the process by which a compound is gradually taken up by living organisms and increases in concentration as they ingest and absorb the polluted air, water, or food faster than they can excrete or otherwise eliminate it.

Bioaccumulative chemical of concern or "BCC": any chemical which, upon entering Seneca Waters, has the potential to cause adverse effects, by itself or as its toxic transformation product, by accumulating in aquatic organisms at a human health bioaccumulation factor greater than 1000, after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation, as determined in accordance with the methodology outlined in Appendix B of 40 C.F.R. Part 132, as may be revised from time to time, and incorporated herein by reference. BCCs include, but are not limited to, the pollutants identified in Section A of Table 6 of 40 C.F.R. Part 132. C.F.R. references can be found in Appendix C.

Biological Criteria: Narrative expressions or numerical values that describe the biological integrity of aquatic communities inhabiting waters of a given designated aquatic life use. Biological criteria serve as an index of aquatic community health.

Biological Integrity: the condition of the aquatic community inhabiting unimpaired water bodies of a specified habitat as measured by community structure and function.

Ceremonial and Spiritual Water Use: the use of water for spiritual and cultural practices that may involve primary and secondary contact with water, as well as consumption of water. This shall include uses of a water body to fulfill cultural, traditional, spiritual, or religious needs of the people of the Seneca Nation.

cfs: cubic feet per second.

CFU: colony forming units, expressed as cfu per 100 milliliters.

Chronic toxicity: concurrent and delayed adverse effects that occur only as a result of a chronic exposure. This includes long-term adverse effects to organisms (when compared to the life-span of the organism) caused by or relate to changes in feeding, growth, metabolism, reproduction, genetic mutations, or pollutant exposure. Short-term test methods for detecting chronic toxicity may be used to draw conclusions about chronic toxicity.

Clean Water Act or "CWA": the federal Clean Water Act, 33 U.S.C §§ 1251-1387, as amended.

Cold water fish: fish species that require a relatively cold water habitat, including but not limited to brook trout, sculpin, lamprey, chub, shiner, longnose sucker, smallmouth bass, Allegany Hellbender, sturgeon, and chinook and coho salmon.

Cold Water Fishery: a Seneca Nation Water where the water quality supports or has the potential to support the maintenance and/or propagation of cold water fish communities and/or spawning areas.

Color: the true color of the water from which turbidity has been removed, or the apparent color of the water, including the color due to substances in solution as suspended matter.

Compliance Schedule: a schedule of remedial measures included in a CWA permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the CWA and its implementing regulations.

Confluence: the area where two or more waters join to form a single channel.

Criteria: elements of these Water Quality Standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular designated use. When criteria are met, water quality will generally protect the designated use.

Criteria continuous concentration (CCC): the highest instream concentration of a toxicant or an effluent to which organisms can be exposed indefinitely without causing unacceptable effect. Also known as chronic aquatic life criteria, AL(C).

Criteria maximum concentration (CMC): the highest instream concentration of a toxicant or an effluent to which organisms can be exposed for a brief period of time without causing an acute effect. Also known as acute aquatic life criteria, AL(A).

Ceremonial and Cultural Use: water quality supports activities essential to maintaining the Seneca Nation's cultural heritage, including but not limited to ceremonial or spiritual uses that involve primary and secondary contact and ingestion, subsistence fishing, hunting, harvesting, in-stream flow, and medicinal plant collection.

Designated Use: a use specified in these Water Quality Standards as a goal for a water body or segment, regardless of whether it is currently being attained. The Designated Uses for Seneca Waters are listed in Section 300.

Dissolved Oxygen (DO): the amount of oxygen dissolved in water or available for biochemical activity in water.

E. coli: a specific bacterium used as an indicator of fecal (pathogen) pollution in freshwater environments.

Effluent: the water and the quantities, rates, and concentrations of chemical, physical, biological, and other constituents discharged from a point source.

EPA: the United States Environmental Protection Agency.

EPD: the Environmental Protection Department of the Seneca Nation.

Ephemeral Stream: a stream that has flowing water only during and for a short duration after precipitation events, in a typical year. Runoff from rainfall or snowmelts are the primary sources of water for these streams, and groundwater is not a source of water features.

Existing Uses: all uses attained in a water body on or after November 28, 1975, regardless of whether they are included in the Water Quality Standards or presently exist.

Fecal coliform: that portion of the coliform group which is present in the intestinal tract and feces of warm-blooded animals.

Fish: all species of fish and shellfish and their eggs, offspring, and spawn.

Fishery: a complex community of fishes and shellfishes dependent on adequate water quality and quantity and the habitat provided by a water body, inclusive of cold water and warm water fisheries.

Flow: the volume of water passing through the cross-sectional area of a stream, river, or run per unit of time.

Groundwater: all subsurface water situated within the Seneca Nation Territory.

Hardness: the measure of calcium (Ca^{2+}) and magnesium (Mg^{2+}) and other divalent cations. For the purpose of these standards, hardness is measured in milligrams per liter (mg/L) and generalized as calcium carbonate ($CaCO_3$).

Highest Attainable Use: the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in § 101(a)(2) of the Clean Water Act and attainable, based on the evaluation of the factors in § 40 C.F.R. § 131.10(g), as may be revised from time to time, and incorporated herein by reference, that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability.

Intermittent Stream: a stream or stream stretch that flows during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water.

Milligrams per Liter (mg/L): the concentration at which one milligram is contained in a volume of one liter.

Mixing Zone: an area where an effluent discharge undergoes initial dilution and which is extended to cover secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where water quality criteria can be exceeded if acutely toxic conditions are prevented.

Native: an original or indigenous organism (whether the subject is a person, animal, or plant) of a region, meaning it is naturally present.

Narrative Criteria: criteria that describe the desired conditions of a water body that is free from certain negative conditions.

Natural Condition: background concentration due only to non-anthropogenic sources, i.e., non-manmade sources.

Nonpoint Source: any source of water pollution that does not meet the legal definition or requirements of "point source" as defined in these Water Quality Standards and as specified in Section 502(14) of the Clean Water Act, 33 U.S.C. § 1362(14).

Nonpoint Source Pollution: any dispersed land, air, or water-based pollution that does not originate from a single discrete source (i.e., a point source) but contributes to water quality degradation. Often referred to as "polluted runoff," a nonpoint source pollution includes but is not limited to: atmospheric deposition; surface water runoff or snow melt containing pollutants from agricultural, urban, forest, construction, or mining lands; drainage basins or seepage from subsurface or underground sources; onsite wastewater treatment and discharges from boats or marine vessels not otherwise regulated under the National Pollutant Discharge Elimination System ("NPDES") program. This type of pollution results from contaminants accumulated over a large area and transported to waterbodies, and these contaminants can be in the form of nutrients, salts, oil and grease, sediment, pathogens, debris, by-products from fossil fuel combustion and other substances and materials.

NPDES permit: A National Discharge Pollutant Elimination System permit issued pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342.

Outstanding Seneca Resource Waters: Seneca Waters similar to Outstanding National Resource Waters under the Clean Water Act. These waters represent a unique, sacred, or cultural or ecological resource of the Seneca Nation and are therefore given the highest level of protection under the antidegradation policy in Section 500(A) of these Water Quality Standards, consistent with 40 C.F.R. § 131.12(a)(3) (Antidegradation policy and implementation methods). Other waters whose high quality make them an exceptional recreational, cultural or ecological resource of the Nation may also be designated Outstanding Seneca Resource Waters pursuant to Subsection 500(A) of these Water Quality Standards.

Perennial Stream: a stream or stream reach that flows continuously throughout the year and the upper surface of which is generally lower than the water table of the region adjoining the stream.

Person: an individual, trust, firm, association, partnership, political subdivision, government or government agency, municipality, industry, public or private corporation, or any other entity whatsoever.

pH: a measure of acidity (less than 7) or alkalinity (greater than 7) of a solution; a pH of 7 is considered neutral.

Point Source: any discernable, confined, and discrete conveyance, including but not limited to any pipe, ditch, dam, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation ("CAFO"), landfill leachate collection system, vessel or other floating craft from which pollutants are discharged or may be discharged into a water body, or which alter the flow of water. The term does not include agricultural storm water discharges except for CAFOs or return flows from irrigated agriculture.

Pollution: any man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of water. The physical integrity of water includes water level, water flow, water movement, and water temperature.

Pollutant: dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Practicable: technologically possible, able to be put into practice, and economically viable.

Primary Contact Recreation: a use of the water that causes a person to come into direct contact with the water up to and including complete submergence, including probable ingestion of the water or contact with human membrane material. Examples include, but not limited to, ceremonial uses, swimming, and water skiing.

Reference Conditions: characteristics of waterbody segments least impaired by human activities. As such, reference conditions can be used to describe attainable biological or habitat conditions for waterbody segments with common watershed/catchment characteristics within defined waterbody classes.

Run: a small stream.

Statistical Threshold Value (STV): refers to the approximation of the 90th percentile of the water quality distribution and is intended to be a value that should not be exceeded by more than 10 percent of the samples taken.

Secondary Contact Recreation: a use of water that may cause the water to come into direct contact with human skin but normally not to the point of submergence, ingestion, or contact with human membrane material. Examples include boating, fishing, or wading.

Seneca Nation or Nation: the political and governmental body federally recognized as the Seneca Nation of Indians.

Seneca Nation Territory: all lands located within the exterior boundaries of the Allegany Territory, the Cattaraugus Territory, the Oil Springs Territory, the Buffalo Creek Territory, the Niagara Falls Territory, and any other lands the Nation may acquire in the future and hold as tribal trust land or in restricted fee.

Seneca Waters: all surface waters contained within, flowing through, hydrologically connected, or bordering upon the Seneca Nation Territory or any portion thereof, including but not limited to all portions of rivers, streams (including perennial, intermittent, and ephemeral streams and their tributaries), creeks, runs, lakes, ponds, brooks, dry washes, marshes, waterways, wetlands, mudflats, sandflats, sandbars, sloughs, reservoirs, impoundments, riparian areas, springs seeps, vernal pools, and all other bodies or accumulations of water, natural or artificial, public or private, including those dry for part of the year.

Thermal Discharge: heated discharges with the potential to alter the growth and existence of aquatic organisms.

Toxicity or toxic: those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, or are expected to on the basis of information available to the administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations, in such organisms or their offspring.

Tributary: a river, creek, stream, or run that flows into a larger river, creek, stream, lake, or reservoir.

Turbidity: a measure of the relative clarity of water. It is an optical measurement of the amount of light scattered by material in the water, such as suspended organic and inorganic matter, dissolved colored organic compounds, and other microscopic organisms. Turbidity is typically expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidity meter.

Use Attainability Analysis: a structured scientific assessment of the factors affecting the attainment of designated water uses, including but not limited to physical, chemical, biological, and economic factors as described in 40 C.F.R. § 131.10(g) (Designation of uses).

Warm Water Fish: fish species that require a relatively warm water habitat, including but not limited to northern pike, tiger muskellunge, smallmouth bass, largemouth bass, pickerel, sauger, walleye, rock bass, and bullhead.

Warm Water Fishery: a Seneca Water where the water quality supports or has the potential to support the maintenance and/or propagation of warm water fish communities and/or spawning areas.

Waste Treatment: the activities and technological controls required to ensure that discharges of waste do not impair existing Water Quality Standards.

Water Quality Standards: these provisions of SN law designating uses for Seneca Waters and specifying water quality criteria for such waters based upon their designated uses, which standards are intended to protect the public health and welfare, protect tribal treaty rights to hunt, fish, and gather, enhance the quality of Seneca Waters, and serve the purposes in Section 100(C) of these Water Quality Standards.

Water Quality Standards ("WQS") Variance: a time-limited designated use and criterion for a specific pollutants or water quality parameters that reflect the highest attainable condition during the term of the WQS variance.

Water Quality: the chemical, biological, and physical conditions and characteristics of a water body or portions thereof. Water quality may in some cases include water quantity.

Water Quantity: the amount of water as well as the water level, water flow, water movement and water velocity.

Wetlands: an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in aquatic or saturated-soil conditions, commonly known as hydrophytic vegetation. Wetlands generally include swamps, marshes, bogs and similar areas.

Wildlife: any form of living organism within the Seneca Nation Territory, including but not limited to all wild animals, fish, shellfish, other aquatic life, birds, reptiles, macroinvertebrates, and amphibians and their eggs, offspring, and spawn.

Wildlife Habitat: the waters and surrounding lands of the Seneca Nation Territory used by or that directly or indirectly provide food support to wildlife at any stage of their life history or activity.

ARTICLE III. Designated Uses and Classifications

Section 300: List of Designated Uses

(A). Designated Uses for Seneca Waters

Seneca Waters are assigned designated uses to protect the public health and welfare, enhance water quality, and ensure that these water quality standards provide, wherever attainable, water quality sufficient for the protection and propagation of fish, shellfish, wildlife, recreation, and ceremonial and cultural uses in and on the water, as well as accommodating the use and value of waters for public water supplies, agricultural purposes, and navigation. Designated uses are assigned to individual waterbodies to protect water quality appropriate for each use. The following designated uses shall apply to Seneca Waters:

(a) **Agricultural water supply (AGR)**. Water quality supports crop, orchard, and pasture irrigation, stock watering, vegetation for range grazing, and all other uses in support of farming and ranching.

(b) **Aquatic life (AL)**. Water quality supports conditions for a balanced aquatic community; water quality supports any aquatic, semi-aquatic, or terrestrial wildlife indigenous to Seneca Nation Territory and Waters, and such organism's health and propagation.

  (i) **Cold water fishery (CF).** Water quality supports or has the potential to support the maintenance and/or propagation of cold water fish communities and/or spawning areas.

  (ii) **Warm water fishery (WF).** Water quality supports or has the potential to support the maintenance and/or propagation of warm water fish communities and/or spawning areas.

(c) **Ceremonial and cultural use (CC)**. Water quality supports activities essential to maintaining the Seneca Nation's cultural heritage, including but not limited to ceremonial or spiritual uses (that involve primary and secondary contact and ingestion), subsistence fishing, hunting, harvesting, in-stream flow, and medicinal plant collection. Water bodies used for spiritual bathing, fasting camps, or seasonal fish harvests are designated for ceremonial and cultural use. These waters must support ingestion, immersion, and uninterrupted spiritual connection with the natural world, consistent with the Creator's original instructions.

(d) **Human Consumption of Aquatic Organisms (HC).** Protection of the health of human consumers of fish, shellfish, and other aquatic life, including species important to the support of cultures and traditions of the Seneca Nation. To protect the health of Seneca people who consume fish as part of their subsistence and cultural practice, criteria for toxic pollutants shall be derived using a fish consumption rate that is consistent with traditional diets and takes into consideration the lifestyle of each fish species, including the temperature, spawning conditions, migration and primary habitat.

(e) **Navigation (N)**. Water quality supports navigation in and on the water.

(f) **Primary contact recreation (PC)**. Water quality supports prolonged human contact, including the possibility of ingestion or immersion. Examples include, but are not limited to, ceremonial uses, swimming, and water skiing.

(g) **Secondary contact recreation (SC)**. Water quality supports prolonged human contact where immersion is unlikely but there is the possibility of minimal ingestion. This use includes, but is not limited to, boating and fishing.

(h) **Water supply (WS)**. Water quality, after appropriate treatment, supports use for human drinking water supplies or for food processing.

Section 301: Designated Use Modifications

(A). Modifications to designated uses, including the addition or removal of a designated use or establishment of a use subcategory, may be made pursuant to the provisions of Section 103 of these Water

Quality Standards and consistent with the requirements of 40 C.F.R. § 131.10, as may be revised from time to time, and incorporated herein by reference.

(B). In the event that water quality monitoring identifies water bodies where attainable quality is less than the water quality required under the use designations in this Article III, the Seneca Nation will identify the causes of, sources of, and contributing factors to the water quality threat or impairment and attempt to restore water quality through the development and implementation of a point source pollution control plan (if applicable), a nonpoint source pollution abatement plan, a watershed plan, or a Total Maximum Daily Load (TMDL). If these measures are not successful, the applicable Water Quality Standards may be revised to reflect actual attainability for those water bodies consistent with the use attainability analysis described in 40 C.F.R. § 131.10(g) (Designation of uses), as may be revised from time to time, and incorporated herein by reference. In modifying use designations, existing uses may not be removed as designated uses, and the Seneca Nation shall adopt the highest attainable use as defined in Section 200.

Section 302: Classifications of Seneca Waters

(A). Water Body Classifications by Environmental Conditions

Seneca Waters are classified by designated uses and environmental conditions. As of the effective date of these WQS, all Seneca Waters are classified as Class A, which includes the following Designated Uses: Water Supply (WS), Agricultural Water Supply (AGR), Aquatic Life (AL), Ceremonial and Cultural Use (CC), Human Consumption of Aquatic Organisms (HC), Navigation (N), Primary contact recreation (PC), and Secondary contact recreation (SC).

(B). Designated Fisheries

A Class can be designated for Cold Water Fishery or Warm Water Fishery habitat.

(a) Cold Water Fishery (CF): Water quality supports or has the potential to support the maintenance and/or propagation of cold water fish communities and/or spawning areas. The applicable temperature and DO criteria for cold water fishery designated waters are found in Subparagraph 401(A)(i) and (A)(l). The applicable ammonia criteria are found in Table B-2 of Appendix B.

(b) Warm Water Fishery (WF): Water quality supports or has the potential to support the maintenance and/or propagation of warm water fish communities and/or spawning areas. The applicable temperature and DO criteria for warm water fishery designated waters are found in Section 401(A)(i) and Section(A)(l). The applicable ammonia criteria are found in Table B-2 of Appendix B.

(c) Season-Limited Cold Water Fishery Use $(CF)^S$: a season-limited cold water fishery designation, due to changes in water elevation from U.S. Army Corps of Engineers activities, will apply as follows:

(i) From April 15 to November 15[2], for $(CF)^S$ waters, warm water fishery criteria apply for temperature, dissolved oxygen, and aquatic life ammonia. Cold water fishery criteria will apply from November 16 to April 14 of the next year. Temperature criteria are defined in Section 401(A)(i). Dissolved oxygen criteria are defined in Section 401(A)(l). And ammonia criteria can be found in Table B-2 of Appendix B.

(ii) The following Seneca Waters are designated as $(CF)^S$:

- Quaker Run
- Pierce Run

[2] April 15 to November 15 corresponds to the summer pool water elevation, according to reservoir plots for Kinzua Dam and Allegheny Reservoir, US Army Corps of Engineers; See the reservoir water surface elevation for the Allegheny Reservoir, USGS, https://waterdata.usgs.gov/monitoring-location/03012520.

- Bone Run
- Sawmill Run
- Stateline Run

The classification and designated uses of Seneca Waters are shown in Section A-1 of Appendix A of these Water Quality Standards.

ARTICLE IV. General Water Quality Standards

Section 400: General Conditions

(A). Seneca Waters shall be free from pollutants in amounts or combinations that, for any duration, may affect the most sensitive use of the water body, except as provided in mixing zones.

(B). Seneca Waters shall attain and maintain a level of water quality that provides for the attainment and maintenance of the water quality standards of downstream waters. At the boundary between waters of different classifications, the water quality standards that are more stringent will prevail. When a distinction cannot be made between surface water, wetlands, and sediments, then the applicable standards shall depend upon which existing or designated use is, or could be, adversely affected. If the designated uses of more than one water body are affected, then the most protective criteria shall apply.

(C). The Seneca Nation may revise water quality criteria on a territory-wide or water body-specific basis as needed to protect aquatic life, human health, and other existing and designated uses, and also to increase the technical accuracy of the criteria being applied. The Seneca Nation shall formally adopt any revised criteria following public review and comment pursuant to Section 103(C) of these WQS.

Section 401: General Narrative and Numeric Criteria

(A). The following General Narrative and Numeric Criteria apply to Seneca Waters, including intermittent and ephemeral streams, provided, however, that when these Water Quality Standards set stricter standards for designated water bodies, the stricter standards supersede these General Criteria.

(a) **Suspended, colloidal and settleable solids:** Seneca Waters shall be free from suspended, colloidal and settleable solids that are likely to cause deposition or impair designated or existing uses.
(b) **Color:** Seneca Waters shall be free from substances that are likely to adversely affect their color and, by doing so, impair their designated uses. Color-producing substances from other than natural sources are limited to concentrations equivalent to 15 units (CU).
(c) **Odor and Taste:** Seneca Waters shall be free from substances that are likely to adversely affect the taste or odor thereof, and, by doing so, impair designated uses.
(d) **Oil, grease and any floating substances:** Seneca Waters shall be free from oil, grease, foam, scum or any other forms of objectionable floating debris that collect on the surface of water bodies, including as a film or iridescence, or cause a deposit on a shoreline, bank, or on aquatic vegetation that is likely to impair designated uses.
(e) **Turbidity:** Turbidity attributable to other than natural conditions shall not reduce light transmission to a point where aquatic biota are inhibited or that causes an unaesthetic and substantial visible contrast with the natural condition of the water.
(f) **Nitrogen and Phosphorus [Nutrients]**: Seneca Waters shall be free from nutrients (nitrogen and phosphorus) in concentrations that are likely to result in the growth of algae, weeds and slimes or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or impair designated or existing uses.
(g) **Flow:** there shall be no alteration in water level, water quantity, and flow that is likely to impair the designated uses of Seneca Waters.
(h) **Garbage, cinders, ashes, sludges, concrete waste and other refuse:** Seneca Waters shall be free from non-ceremonial waste such as animal carcasses, refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, motor vehicle parts, batteries, appliances, or tires in any amount
(i) **Temperature.**

(i) The change or rate of change in temperature, whether an increase or decrease, shall be controlled to ensure full protection of wildlife and support of Aquatic Life use and Ceremonial and Cultural use.

(ii) Cold Water Fishery (CF): For Waters that are designated for cold water fishery habitat, temperatures shall not exceed a daily (24 hour) maximum of 20 degrees Celsius or rolling seven-day average of the daily maximum of 15 degrees Celsius.

(iii) Warm Water Fishery (WF). For Waters that are designated for warm water fishery habitat, temperatures shall not exceed a daily (24 hour) maximum of 28 degrees Celsius or rolling seven-day average of the daily maximum of 25 degrees Celsius.

(iv) For all waters that are designated for either cold water fishery or warm water fishery habitat, seasonal temperature patterns and magnitudes suitable for overwintering, spawning and rearing will be maintained and protected in the places and at the times that overwintering, spawning and rearing occur.

(j) **Minerals/Salinity (total dissolved solids, chlorides, and sulfates):** The existing mineral content of Seneca Waters shall not be altered by municipal, industrial, or instream activities or other waste discharges that interfere with the designated uses of those waters. In no case shall discharges cause concentrations in rivers with a Water Supply designated use to exceed 250 mg/L of chlorides, 250 mg/L of sulfates and 500 mg/L of dissolved solids.

(k) **pH:** The pH of Seneca Waters shall not be permitted to fluctuate in excess of 1.0 unit over a period of 24 hours or outside the range of 6.5-8.5.

(l) **Dissolved Oxygen (DO):** The DO criteria for the protection of Aquatic Life in Seneca Waters designated for warm water fishery (WF) shall not be less than a daily (24 hour) average of 5.0 mg/L, and at no time less than 4.0 mg/L. For waters that are designated as cold water fishery (CF) and are used as spawning habitat by cold water fishes the DO standard shall be no less than 7.0 mg/L.

(m) **Radioactivity:** Concentrations of radioactive constituents shall not exceed EPA Safe Drinking Water Act standards. Radioactivity shall be kept at the lowest practicable levels, and in any event shall be controlled to the extent necessary to prevent harmful effects on public health and the environment.

Section 402: Toxic Substances

(a) Toxic substances shall not be present in Seneca Waters in quantities that are toxic to humans or aquatic life, that interfere with normal propagation, growth, and survival of sensitive indigenous aquatic life, or which would render the waters unsupportive of their designated uses.

(b) For toxic substances lacking published criteria, bioassay data for sensitive indigenous test species/life stages may be used to determine compliance with these narrative criteria.

(c) Water quality criteria for toxic substances are listed in Section B-2 of Appendix B.

(d) Note that any future criteria which may be derived for toxic substances, and added to Appendix B, shall be as protective as those which would be derived using the methodologies for calculating water quality criteria found in 40 CFR Part 132, found in Appendix C of this document.

Section 403: Biological Criteria

Seneca Waters shall support and maintain a balanced, native, and integrated community of aquatic organisms with species composition, diversity, and functional organization comparable to those of natural or minimally impacted water bodies of a similar type and region.

ARTICLE V. Antidegradation, Mixing Zones, Compliance Schedules, and Water Quality Standards Variances

Section 500: Antidegradation Policy and Implementation Methods

(A). Antidegradation Policy

(a) Tier 1: Existing instream water uses and the level of water quality necessary to protect existing uses shall be maintained and protected.

(b) Tier 2: Where the water quality exceeds levels necessary to support the protection and propagation of fish, shellfish, wildlife and recreation in and on the water, that water quality shall be maintained and protected unless the Seneca Nation finds, after full opportunity for intergovernmental coordination and public involvement, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the Seneca Nation shall assure water quality adequate to protect existing uses fully. Further, the Seneca Nation shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(i) Identification of Seneca Waters for the protections described in Paragraph (A)(b) of this section will be made on a parameter-by-parameter basis.

(ii) Before allowing any lowering of high-quality water, pursuant to Paragraph (A)(b) of this section, the Seneca Nation shall find, after conducting an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis identifies one or more practicable alternatives, the EPD shall find that a lowering of water quality is necessary only if one such alternative is selected for implementation and then only to the extent that the alternative would require the lowering of water quality.

(c) Tier 3: Where high quality waters constitute an Outstanding Seneca Resource Water, such as waters of National and Tribal parks and wildlife refuges and waters of exceptional recreational, ecological, or cultural significance, their water quality shall be maintained and protected, as provided in the definition of this term in Section 200. Except for certain short term and temporary changes, water quality cannot be lowered in such waters.

(i) Ohi:yo' (Allegany River) and Ga'dä:gësgë:ö' Gëhö:de' (Cattaraugus Creek) are hereby designated as Outstanding Seneca Resource Waters for their cultural, ecological, and ceremonial significance. No activity shall be permitted that would degrade their natural character, except for short-term subsistence or ceremonial use.

(d) In cases where potential water quality impairment associated with a thermal discharge is involved, the decision to allow such degradation shall be consistent with Section 316 of the Clean Water Act, 33 U.S.C. § 1326.

(e) This antidegradation policy shall be consistent with the Great Lakes Water Quality Initiative Antidegradation Policy, including all applicable sections of 40 C.F.R. Part 132, Appendix E, as they may be revised from time to time, and incorporated herein by reference.

(B). Antidegradation Implementation Methods

(a) Applicability. The antidegradation policy in Subsection (A) and these antidegradation implementation methods shall be applied to all Seneca Waters.

(i) The requirements of Subsections (A) and (B) of this section shall be followed when considering all requests to authorize new or expanded regulated activities. Regulated activities include, but are not limited to, any activity that requires a permit, license, or water quality certification pursuant to Sections 401, 402, and 404 of the CWA, 33 U.S.C. §§ 1341, 1342, and 1344.

(ii) Antidegradation protections will be addressed in new or reissued general permits authorized, implemented, or administered by the permitting authority either at the time the permitting authority develops and issues the general permit or upon review of an applicant's request to be covered by a general permit. The permitting authority will describe, in writing in the permit fact sheet, how the general permit is consistent with the antidegradation requirements of this subsection and the antidegradation policy in Subsection (A).

(b) Existing instream use protection consistent with Paragraph (A)(a). For all Seneca Waters, the EPD shall ensure that the level of water quality necessary to protect existing uses is maintained. To achieve this requirement, the EPD shall consider whether a regulated activity would lower the water quality to the extent that it would no longer be sufficient to protect and maintain the existing uses of that water body. If lowering of water quality would not protect and maintain the existing uses of that water body, then the EPD will not allow the lowering of water quality. Such consideration shall be based on all existing and readily available water quality-related data and information, as well as any additional water-quality related data and information submitted during the public comment period for the authorization.

(c) High Quality Water Protection consistent with Paragraph (A)(b) of this section. In determining which waters will receive high quality water protection consistent with Paragraph (A)(b), the SN will identify high quality water on a parameter-by-parameter basis. Each parameter that is determined to be high quality shall be considered and evaluated independently, consistent with this Paragraph (B)(c), at the time an applicant requests authorization to lower high water quality. A water body is high quality for a particular parameter if its water quality level exceeds the water quality criterion for that parameter in applicable sections of Article IV and Appendix B. The EPD shall ensure that no regulated activity that results in a lowering of water quality occurs unless the components outlined in Subparagraph (B)(c)(i) are available to the EPD and the EPD has made a finding consistent with Subparagraph (B)(c)(ii).

(i) When determining whether to authorize a lowering of water quality for one or more parameters that exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, the EPD will consider the following components and information:

(1) Identifying Information. Name of the applicant, a description of the nature of the applicant's business and the pollutants to be discharged, location of the discharge, the name of and any water quality data for the receiving water body, daily maximum and average flow to be discharged, and effluent characterization.

(2) Analysis of alternatives. Identification and evaluation of a range of practicable (as defined in Section 200) alternatives that would prevent or lessen the degradation associated with the proposed activity to determine whether the degradation of water quality is necessary. When the analysis of alternatives

identifies one or more practicable alternatives, the EPD shall find that a lowering of high water quality is necessary, consistent with Subparagraph (A)(b)(ii), only if one such alternative is selected for implementation and then only to the extent that the alternative would require the lowering of water quality.

(3) Socio-economic analysis. Identification and evaluation of the social and economic development benefits to the area in which the waters are located that will be foregone if the lowering of water quality is not allowed. Along with the analysis of alternatives, the socio-economic analysis is used to determine whether the lowering of high water quality will accommodate important economic and social development in the area in which the water is located. The "area in which the waters are located" shall be determined on a case-by-case basis and shall include all areas directly impacted by the proposed regulated activity. Factors that must be considered in the socio-economic analysis include, but are not limited to, the ecological and economic importance of the affected waters, the importance of the development to the affected community, and the socio-economic health of the affected community as determined by appropriate analytical methods.

(4) Any additional documentation requested by the EPD which, in the judgment of the EPD, is needed to decide whether to find that a lowering of water quality is necessary to accommodate important economic and social development in the area in which the water is located.

(ii) Once the EPD has the components and information required by Subparagraph (B)(c)(i), the EPD will use that information to make a finding as to whether the lowering of water quality is necessary to accommodate important social and economic development in the area in which the water is located.

(1) If the proposed lowering of high water quality is either not necessary or not important to accommodate social and economic development, the EPD shall deny the request to lower water quality.

(2) If the lowering of high water quality is necessary to accommodate important social and economic development goals, the EPD may allow a lowering to the high quality water as long as one of the alternatives identified in Subparagraph (B)(c)(i)(2) is selected for implementation and incorporated into the authorization for the activity. If no practicable alternative was identified by the analysis of alternatives but the lowering of high water quality will accommodate important social or economic development, then the EPD may allow the lowering of high water quality. If a non-degrading practicable alternative is selected, no lowering of the high quality water will occur, and the EPD will not allow the lowering.

(3) In no event will the EPD allow water quality to be lowered below the level required to fully protect existing and designated uses.

(4) To ensure the opportunity for public involvement, the EPD shall provide public notice and request public comment on the preliminary decision to allow a lowering of high water quality. The preliminary decision will provide relevant information regarding the lowering of high water quality, including the alternatives analysis, socio-economic analysis, the estimated amount of assimilative capacity available in the water body, and the estimated amount of

assimilative capacity to be utilized by the proposed activity. To the extent possible, public notice regarding the finding to allow a lowering of water quality will be coordinated with other required notices for public review.

(5) To fulfill intergovernmental coordination, the EPD shall notify local, state, and federal agencies that operate in the area impacted by the activity and request comment on the preliminary decision to allow a lowering of water quality in a high quality water based on whether it is necessary to accommodate important social and economic development in the area of the waters impacted by the activity.

(6) Before allowing any degradation of water quality, the EPD shall identify point sources and nonpoint sources regulated by the Seneca Nation that discharge to, or otherwise impact, the receiving water. The EPD shall coordinate with other agencies, as necessary, to assure compliance with the highest statutory and regulatory requirements for all new and existing point sources and/or all required cost-effective and reasonable best management practices for non-point source control. If compliance with the highest statutory and regulatory requirements for all new and existing point sources and all tribal-regulated cost-effective and reasonable best management practices for non-point sources cannot be assured, the EPD will not allow a lowering of high water quality.

(d) Outstanding Seneca Resource Water protection consistent with Paragraph (A)(c). For Seneca Waters assigned as Outstanding Seneca Resource Waters, the EPD shall ensure, through the application of appropriate controls on point sources and on nonpoint pollutant sources regulated by the Seneca Nation, that water quality is maintained and protected. No new or expanded point source discharges will be allowed to Outstanding Seneca Resource Waters except on a short term and temporary basis, consistent with Subparagraph (B)(d)(iii) below.

(i) Any person or entity may nominate a specific Seneca Nation Water to be assigned as an Outstanding Seneca Resource Water. The person or entity may transmit a written nomination to the EPD, at any time, with an explanation of why the water warrants Outstanding Seneca Resource protection. The EPD will determine whether the nominated water qualifies as an Outstanding Seneca Resource Water as described in Paragraph (B)(c).

(ii) The EPD will issue a public notice regarding the decision to assign a water as an Outstanding Seneca Resource Water. The EPD will maintain a comprehensive list of the Seneca Nation Waters that have been assigned as Outstanding Seneca Resource Waters consistent with Paragraph (A)(c).

(iii) The EPD may allow short-term, temporary water quality degradation in an Outstanding Seneca Resource Water only if the short-term, temporary degradation is limited to the shortest possible time, does not impact existing uses, and does not alter the essential or special characteristics that make the water an Outstanding Seneca Resource Water. Short-term means any period that is measured in the context of weeks to months, not years.

(e) In addition, in the case of BCCs, the antidegradation policy and implementation methods shall be applied consistently with the regulations at 40 C.F.R. Part 132 Appendix E (Great Lakes Water Quality Initiative Antidegradation Policy).

Section 501: Mixing Zone Policy

(A). In conjunction with the issuance of permits under CWA §§ 402 and 404, the Nation authorizes the use of mixing zones in Seneca Waters on a case-by-case basis, in accordance with the following provisions.

(a) Mixing zones, including their size, configuration, and location, will be authorized by EPD on a case-by-case basis in accordance with the provisions of this section at the time a permit is issued, renewed, or materially modified and will remain in effect as long as the permit remains in effect. Such an authorization is required before the permitting authority can use the mixing zone to determine the need for, or level of, effluent limits for a particular pollutant.

(b) Mixing zones will not be authorized for a pollutant when the receiving water does not meet water quality criteria for that pollutant, except where: (a) the effluent limits established using a mixing zone are consistent with an EPA-approved or EPA-established TMDL, and (b) the mixing zone meets the requirements of this section.

(c) Mixing zones will not be authorized where they may cause unreasonable interference with or danger to designated uses, including, but not limited to, causing or containing any of the following:

(i) Impairment to the integrity of the aquatic community, including interference with successful spawning, egg incubation, rearing, or passage of aquatic life.

(ii) Discharges into shellfish beds.

(iii) Lethality to aquatic life passing through the mixing zone.

(iv) Heat in the discharge that may cause thermal shock, lethality, or loss of cold water habitat or may attract aquatic life to a toxic discharge.

(v) Bioaccumulative pollutants in the discharge, consistent with the requirements of 40 C.F.R. 132 Appendix F, Procedure 3.C (Great Lakes Water Quality Initiative Implementation Procedures).

(vi) Pollutant concentrations that exceed maximum contaminant levels at drinking water intakes.

(vii) Discharges to areas used for ceremonial submersion, subsistence fishing, or where cultural plant harvesting occurs, to ensure unimpeded access to clean and spiritually intact waters.

(viii) Conditions that impede or prohibit recreation in or on the waterbody.

(d) Mixing zones shall not overlap.

(e) Water quality within an authorized mixing zone may exceed chronic water quality criteria for only those parameters approved by the EPD. Acute water quality criteria may be exceeded for such parameters within the zone of initial dilution inside the mixing zone. Acute criteria shall be met as near to the point of discharge as practicably attainable. Narrative criteria in paragraph (c) of this subsection shall apply within the mixing zone. No water quality criteria shall be exceeded outside the boundary of a mixing zone as a result of the discharge for which the mixing zone was authorized.

(f) Mixing zones shall be no larger than necessary, and the concentrations of pollutants present shall be minimized. Mixing zones shall meet the following restrictions:

(i) Mixing zones in flowing waters shall not:

(1) Extend in a downstream direction for a distance from the discharge port(s) greater than 300 feet plus the depth of water over the discharge port(s)

(2) Extend upstream for a distance of over 100 feet;

(3) Utilize greater than 25% of the critical low flow; nor

(4) Occupy greater than 25% of the width of the waterbody.

(ii) Mixing zones in nonflowing waters shall <u>not</u>:

(1) Exceed 10% of the volume of the waterbody;

(2) Exceed 10% of the surface area of the waterbody (maximum radial extent of the plume regardless of whether it reaches the surface); nor

(3) Extend beyond 15% of the width of the waterbody.

(g) The following elements shall be considered when designing an outfall:

(i) Promote rapid mixing to the extent practicable through careful location and outfall design;
(ii) Diffusers will be required; and
(iii) Mixing zones that result in shore-hugging plumes will not be authorized.

Section 502: Compliance Schedule Authorizing Provision

(A). The Nation authorizes the use of compliance schedules, on a case-by-case basis, for water quality-based effluent limits in National Pollutant Discharge Elimination System permits, when appropriate, and consistent with 40 C.F.R. §122.47 (NPDES Permits – Compliance Schedules) and 40 C.F.R. §132 Appendix F, Procedure 9 (Great Lakes Water Quality Initiative Implementation Procedures – Compliance Schedules) (as applicable), for new, recommencing, or existing dischargers to require compliance as soon as possible with water quality-based effluent limitations calculated to meet water quality standards issued or revised after July 1, 1977. 40 C.F.R, §§122.47 and 132 Appendix F, Procedure 9 are included in Appendix C of this document.

(B). Notwithstanding the foregoing, the Nation does not authorize the use of compliance schedules for NPDES permits for discharges into Outstanding Seneca Resource Waters.

Section 503: Water Quality Standards Variances

The EPD may consider issuing WQS variances pursuant to this section. A request for a WQS variance shall include documentation of consultation with affected community members and medicine keepers to evaluate the cultural and ecological consequences. WQS variances will not be granted where the change would interfere with sacred water use or the spiritual health of the Nation. Any WQS variances issued subsequent to the enactment of this section must be consistent with the regulations at 40 C.F.R. §131.14 (Water Quality Standards Variances) and 40 C.F.R. §132 Appendix F, Procedure 2 (as applicable), and are included in Appendix C of this document. WQS variances are subject to EPA review and approval or disapproval. A WQS variance is not effective for CWA purposes and thus cannot be implemented for purposes of NPDES permitting or CWA section 401 certification until EPA has approved it under CWA section 303(c).

Appendix A – Seneca Waters, Classifications, and Designated Uses

Section A-1: Seneca Nation Waterbody Classifications

Tables A-1 through A-3 below contain the classifications and descriptions for each water of the Seneca Nation for the Allegany, Cattaraugus, and Oil Springs Territories. Each water's classification contains either a cold water fishery (CF) or warm water fishery (WF) designation. The cold water fishery (CF) designation indicates that the cold water fishery designated use is applicable to that water, and the warm water fishery (WF) designation indicates that the warm water fishery designated use is applicable. Waters with a season-limited cold water fishery designation are indicated as $(CF)^{S}$. Maps of the Seneca Waters in each Seneca Nation Territory are included in Figure sets 1-4 and referenced throughout the geographic descriptions of each waterbody in Tables A-1 through A-3.

Table A-1: Seneca Nation Waterbody Classifications and Descriptions: Allegany Territory

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
Birch Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from the easternmost portion of the Allegany Territory, north of Interstate 86 (I-86) and Birch Run Road, and Old Rail, downstream to the confluence of the Allegany River (River) from the southeast, for a total of 0.22 miles, as shown on Figure 2.1.
Ninemile Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading 0.68 miles from the northeast of the eastern most portion of the Allegany Territory and to the east of North Ninemile Road, draining southwest, until meeting at the confluence of the Allegany River, as shown on Figure 2.1.
Tenmile Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading 0.66 miles from the northern boundary of the Allegany Territory, adjacent to the east of Ten Mile Road, crossing beneath Ten Mile Road to the south, running adjacent to the west of Tenmile Creek, crossing beneath Route 219 and the Southern New York & Pennsylvania Railroad tracks, before draining into the Allegany River, as shown on Figure 2.1.
Allegany River (The Ohi:yo') – Upstream Segment (ARUS)			
ARUS-001	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from the eastern most portion of the Allegany Territory and Territory boundary, east to west, meeting the confluences of Birch Run and Ninemile Creek, respectively for approximately 1.75 miles, as shown on Figure 2.1.
ARUS-002	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from the confluence of Tenmile Creek, east to the west, to the confluence of Chipmunk Creek for 2.11 miles. This segment runs through a portion of land that is to the south of Route 219, and to the north of I-86 and meets at the confluence of Chipmunk Creek, as shown on Figure 2.1.
ARUS-003	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading 1.84 miles from the confluence of Chipmunk Creek, running east, adjacent to the north of South Nine Mile Road, beneath Route 219 and railroad tracks, before meeting the confluence of the Tunungwant Creek, as shown on Figure 2.1.
Ichunuagwant "Tunungwant" Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading 1.29 miles from a southeastern portion of the Allegany Territory boundary, from the south to the north, running parallel to the east of Parkside Drive/South Carrollton Road, before meeting the

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			confluence of Allegany River, as shown on Figure 2.1.
ARUS-004	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from the confluence of the Tunungwant Creek, adjacent to the east of South Carrollton Road, crossing beneath the I-86 bridge, then running adjacent to the east of I-86, for 1.17 miles, until reaching the confluence of Carrollton Run, as shown on Figure 2.1 and 2.2.
Carrollton Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading 0.76 miles from a southwestern boundary between the Allegany Territory and Allegany State Park, and draining to the northeast towards the Allegany River, Carrollton Run crosses beneath Carrollton Road and I-86 before meeting the Allegany River, as shown on Figure 2.2.
Leonard Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading 0.49 miles from a western boundary between the Allegany Territory and Allegany State Park, and draining to the east towards the Allegany River, Leonard Run crosses beneath I-86 before meeting the Allegany River, as shown on Figure 2.2.
ARUS-005	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading slightly in a northwesterly trajectory from the confluence of Carrollton Run, running adjacent to the east of I-86, meeting the confluence of Leonard Run, continuing to the confluence of Windfall Creek for 1.64 miles, as shown on Figure 2.2.
Windfall Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from an eastern boundary of the Allegany Territory, adjacent to the south of Windfall Road, leading to the west, crossing beneath Route 219 and Carrollton Village Road, for 1.54 miles before emptying into the Allegany River, as shown on Figure 2.2.
ARUS-006	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Running 3.23 miles from the confluence of Windfall Creek (Figure 2.2), adjacent to the east of I-86, and flowing slightly to the northwest and then turning towards the west to meet the confluence of Great Valley Creek. This stretch of the Allegany River also runs adjacent to the west of the Western New York & Pennsylvania and the Buffalo and Pittsburg railroad tracks, as shown on Figure 2.3.

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
Great Valley Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 2.3, Great Valley Creek runs for 0.91 miles, from a northern boundary of the Allegany Territory, coming from near Wildwood Avenue and Kill Buck, crossing beneath Route 219 and railroad tracks, before draining into the Allegany River.
Allegany River – Middle Segments (ARMS)			
Allegany River – Middle Segment (ARMS)-001	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the confluence of Great Valley Creek, downstream towards the west for 1.97 miles, as shown on Figure 2.4. This stretch of the Allegany River runs adjacent to the north of I-86 and begins entering the Salamanca City Limits, passing beneath the Clinton Street and Main Street Bridges, before meeting the confluence of Titus Run. This stretch of the Allegany River is the eastern most portion of the Kinzua Dam and "Allegheny" River flood control area, where through the "Flood Control Acts of 1936 and 1938," the USACE was authorized, via eminent domain, to take approximately 10,000 acres of land from the Seneca Nation, as a method to control the drainage area of the River. The USACE controls reservoir elevations within the lands of the Allegany Territory, at and below the 1,365-foot contour. US v. 21250 Acres of Land Etc., 161 F. Supp. 376 (D.S.D. 1958). https://apps.dtic.mil/sti/tr/pdf/ADA212430.pdf
Titus Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from a source within Allegany State Park, Titus Run enters the Allegany Territory from the south, runs beneath I-86 to the northwest and then to the northeast for 1.05 miles, before emptying into the Allegany River, as shown on Figure 2.4.
Newton Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Newton Run enters the Allegany Territory from along a northern territory boundary. Running south, Newton Run flows adjacent to the west of Erie Street before crossing beneath West State Street. Newton Run then flows adjacent to the south side of West State Street, before draining into the Allegany River for 0.84 miles, as shown on Figure 2.4.
ARMS-002	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from the confluence of Titus Run and downstream to the west, this stretch of the

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			Allegany River runs 0.98 miles, as shown on Figure 2.4.
Little Valley Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from a northern boundary of the Territory, running in between and parallel with Center Street and North State Street for 0.64 miles before draining into the Allegany River, as shown on Figure 2.4 and 2.5.
ARMS-003	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from Little Valley Creek downstream to the west southwest for 1.6 miles, until meeting the confluence of Bucktooth Run, as shown on Figure 2.5. This portion of the River runs adjacent to the north of a portion of Front Avenue and Old Route 17.
Bucktooth Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 2.5, Bucktooth Run leads from a northern boundary of the Allegany Territory, running adjacent to the southwest of Bucktooth Run Road. This Run goes beneath Jimerson Road, before draining into the Allegany River.
ARMS-004	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the confluence of Bucktooth Run, the River runs to the southwest, running adjacent to the southeast of Jimerson Road and to the west of Old Route 17 for 2.34 miles, as shown on Figure 2.5. Breeds Run also drains into this section of River, from the east.
Breeds Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Leading from a source within the Allegany State Park, Breeds Run enters the Allegany Territory from the southeast, as shown on Figure 2.5. This Run flows adjacent to the northeast of Breeds Run Road, draining to the northwest for 1.01 miles, crossing beneath I-86 and then drains into the River.
Drakes Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Entering from the northern boundary of the Allegany Territory, Drakes Run runs adjacent to the northeast of Drake Run Road, before crossing beneath the Sawmill Run Road and draining into Sawmill Run. This feature is 0.74 miles in length, as shown on Figure 2.5.
Sawmill Run (1)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Entering Allegany Territory from the south of Sawmill Run Road, this water runs 0.5 miles to the southeast, before meeting the confluence of Drakes Run and continuing another 0.49 miles

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			(crossing beneath Jimerson Road) before draining into the River, as shown on Figure 2.5.
ARMS-005	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Flowing south for 1.63 miles from the confluence of Sawmill Run, running parallel and to east of Sawmill Run Road, and to the west of Old Route 17, meeting at the confluence of Sunfish Run, as shown on Figures 2.5 and 2.6.
Sunfish Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 2.6, Sunfish Run enters the Allegany Territory from the northwest, adjacent to the northeast of Sunfish Run Road. This water flows 0.97 miles to the southeast, crossing beneath Sawmill Run Road, before draining into the River.
ARMS-006	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from Sunfish Run, running parallel and in between North Bank Perimeter Road and Old Road 17, the River flows 1.62 miles to the southwest, crossing beneath Red House Bridge, before meeting the confluence of Meetinghouse Run, as shown on Figures 2.6 and 2.7.
Meetinghouse Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 2.6 and 2.7, Meetinghouse Run enters the Allegany Territory from the northwest, running in a southeastern and southerly direction for 1.18 miles. Meetinghouse Run crosses beneath North Perimeter Road and Red House Road before emptying into the River.
ARMS-007	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the conveyance of Meeting House Run for 0.37 miles, before meeting the confluence of Red House Brook, as shown on Figure 2.7.
Bay State Brook	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 2.7, Bay State Brook enters the Allegany Territory from the southeast and the Allegany State Park and runs for 0.62 miles, on-Territory and then intercepts Red House Brook. This Brook begins within the limits of Allegany State Park and runs parallel with, or beneath Bay State Road and beneath I-86 before meeting Red House Brook.
Red House Brook	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 2.6 and 2.7, Red House Brook leads from a southeastern boundary of the Allegany Territory, near I-86 and Bay State Road and runs in an easterly direction for 1.79 miles, before meeting Bay State Brook. After meeting Bay State Brook, Red House Brook runs another 0.64 miles, adjacent to the northeast of I-86, before draining into the River. Red House Brook

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			originates from within a southeastern portion of Allegany State Park, adjacent to the west of Allegany State Park Route 2.
Allegany River – Downstream Segments (ARDS)			
Allegany River – Downstream Segments (ARDS)-001	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	As shown on Figure 2.7, leading from the conveyance of Red House Brook, this segment of the River, runs mostly from the east to west for 1.68 miles before meeting the conveyance of Robinson Run. This segment of the River runs parallel to the north of I-86, and south of Red House Road. When the USACE transitions between the summer and winter pool elevations of the reservoir, this is one of the first most easterly portions of the River, where the change in elevation is visually apparent between the seasons.
Robinson Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Robinson Run leads from the northern boundary of the Allegany Territory in a southeasterly direction. This Run courses beneath North Bank Permitter Road and Red House Road for 0.64 miles, before emptying into the River, as shown on Figure 2.7.
ARDS-002	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from Robinson Run, in a southwesterly direction for 0.66 miles until meeting the conveyance from Cricks Run. This portion of the River runs beneath I-86 bridge, as shown on Figure 2.7.
Cricks Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Cricks Run leads from within the limits of the Allegany State Park, adjacent to Holts Run Road from the southeast. Cricks Run enters the Allegany Territory along a southern boundary, passing beneath Quaker Run Road, and leading 0.63 miles before emptying into the Allegany River, as shown on Figure 2.7.
ARDS-003	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the conveyance of Cricks Run, this segment of River runs in a southwesterly direction for 1.47 miles, before meeting the conveyance of Cold Spring Creek, as shown on Figure 2.7.
Cold Spring Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Cold Spring Creek, as shown on Figures 2.7 and 2.8, leads from a northern boundary of the Allegany Territory, adjacent to the south of Bunker Hill Road. Cold Spring Creek runs through this section of Territory, adjacent to the west of Bunker

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			Hill Road, crossing beneath railroad tracks, Old Route 17, and I-86 for 4.35 miles, before emptying into the Allegany River, as shown on Figures 2. 7 and 2.8.
ARDS-004	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the conveyance of Cold Spring Creek, flowing to the southwest, this section of River runs for 4.08 miles before meeting the conveyance of Pine Creek. Old Route 280 runs along the northwestern bank of this portion of the River, while Route 280 runs along the River's opposite bank, as shown on Figures 2.7 and 2.9.
Pine Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Pine Creek leads from a within Allegany State Park and enters the Allegany Territory along an eastern boundary. Pine Creek runs for 0.61 miles, passing beneath Route 280, before emptying into the Allegany River, as shown on Figures 2.7 - 2.9.
ARDS-005	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from Pine Creek and flowing in a south, southwest direction for 2.3 miles before meeting the conveyance of Quaker Run, as shown on Figures 2.8 and 2.9. When the USACE transitions between the summer and winter pool elevations of the reservoir, this portion of the River is highly variable and changes dramatically. In the summer months (summer pool elevations), the river channel in this section of the River is wide and undefined. Whereas, when the winter pool elevations are met, the channel becomes narrow and defined, with mud flats on either side of the top of bank of the channel that remains.
Quaker Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)^{S}	Quaker Run enters the Allegany Territory at a point along the eastern boundary and runs a short distance (0.48 miles) before draining into the Allegany River. Quaker Run leads from within the Allegany State Park and Quaker Lake Spillway and Dam, as shown on Figures 2.9 and 2.10.
ARDS-006	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from Quaker Run and flowing in a southerly direction for 2.2 miles, intercepting the confluence of Wolf Run at a 90-degree bend in the River, where a surface impoundment was constructed to manage water elevations and support a roadway, as shown on Figures 2.9 and 2.10. Route 280 is adjacent to the east of this

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			segment of the River. Allegany State Park bounds this section of the Territory, to the east of the River.
Wolf Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Wolf Run originates from the south within the Allegany National Forest, in Pennsylvania. Wolf Run flows in a northwesterly direction and enters a portion of the Allegany Territory from the south, which creates a ponded area due to a surface impoundment, before draining via a culvert into the River. This segment of Wolf Run, as it flows across between the Territory boundary and the River is 0.8 miles, as shown on Figures 2.9 and 2.10.
ARDS-007	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the conveyance of Wolf Run, the River flows mostly in a westerly direction, meeting the conveyances of Hotchkiss Run and Pierce Run. After Pierce Run, the River turns to the southwest/south meeting the conveyances of Bone Run, Peters Creek and Sawmill Run, before flowing to the border between the Seneca Nation and Pennsylvania, as shown on Figures 2.10 and 2.11. This segment of River is 4.1 miles.
Hotchkiss Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Hotchkiss Run enters the Allegany Territory from the northwest. Once crossing the Territory boundary, Hotchkiss Run, flows to the southwest, forms an area of ponded water, where a surface impoundment was constructed to manage water elevations and support a roadway, as shown on Figures 2.9 and 2.10. Hotchkiss Run flows beneath West Perimeter Road, via a culvert, before emptying into the Allegany River/Reservoir. This segment is 1.82 miles.
Pierce Run	AGR, AL, CC, HC, N, PC, SC, WS	$A(CF)^{s}$	Leading from the northwest, Pierce run flows on-Territory from a point beyond West Perimeter Road and Pierce Run Road. From where Pierce run flows on-Territory to the center point of the Allegany River/Reservoir, this segment is 0.59 miles, as shown on Figure 2.10.
Bone Run	AGR, AL, CC, HC, N, PC, SC, WS	$A(CF)^{s}$	Upstream from the Allegany Territory, Little Bone Run converges with Bone Run, and flows to the southeast, draining into a wetland area formed beyond the western side of a surface impoundment and West Bank Perimeter Road, that was constructed to manage water elevations and

Allegany Territory			
Waterbody Name	**Designated Uses**	**Class**	**Description**
			support a roadway. A culvert connects Bone Run to the Allegany River/Reservoir, but not before reaching the northwestern boundary of the Allegany Territory. Once on Territory, Bone Run flows for 0.47 miles from the territory boundary to the center line of the Allegany River/Reservoir, as shown on Figure 2.10.
Peters Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Leading from the southeast and from within the Allegany State Park, Peters Creek enters the Allegany Territory from the east and flows for 0.45 miles before reaching the center line of the Allegany River/Reservoir, as shown on Figures 2.10 and 2.11.
Sawmill Run (2)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)^{S}	Leading from the west, Sawmill Run enters the Allegany Territory, flowing to the west for 1.18 miles, past the Onoville Marina before meeting the center line of the Allegany River/Reservoir, as shown on Figures 2.10 and 2.11.
State Line Run	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)^{S}	Leading from the west and flowing to the east, State Line Run converges with Fishburn Run (0.11-mile segment) flowing on-Territory from Pennsylvania. From the western boundary of the Allegany Territory, State Line Run flows for 1.10 miles before meeting the center line of the Allegany River/Reservoir, as shown on Figures 2.10 and 2.11.

Table A-2: Seneca Nation Waterbody Classifications and Descriptions: Cattaraugus Territory

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
Cattaraugus Creek (Ga'dä:gësgë:ö' Gëhö:de') Upper – CCU			
Cattaraugus Creek-Upstream Segments (CCU) CCU-001	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.1, starting at the southwestern corner of the Cattaraugus Territory, the Cattaraugus Creek enters the Territory to the north of Prospect Street and Indian Hill Road. Leading 1.3 miles to the northwest, this portion of the Creek intercepts unnamed tributaries from the south and southwest.
CCU-002 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.1, several unnamed minor tributaries drain into this southern most portion of the Cattaraugus Creek, on-territory, leading from

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
			the south, southwest, and east. The two longest unnamed tributaries are 0.90 and 0.74 miles in length and begin within the Cattaraugus Territory. The other unnamed tributaries, as shown on this Figure are approximately 0.55 miles in length and drain from the south and originate off-territory.
CCU-003 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	The unnamed tributaries, as shown on Figure 3.1, range from 0.24 miles to 0.9 miles in length. Two separate branches of an unnamed tributary, begin to the north and south of Allen Steet, flow across the southeastern portion of the Cattaraugus Territory and then merge to form one linear surface water feature~~.~~, before emptying into the Cattaraugus Creek. The longest length of this stretch is 0.92 miles.
CCU-004 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 3.1 and 3.2, two unnamed minor tributaries lead from the southwest, from near Indian Hill Road and drain into the Cattaraugus Creek. These tributaries are each approximately 1.61 and 1.22 miles in length, respectively.
CCU-005	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 3.1 and 3.2 the Cattaraugus Creek flows mostly in a north, northwesterly direction for 1.41 miles, meeting the conveyances of several minor tributaries.
CCU-006 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	To the east of the Cattaraugus Creek, but west of Route 438, as shown on Figures 3.1 and 3.2, in the southeast, two unnamed tributaries merge and become one surface water that drain to the Cattaraugus Creek. In total, these unnamed tributaries make up approximately 2.17 miles of Seneca Waters..
CCU-007 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Two unnamed tributaries, enter the Cattaraugus Territory from the west, as shown on Figure 3.2. One of the tributaries, totaling 1.61 miles flows from the west, starting near Indian Hill Road, to the northeast, before emptying into the Cattaraugus Creek. Another minor tributary, located to the north of the previous, coming from near Mackinaw Road. It flows mostly in a northeasterly direction for 1.22 miles, before draining into the Creek.

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
CCU-008	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Beginning at the conveyance of the southerly most minor tributary of CCU-007, as shown on Figure 3.2, this stretch of the Cattaraugus Creek flows in a northwesterly direction for 1.68 miles before leaving the Cattaraugus Territory, as an oxbow in the Creek, near Eaton Road, and then flowing back on-territory, as shown in Figure 3.3.
CCU-009 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.2, a small surface water feature, can be seen to the east of the Cattaraugus Creek, but west of Route 438. This 0.33 unnamed tributary flows to the west, draining into the Cattaraugus Creek.
Big Sister Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	In the east-central portion of the Cattaraugus Territory, tributaries of Big Sister Creek originate on territory and then off-territory to the east, as shown on Figure 3.3. Approximately 0.63 miles of Big Sister Creek are on-Territory, then flow to the north and off-territory.
Cattaraugus Creek Middle – CCM			
Cattaraugus Creek Middle (CCM)-001	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	From the Cattaraugus Territory boundary by Water Street to the west, and Bush Road to the East, this stretch of the Creek flows for 1.79 miles to the northwest, as shown on Figure 3.4. The Cattaraugus Creek flows beneath the Versailles Bridge, before meeting the confluence of Little Indian Creek from the west.
Little Indian Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.4, Little Indian Creek and two tributaries associated with it, flows from the southwest, to the northeast, from a southcentral boundary of the Cattaraugus Territory. It crosses beneath a bridge on Burning Spring Road. This section of Little Indian Creek, from the Territory boundary to where it empties into the Cattaraugus Creek is approximately 0.88 miles in length.
Native Brook Trout Stream	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	The Native Brook Trout Stream, as shown on Figure 3.4 and Figure 3.10 consists of two surface water features (north and south branches), that starts to the east of Versailles Plank Road. It then flows beneath Route 438 to the northeast, then to the west beneath Versailles Plank Road again, meeting another minor tributary that splits into two surface water features. One feature, the "northern" stream, drains to the northwest, and

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
			then flows to the southwest, crossing beneath Route 438 and then meeting the original stream (southern branch) that it split from before emptying into the Cattaraugus Creek. The southern-located branch of the stream, after splitting from the other branch, flows beneath Route 438, then turns and flows mostly to the west and meets the northern branch which, as previously described, flows into the Creek. This stream system includes approximately 3.52 miles of Seneca Waters.
CCM-002 (unnamed tributary)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	This minor tributary, starting to the southwest and beyond the intersection of Van Vleck Road and Burning Springs Road, as shown on Figures 3.4 and 3.5 flows for 0.72 mile and drains into the Cattaraugus Creek. This tributary is just downstream of Little Indian Creek
CCM-003	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 3.4 and 3.5, this segment of the Creek, starting at the confluence of Little Indian Creek and flowing northwest runs for 1.57 miles before meeting the confluence of Clear Creek.
CCM-004 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 3.4 and 3.5, an unnamed minor tributary leading from the south, from a point just north of Wardtown Road, flows for 1.35 miles to the north, draining into the Cattaraugus Creek. However, prior to draining into the Creek, a 0.12-mile segment of this unnamed tributary splits from it, and drains into the Creek, just upstream from its original course.
CCM-005 (unnamed tributaries)	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figures 3.5, 3.6, and 3.9, a collection of surface waters encompassing 2.36 miles, is located to the east of Big Indian Creek. The main branch of this unnamed tributary begins off-territory to the south, from beyond Wardtown Road and flows to the north, crossing beneath Versailles Silver Creek Road, and then running on-territory. As this tributary flows towards Cattaraugus Creek, three other unnamed surface waters converge into the main tributary, prior to flowing into the Creek.

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
North Branch Clear Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	The North Branch of Clear Creek, as shown on Figures 3.11 and 3.12, begins at a point to the east of the Cattaraugus Territory. From there, it flows into the Cattaraugus Territory, from the east and only 0.52 miles of the North Branch of Clear Creek is on-Territory, before it meets the confluence of Clear Creek.
Clear Creek	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.12, Clear Creek enters the Cattaraugus Territory from the east and 0.61 miles of it flows on-Territory before meeting the confluence of its North Branch. From there, Clear Creek continues to flow to the west for 0.42 miles before meeting the confluence and a series of other minor tributaries, that together equal 0.99 miles (Figure 3.12). From that point, as shown on Figure 3.11, Clear Creek flows to the north towards Seneca Road for 1.05 miles, meeting an unnamed tributary from the northeast, originating from near Longhouse Road. This segment is 1.25 miles. Clear Creek then flows 2.61 miles to the northwest towards the intersection of Versailles Plank Road and Seneca Road, as shown on Figure 3.11. An unnamed tributary, flowing from the south, meets Clear Creek prior to it flowing beneath Versailles Plank Road. As shown on Figure 3.10, this segment of Clear Creek meets two unnamed tributaries from the northeast, which together equal 2.63 miles and originate from beyond the eastern side of Versailles Plank Road. The segment of Clear Creek between these unnamed tributaries is 0.92 miles. Beyond the northern tributaries, Clear Creek meanders for 2.65 miles to the west and south, crossing beneath Route 438 before emptying into the Cattaraugus Creek, as shown on Figure 3.5.
CCM-006	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Starting from the Confluence of Clear Creek, and flowing from the east to the west, as shown on Figures 3.5 and 3.6, this segment of the Cattaraugus Creek is approximately 4.08 miles in length. This section of the Creek varies in form and feature, as often as from season to season, as it is prone to washout and the main channel drifts. In the westerly most section of CCM-006, the

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
			main channel of the Creek splits, and approximately 1.4 miles of channel flows to the northeast before turning to the northwest and meeting the main channel again. This section of the Cattaraugus Creek ends prior to crossing beneath the Interstate 90 (I-90) bridge.
CCM-007	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Starting to the west of CCM-005, CCM-007 encompasses all of the unnamed tributaries to the west of Big Indian Creek, and Big Indian Creek itself, including 4.86 miles of surfaces waters, as shown on Figures 3.6 and 3.9. Big Indian Creek originates off-Territory, from the south and crosses beneath Versailles Road before coming on-Territory. The two unnamed tributaries, with multiple branches flowing into them, to the west of Big Indian Creek, flow from the south and east and drain into the Cattaraugus Creek, just west and slightly downstream of Big Indian Creek.
CCM-008	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	On the northern side of the Cattaraugus Creek, as shown on Figure 3.5, 3.9, and 3.10, an unnamed tributary 2.69 miles in length starts to the east of Brant Reservation Road. It then flows in a southwesterly direction, flows beneath Route 438 and then empties into the Cattaraugus Creek, downstream of Clear Creek (Figure 3.9).
CCM-009	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.6, a 0.44-mile unnamed tributary flows from the southwest to the northeast, draining into the Cattaraugus Creek.
CCM-010	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.6, an unnamed tributary starting near Wheeler Brook south of the Territory, flows to the north. It comes on-Territory along a western boundary, near Versailles and Buffalo Roads. Once on-Territory, this tributary flows for 1.21 miles in a northeasterly direction before emptying into the Cattaraugus Creek.
CCM-011	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	In the southwestern corner of the Cattaraugus Territory, as shown on Figure 3.6, three unnamed tributaries flow from the south to the north, encompassing 2.13 miles of surface waters, before draining into the Creek.

Cattaraugus Territory			
Water Body	**Designated Uses**	**Class**	**Description**
Cattaraugus Creek Downstream – CCD			
Cattaraugus Creek Downstream (CCD)-001	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	Starting just to the east of I-90, this segment of the Cattaraugus Creek flows beneath the I-90 bridge in a northwesterly direction towards Lake Erie, as shown on Figure on Figure 3.6. This segment of the Creek is 3.43 miles and flows beneath a bridge on Route 20 and two railroad bridges, before emptying into Lake Erie. Note that in this segment of the Creek, just downstream of the I-90 bridge, the Cattaraugus Territory boundary is the Cattaraugus Creek, which is then also bisected from bank to bank. Therefore, some of the Creek in this segment is on-Territory, and some of it is off-Territory.
CCD-002	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 3.7 and 3.8, this unnamed tributary of the Cattaraugus Creek flows east into the Creek for 1.54 miles. It is to the south of Old Lakeshore Road and then north of Nation Beach Road.
CCD-003	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	This unnamed tributary has two inlets that are fed from Cattaraugus Creek, as shown on Figure 3.7. One inlet starts from a point along the Creek, and flows to the west for 0.63 miles, south of Nation Beach Road, before draining into the other portion of this feature. The other inlet of this feature flows from the Creek in a northeasterly direction, meeting the other portion of this unnamed feature.
Lake Erie	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	As shown on Figures 3.7 and 3.8, starting from at point just west and beyond the break wall at the mouth of Cattaraugus Creek, these Seneca Waters extend to the north for 1.01 miles along the shoreline of Lake Erie. The territorial boundary extends approximately 330 feet west out into Lake Erie.

Table A-3: Seneca Nation Waterbody Classifications and Descriptions: Oil Spring Territory

Oil Spring Territory			
Seneca Nation Water Body	**Designated Uses**	**Class**	**Description**
Cuba Lake	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	As shown on Figure 4.1 and 4.2, the southernmost portion of Cuba Lake (Lake) is located in the north-central portion of the Oil Spring Territory. West Shore Cuba Lake Road bounds the Lake to the west, and South Shore Cuba Lake Road bounds the Lake to the east.
Cuba Lake Outlet	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Starting from the territorial boundary, Cuba Lake Outlet flows to the south from Cuba Lake, for 1.3 miles, to the southern boundary of the Oil Spring Territory, as shown on Figures 4.1 through 4.4. The northern limits of the Cuba Lake Outlet are composed of a spillway structure that is referred to as the Cuba Lake Outlet Spillway Dam. The outlet flows south beneath the South Shore Cuba Lake Road, then after Oil Spring Park Road, it flows to the west, toward Cuba Lake Road, and then to the south again.
OST-001	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	As shown on Figures 4.1 through 4.3, an unnamed tributary referred to as OST-001, flows from the western boundary of the Oil Spring Territory to the east for 0.66 miles, runs beneath Cuba Lake Road and then South Shore Cuba Lake Road, before emptying into Cuba Lake.
OST-002	AGR, AL, CC, HC, N, PC, SC, WS	A(WF)	Starting from the western territorial boundary, surface water feature OST-002 runs 0.41 miles to the east, crosses beneath Cuba Lake Road, and then empties into the Cuba Lake Outlet, as shown on Figures 4.1 and 4.3.
OST-003	AGR, AL, CC, HC, N, PC, SC, WS	A(CF)	As shown on Figure 4.1, a tributary of Oil Creek begins in the eastern portion of Oil Spring Territory, and flows 0.07 miles to the east, before leaving the territorial bounds.

Figures 1.1 – 1.4: Seneca Nation Territory

Figure 1.1: Locational Map of the Territories

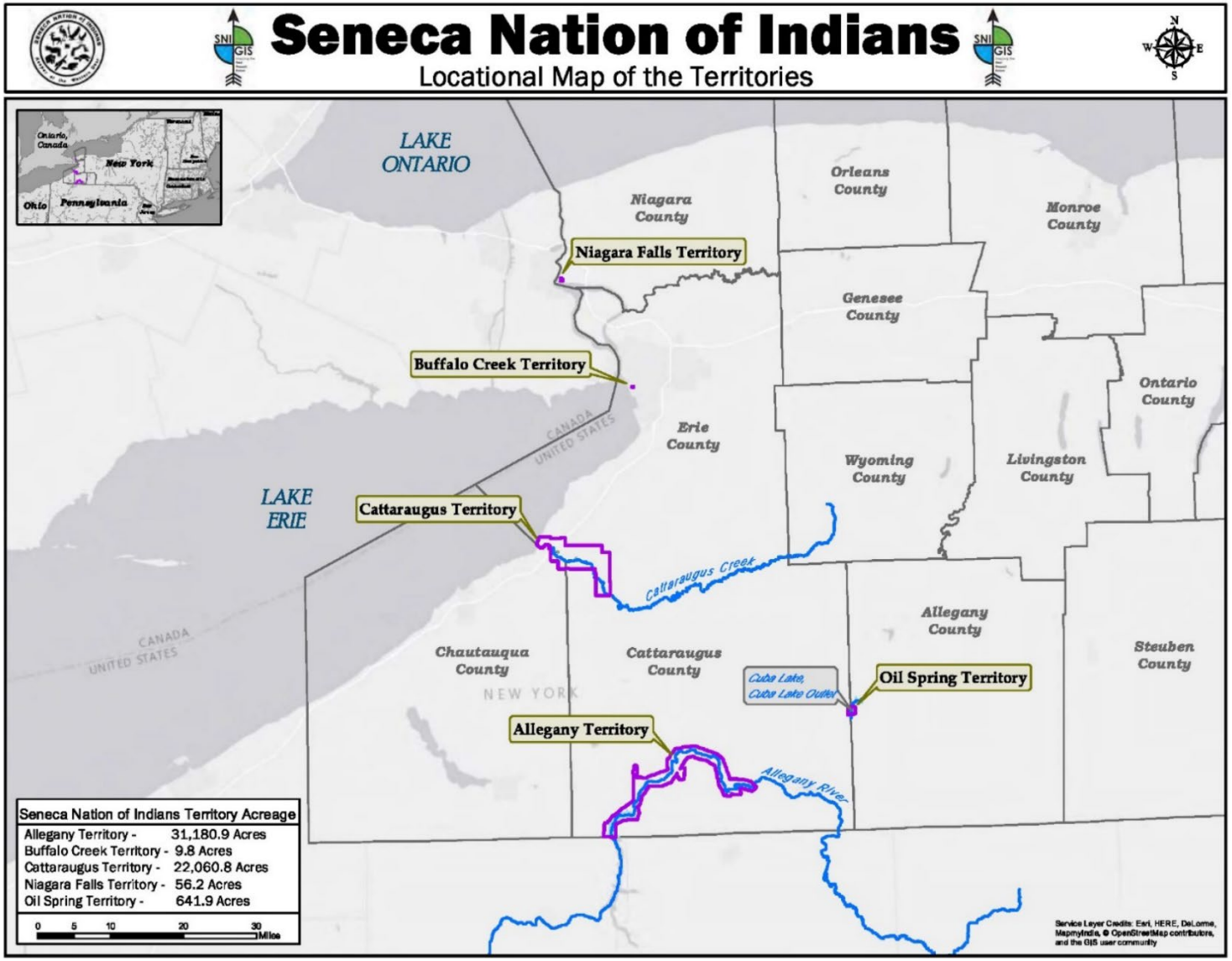


Figure 1.2: Allegany Territory – Water Resources

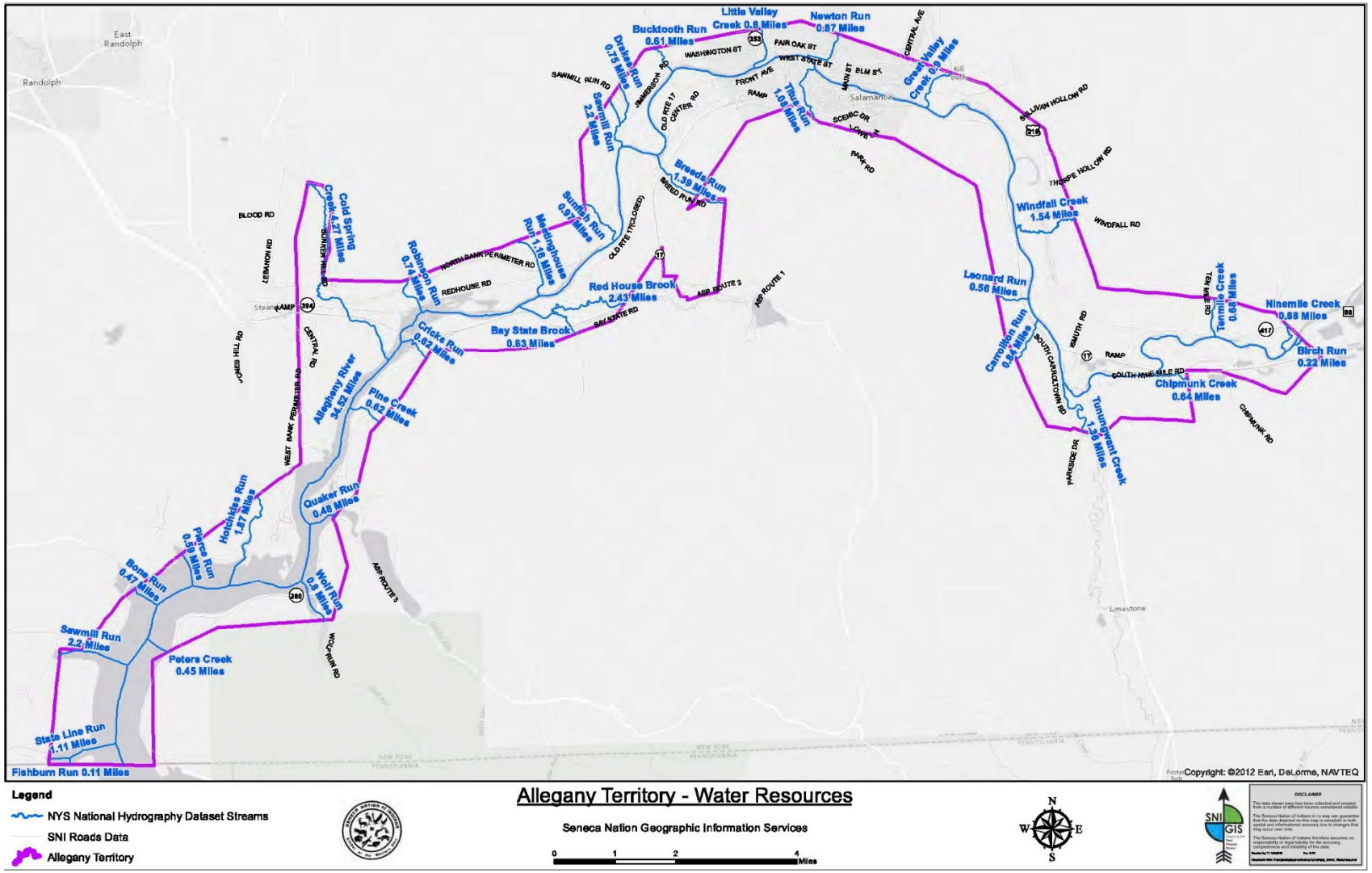


Figure 1.3: Cattaraugus Territory – Water Resources

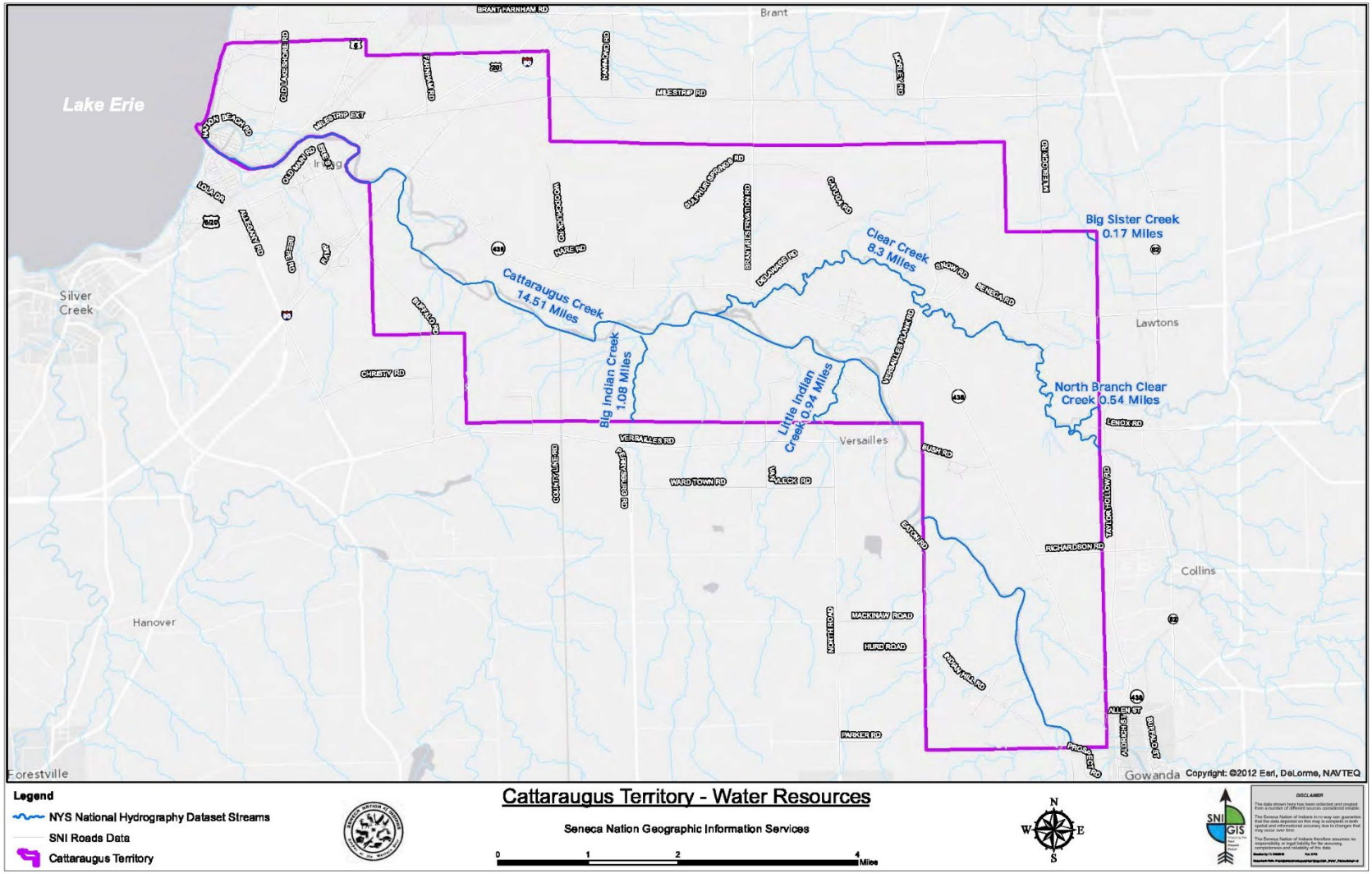
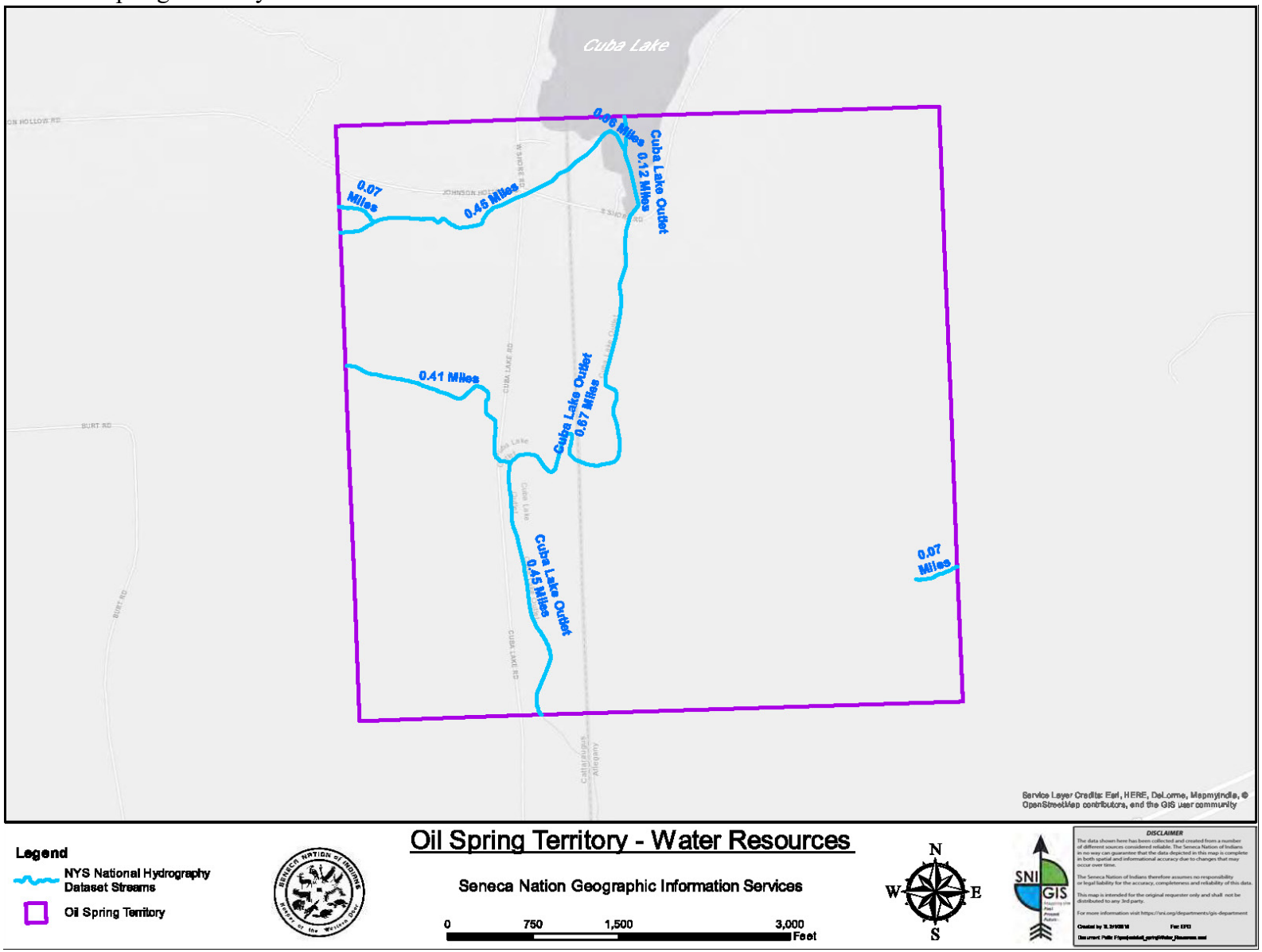
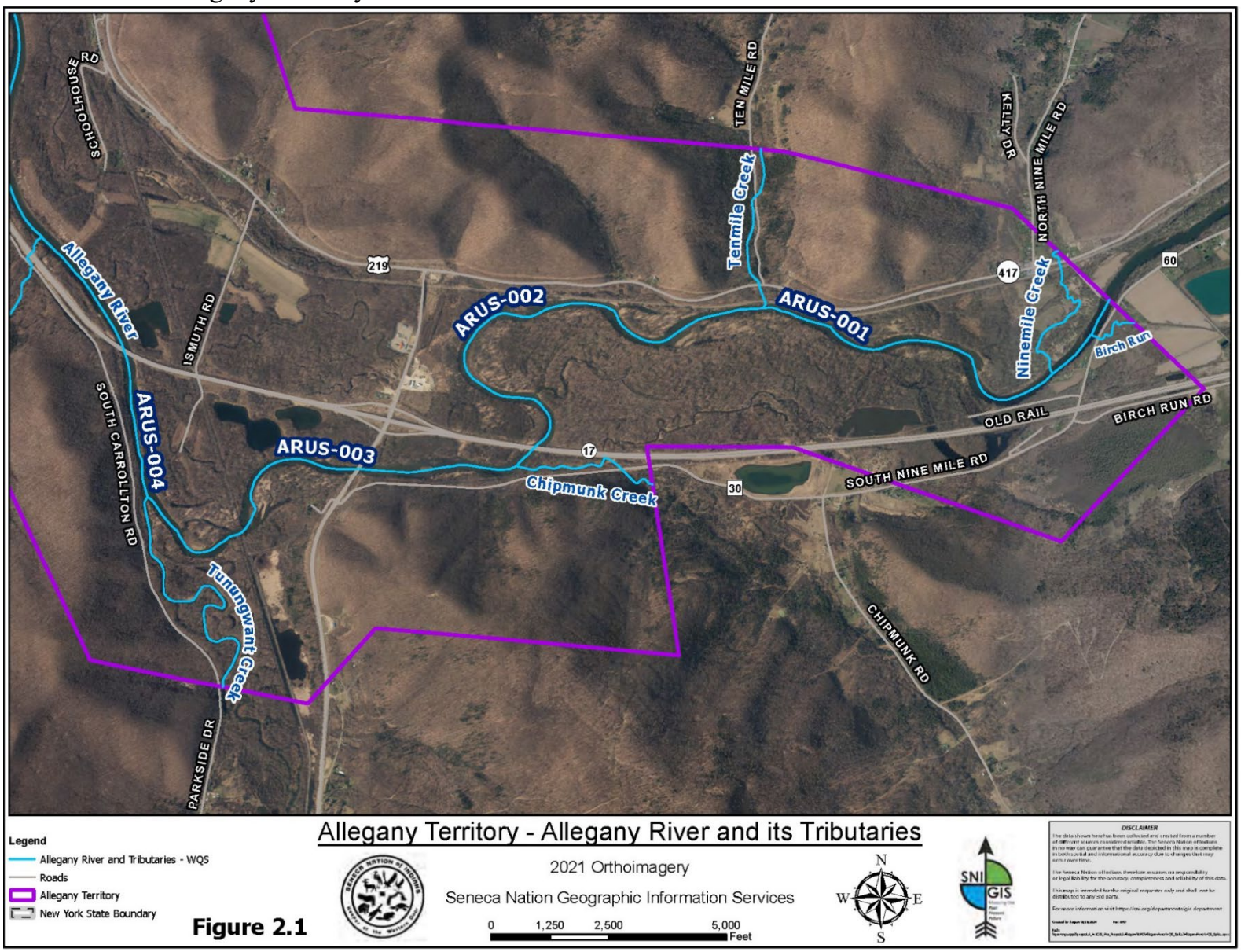


Figure 1.4: Oil Spring Territory – Water Resources



Figures 2.1 – 2.11: Allegany Territory Water Resources



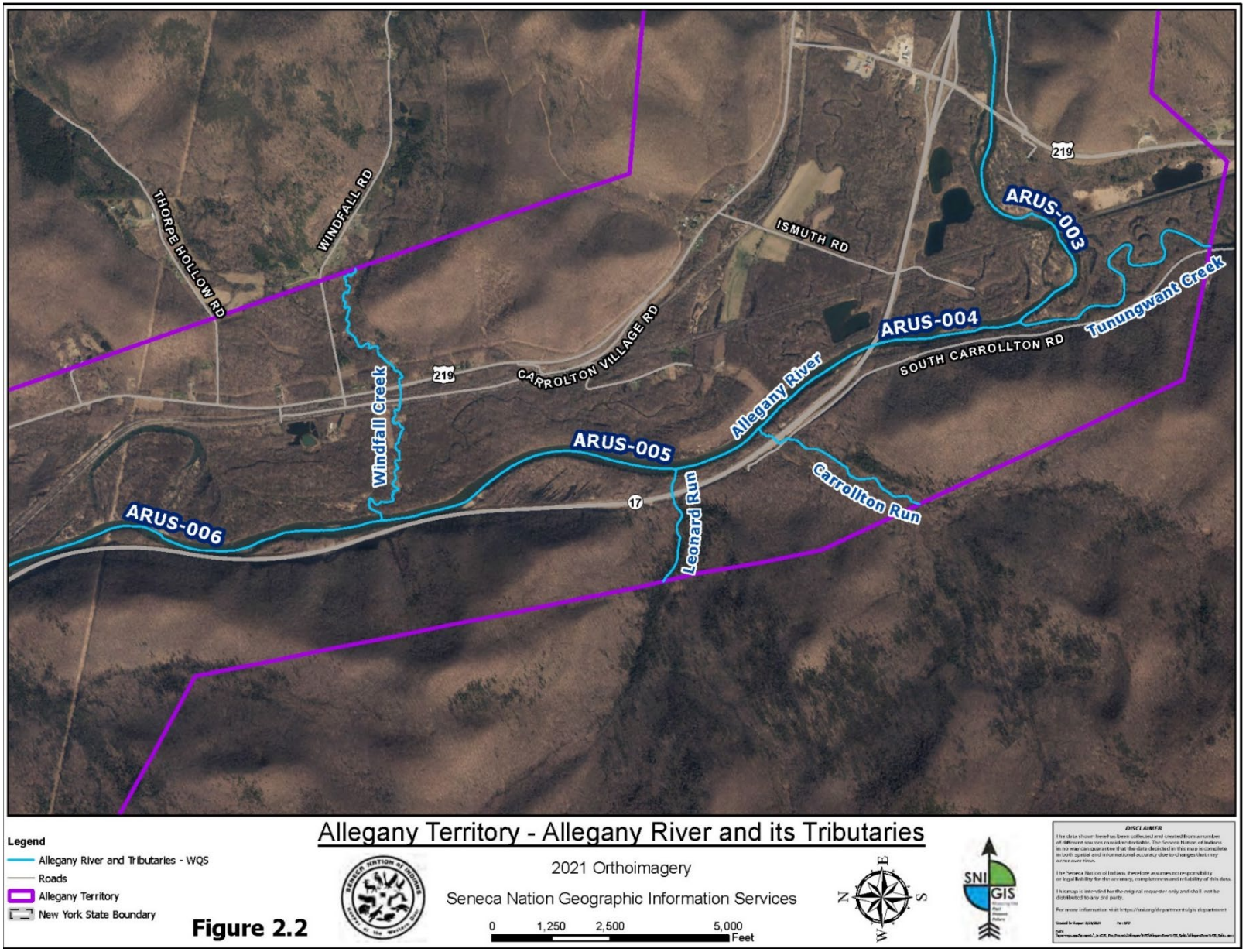

THORPE HOLLOW RD
WINDFALL RD
ISMUTH RD
219
ARUS-003
Tunungwant Creek
ARUS-004
CARROLTON VILLAGE RD
SOUTH CARROLLTON RD
Allegany River
Windfall Creek
219
ARUS-005
Carrollton Run
Leonard Run
17
ARUS-006
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
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Figure 2.2

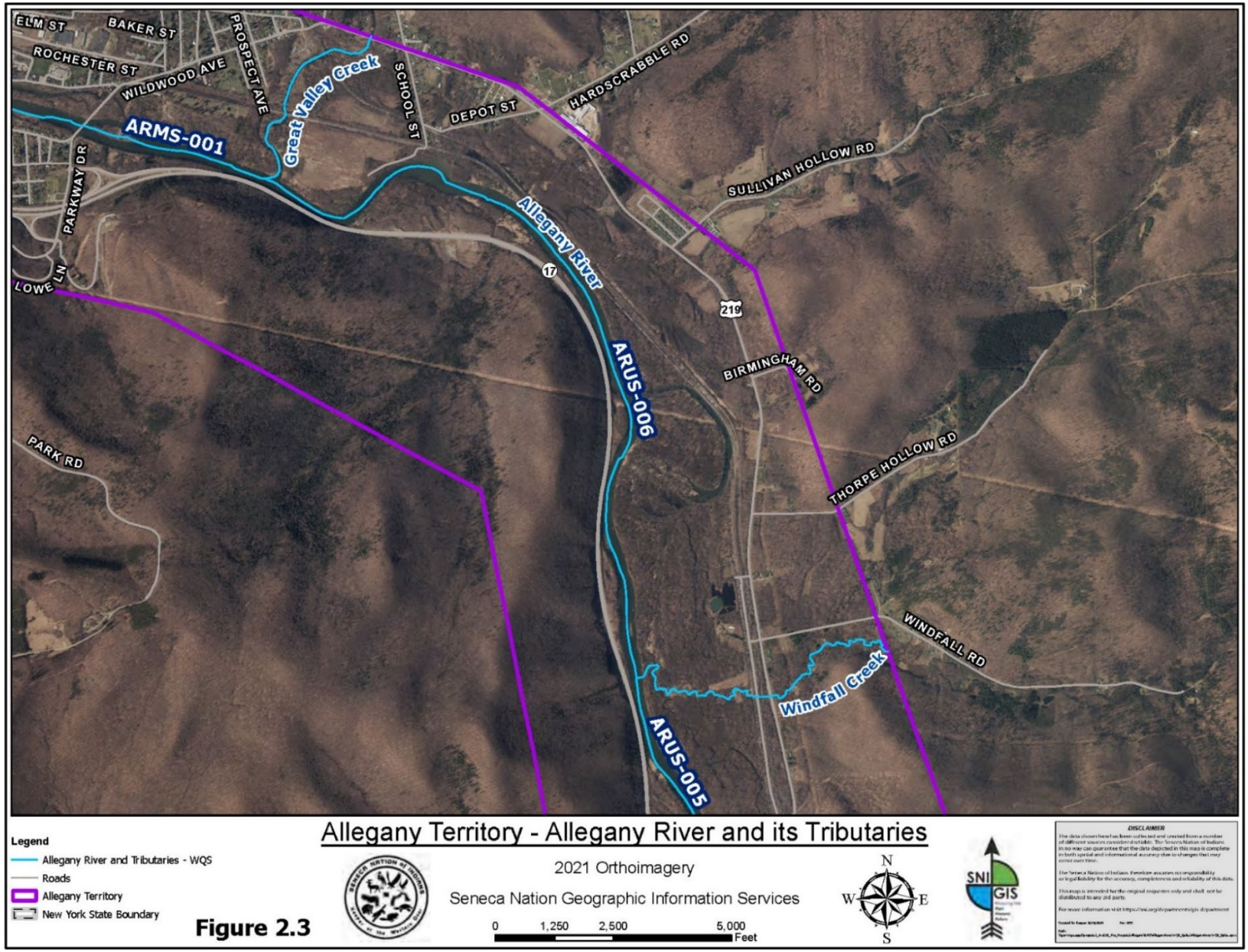
ELM ST
BAKER ST
ROCHESTER ST
WILDWOOD AVE
PROSPECT AVE
Great Valley Creek
SCHOOL ST
DEPOT ST
HARDSCRABBLE RD
ARMS-001
PARKWAY DR
SULLIVAN HOLLOW RD
Allegany River
17
LOWE LN
219
BIRMINGHAM RD
ARUS-006
PARK RD
THORPE HOLLOW RD
WINDFALL RD
Windfall Creek
ARUS-005
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
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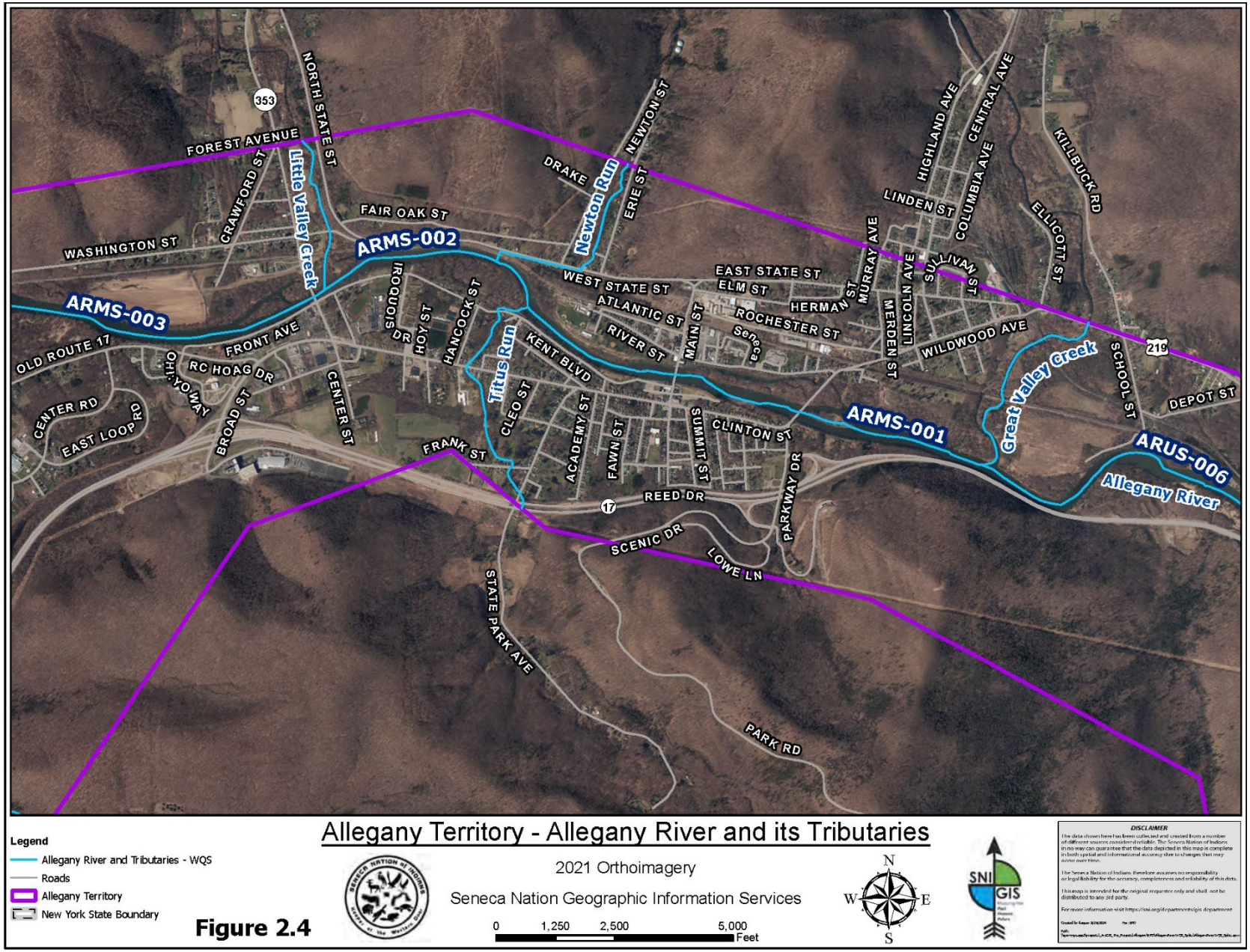
Figure 2.3


Allegany Territory - Allegany River and its Tributaries
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Figure 2.4
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ARMS-003
ARUS-006
Allegany River
Great Valley Creek
Little Valley Creek
Newton Run
Titus Run
FOREST AVENUE
NORTH STATE ST
CRAWFORD ST
WASHINGTON ST
FAIR OAK ST
DRAKE
NEWTON ST
ERIE ST
HIGHLAND AVE
CENTRAL AVE
COLUMBIA AVE
LINDEN ST
KILLBUCK RD
ELLICOTT ST
MURRAY AVE
SULLIVAN ST
LINCOLN AVE
MERDEN ST
EAST STATE ST
ELM ST
HERMAN ST
WEST STATE ST
ATLANTIC ST
ROCHESTER ST
MAIN ST
RIVER ST
WILDWOOD AVE
SCHOOL ST
DEPOT ST
219
ROBOIS DR
HOY ST
HANCOCK ST
KENT BLVD
CLEO ST
ACADEMY ST
FAWN ST
SUMMIT ST
CLINTON ST
PARKWAY DR
REED DR
17
FRANK ST
OLD ROUTE 17
FRONT AVE
RC HOAG DR
OHAYO WAY
BROAD ST
CENTER ST
CENTER RD
EAST LOOP RD
SCENIC DR
LOWE LN
STATE PARK AVE
PARK RD

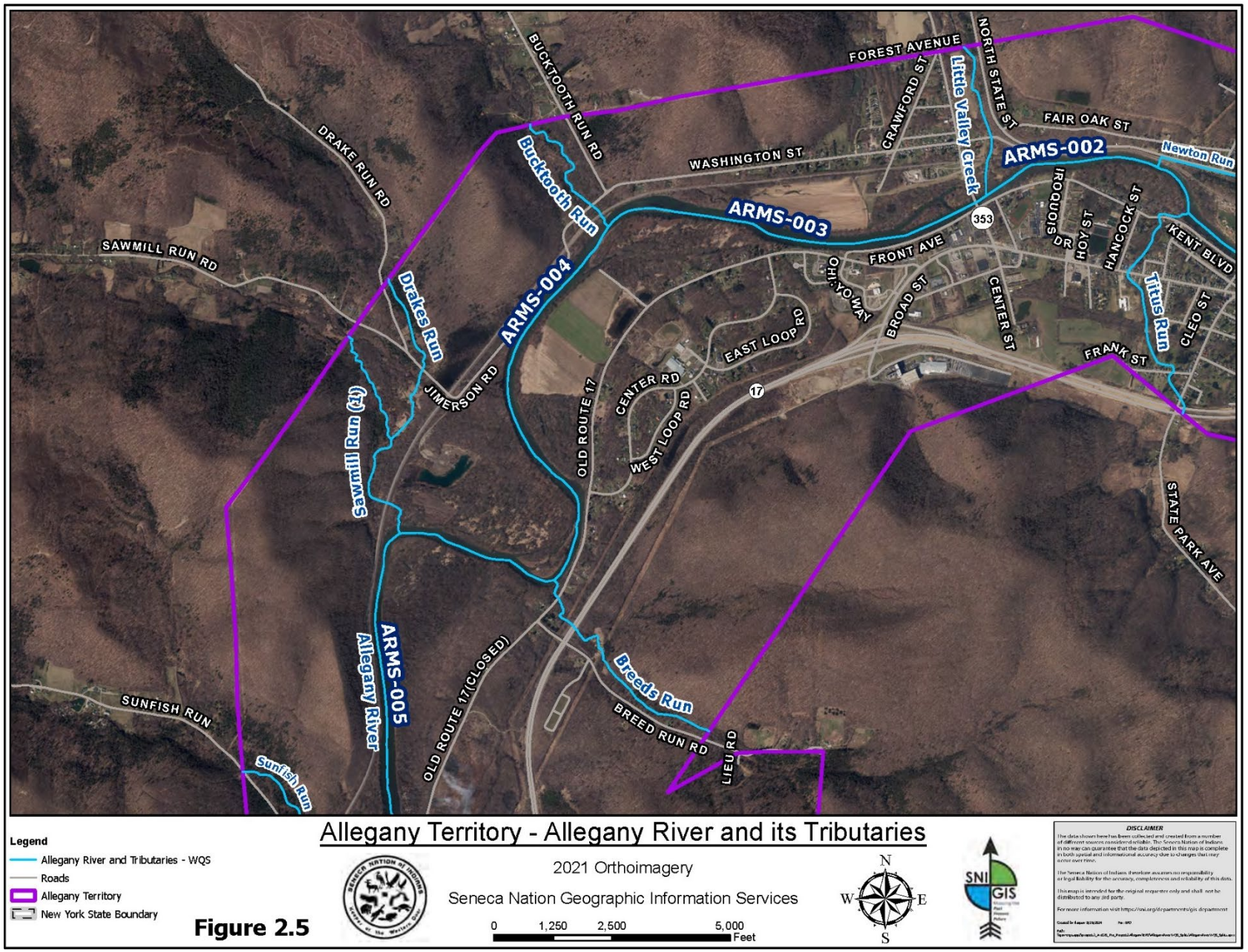
FOREST AVENUE
NORTH STATE ST
CRAWFORD ST
Little Valley Creek
FAIR OAK ST
Newton Run
ARMS-002
WASHINGTON ST
BUCKTOOTH RUN RD
DRAKE RUN RD
Bucktooth Run
ARMS-003
IROQUOIS DR
HOY ST
HANCOCK ST
KENT BLVD
353
SAWMILL RUN RD
FRONT AVE
OHIO WAY
BROAD ST
CENTER ST
Titus Run
CLEO ST
Drakes Run
ARMS-004
EAST LOOP RD
FRANK ST
JIMERSON RD
CENTER RD
OLD ROUTE 17
WEST LOOP RD
17
Sawmill Run (1)
STATE PARK AVE
ARMS-005
Allegany River
OLD ROUTE 17(CLOSED)
Breeds Run
SUNFISH RUN
BREED RUN RD
LIEU RD
Sunfish Run
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
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Figure 2.5

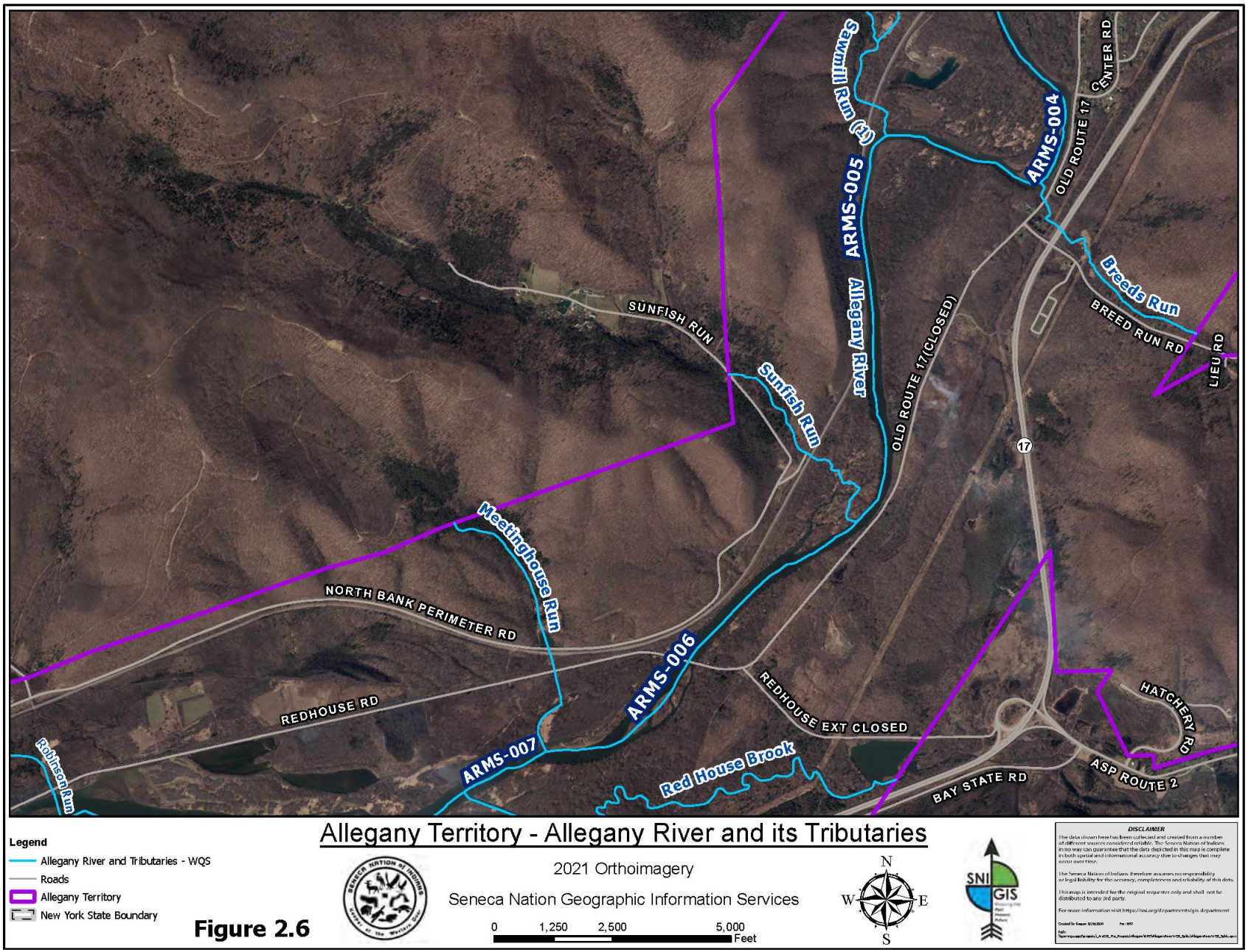
Sawmill Run (1)
ARMS-005
ARMS-004
OLD ROUTE 17
CENTER RD
Allegany River
SUNFISH RUN
Sunfish Run
OLD ROUTE 17(CLOSED)
Breeds Run
BREED RUN RD
LIEU RD
17
Meetinghouse Run
NORTH BANK PERIMETER RD
ARMS-006
REDHOUSE RD
REDHOUSE EXT CLOSED
HATCHERY RD
Robinson Run
ARMS-007
Red House Brook
BAY STATE RD
ASP ROUTE 2
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
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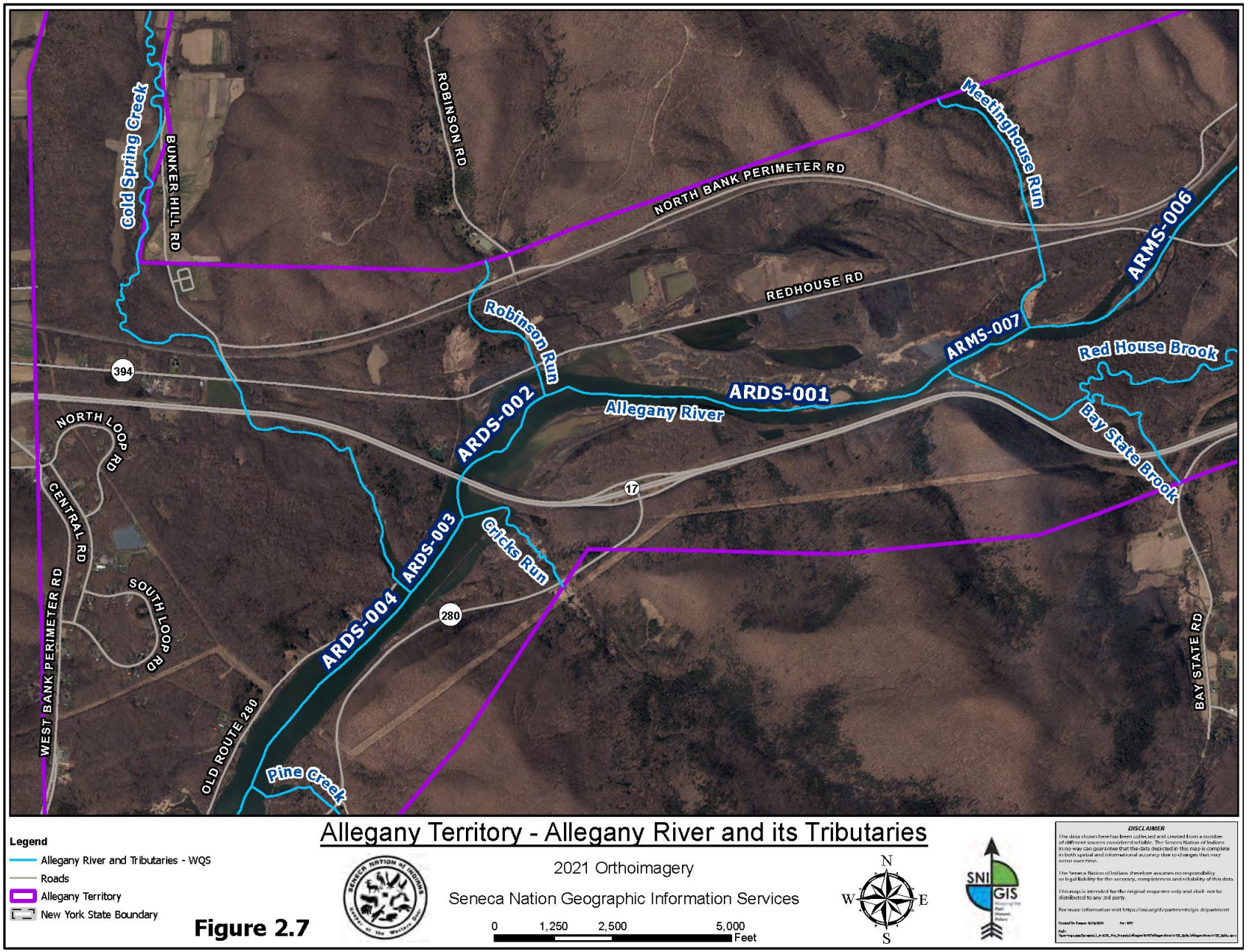
Figure 2.6


Cold Spring Creek
BUNKER HILL RD
ROBINSON RD
NORTH BANK PERIMETER RD
Meetinghouse Run
ARMS-006
REDHOUSE RD
Robinson Run
ARMS-007
Red House Brook
394
ARDS-001
Allegany River
ARDS-002
Bay State Brook
NORTH LOOP RD
CENTRAL RD
17
ARDS-003
Cricks Run
SOUTH LOOP RD
ARDS-004
280
WEST BANK PERIMETER RD
BAY STATE RD
OLD ROUTE 280
Pine Creek
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
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Seneca Nation Geographic Information Services
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Figure 2.7

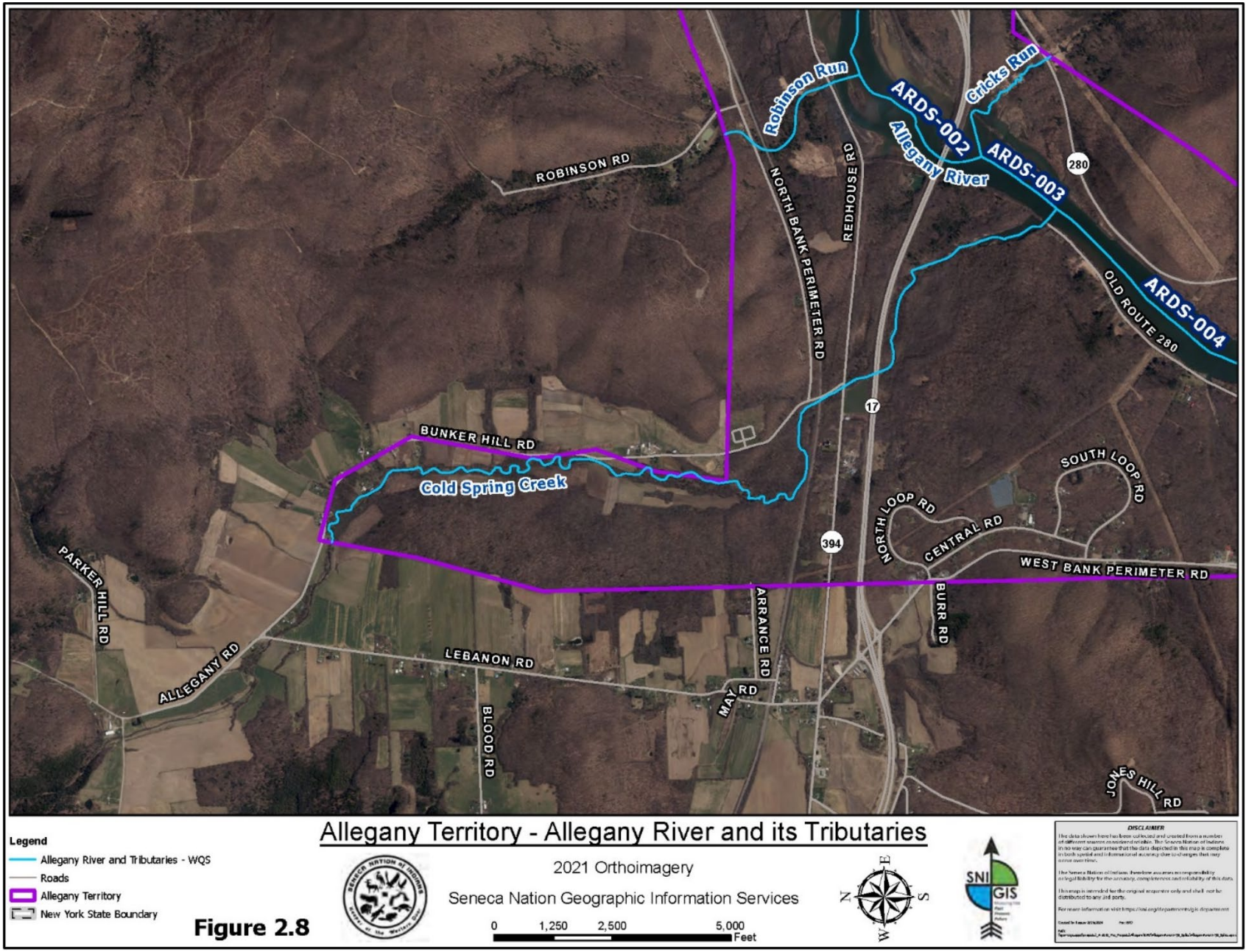
Robinson Run
Cricks Run
ARDS-002
ARDS-003
ARDS-004
Allegany River
ROBINSON RD
NORTH BANK PERIMETER RD
REDHOUSE RD
OLD ROUTE 280
280
17
BUNKER HILL RD
Cold Spring Creek
SOUTH LOOP RD
NORTH LOOP RD
CENTRAL RD
394
WEST BANK PERIMETER RD
PARKER HILL RD
ALLEGANY RD
LEBANON RD
ARRANCE RD
BURR RD
MAY RD
BLOOD RD
JONES HILL RD
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
2021 Orthoimagery
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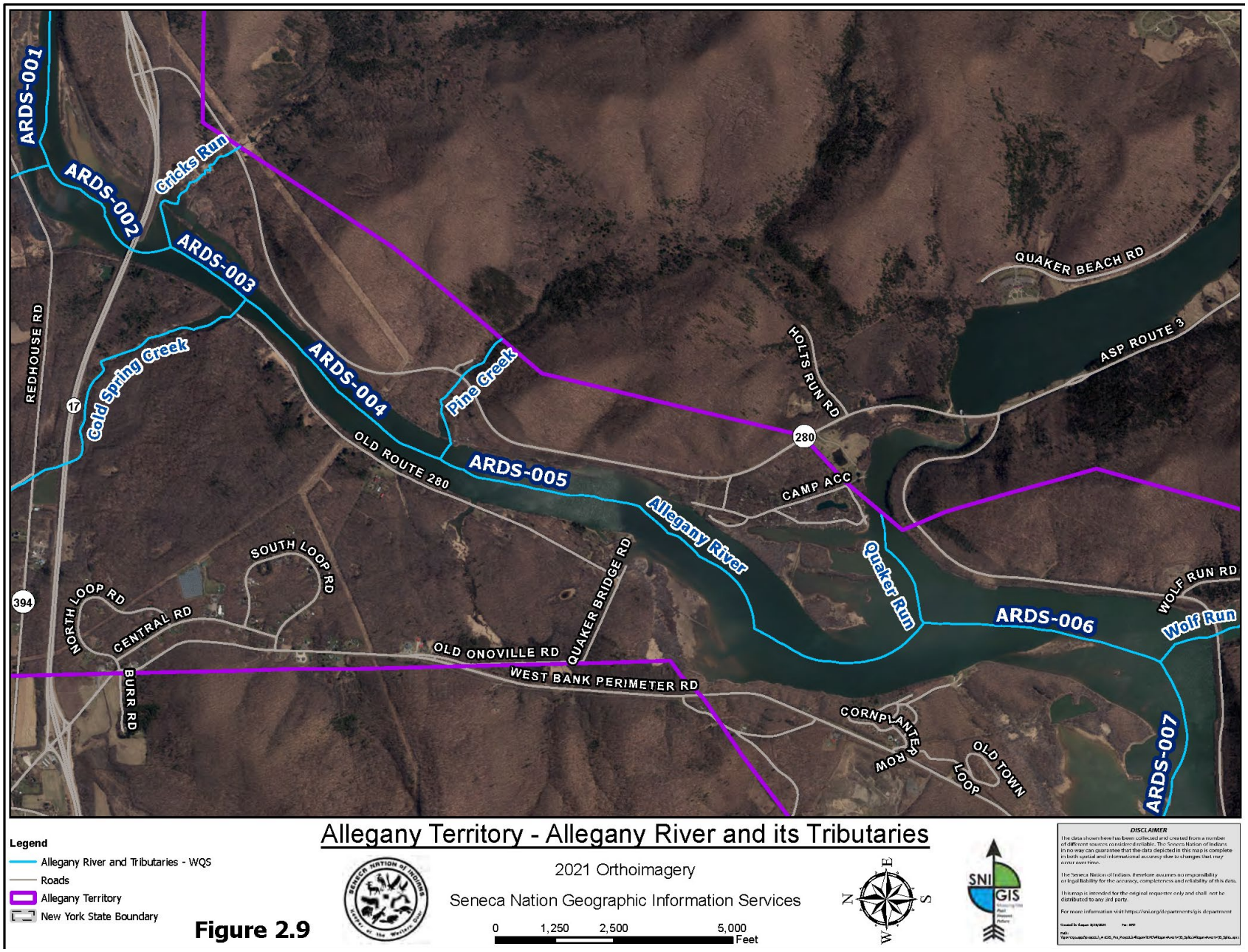
Figure 2.8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ARDS-002
ARDS-003
ARDS-004
ARDS-005
ARDS-006
ARDS-007
Cricks Run
Cold Spring Creek
Pine Creek
Allegany River
Quaker Run
Wolf Run
REDHOUSE RD
17
394
280
QUAKER BEACH RD
ASP ROUTE 3
HOLTS RUN RD
OLD ROUTE 280
CAMP ACC
SOUTH LOOP RD
NORTH LOOP RD
CENTRAL RD
QUAKER BRIDGE RD
WOLF RUN RD
OLD ONOVILLE RD
WEST BANK PERIMETER RD
BURR RD
CORNPLANTER ROW
OLD TOWN LOOP
Legend
Allegany River and Tributaries - WQS
Roads
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New York State Boundary
Allegany Territory - Allegany River and its Tributaries
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Figure 2.9

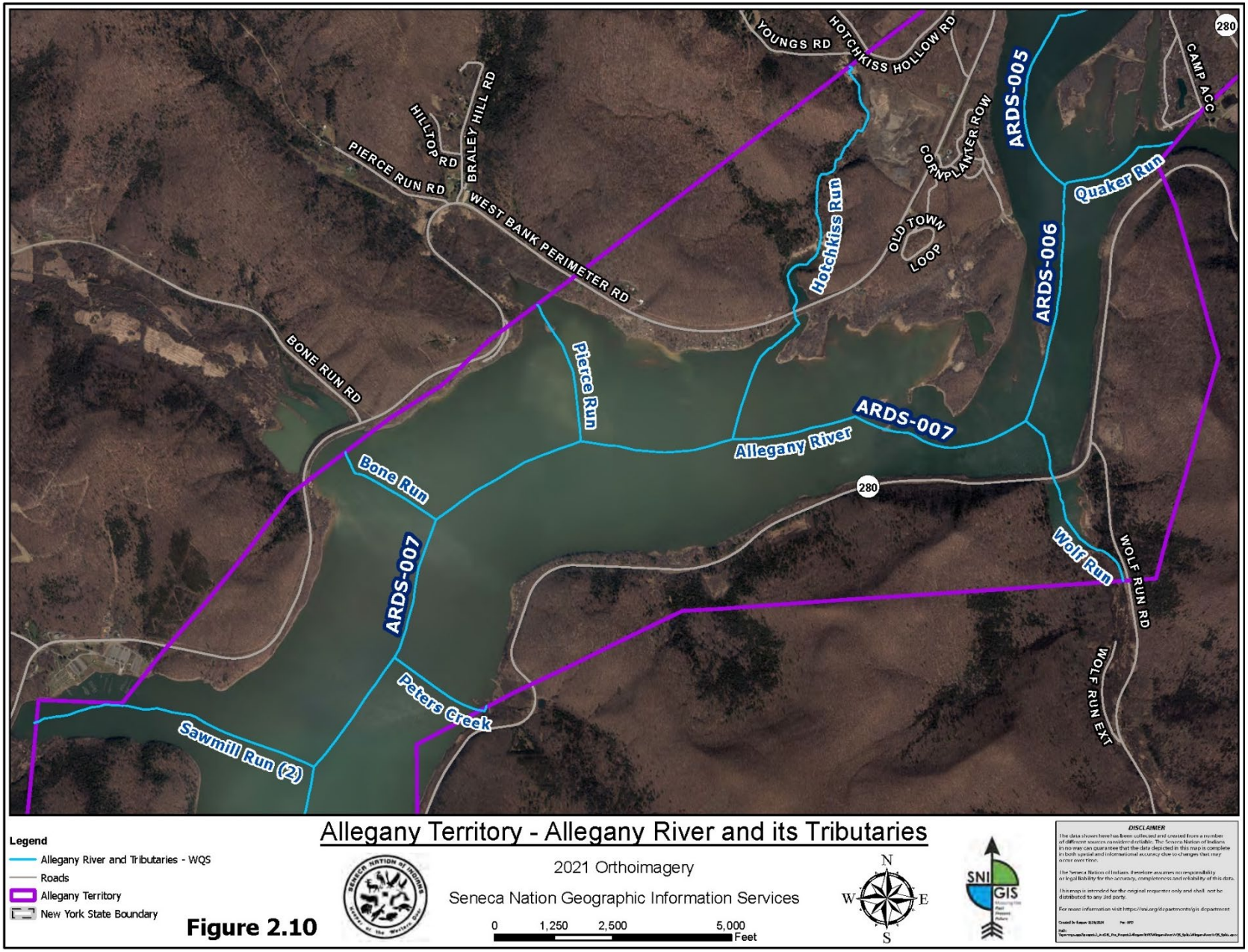
YOUNGS RD
HOTCHKISS HOLLOW RD
280
CAMP ACC
ARDS-005
HILLTOP RD
BRALEY HILL RD
PIERCE RUN RD
CORNPLANTER ROW
Quaker Run
WEST BANK PERIMETER RD
Hotchkiss Run
OLD TOWN
LOOP
ARDS-006
BONE RUN RD
Pierce Run
ARDS-007
Allegany River
Bone Run
280
ARDS-007
Wolf Run
WOLF RUN RD
WOLF RUN EXT
Peters Creek
Sawmill Run (2)
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
2021 Orthoimagery
Seneca Nation Geographic Information Services
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Figure 2.10

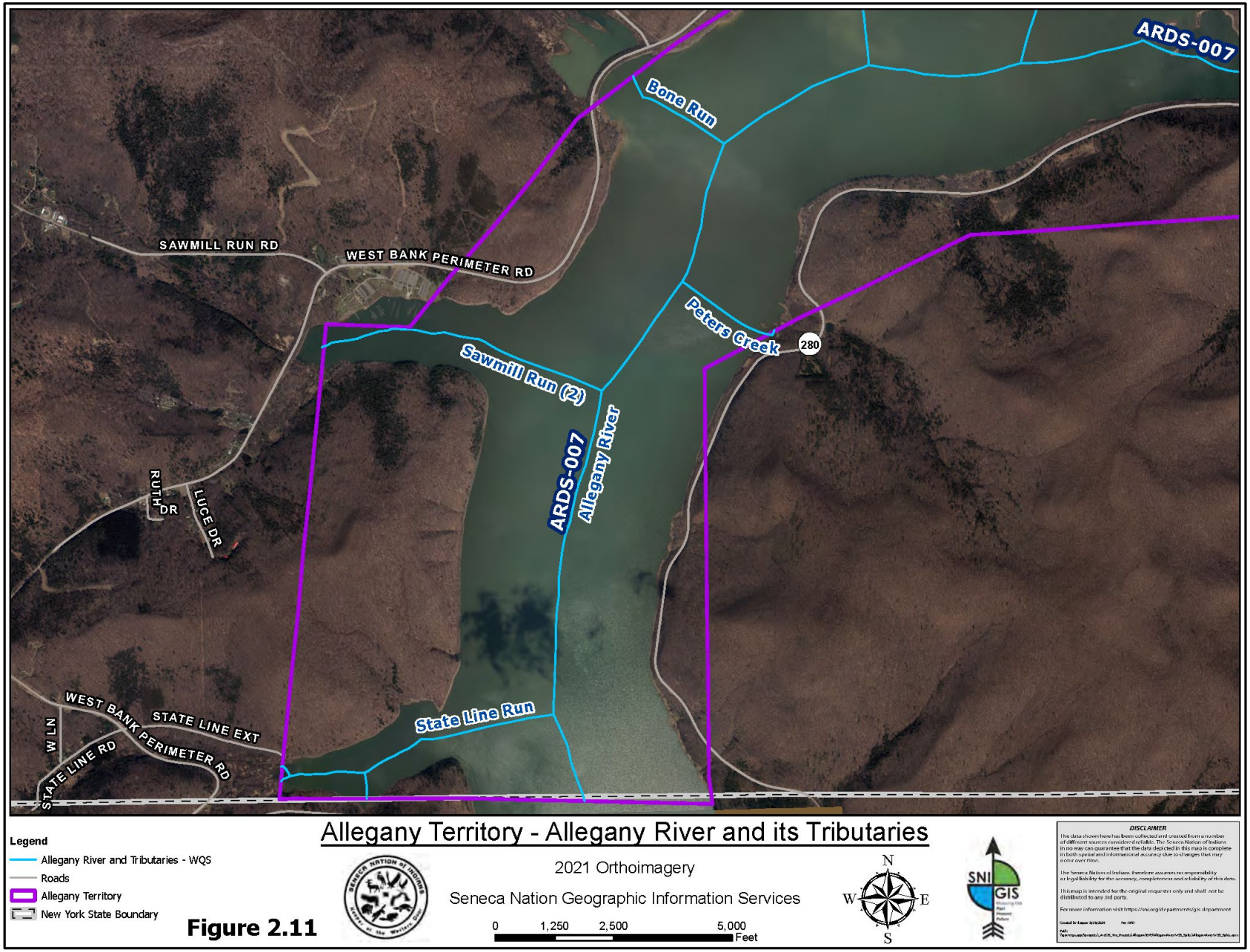
ARDS-007
Bone Run
SAWMILL RUN RD
WEST BANK PERIMETER RD
Peters Creek
280
Sawmill Run (2)
ARDS-007
Allegany River
RUTH DR
LUCE DR
WEST BANK PERIMETER RD
STATE LINE EXT
W LN
STATE LINE RD
State Line Run
Legend
Allegany River and Tributaries - WQS
Roads
Allegany Territory
New York State Boundary
Allegany Territory - Allegany River and its Tributaries
2021 Orthoimagery
Seneca Nation Geographic Information Services
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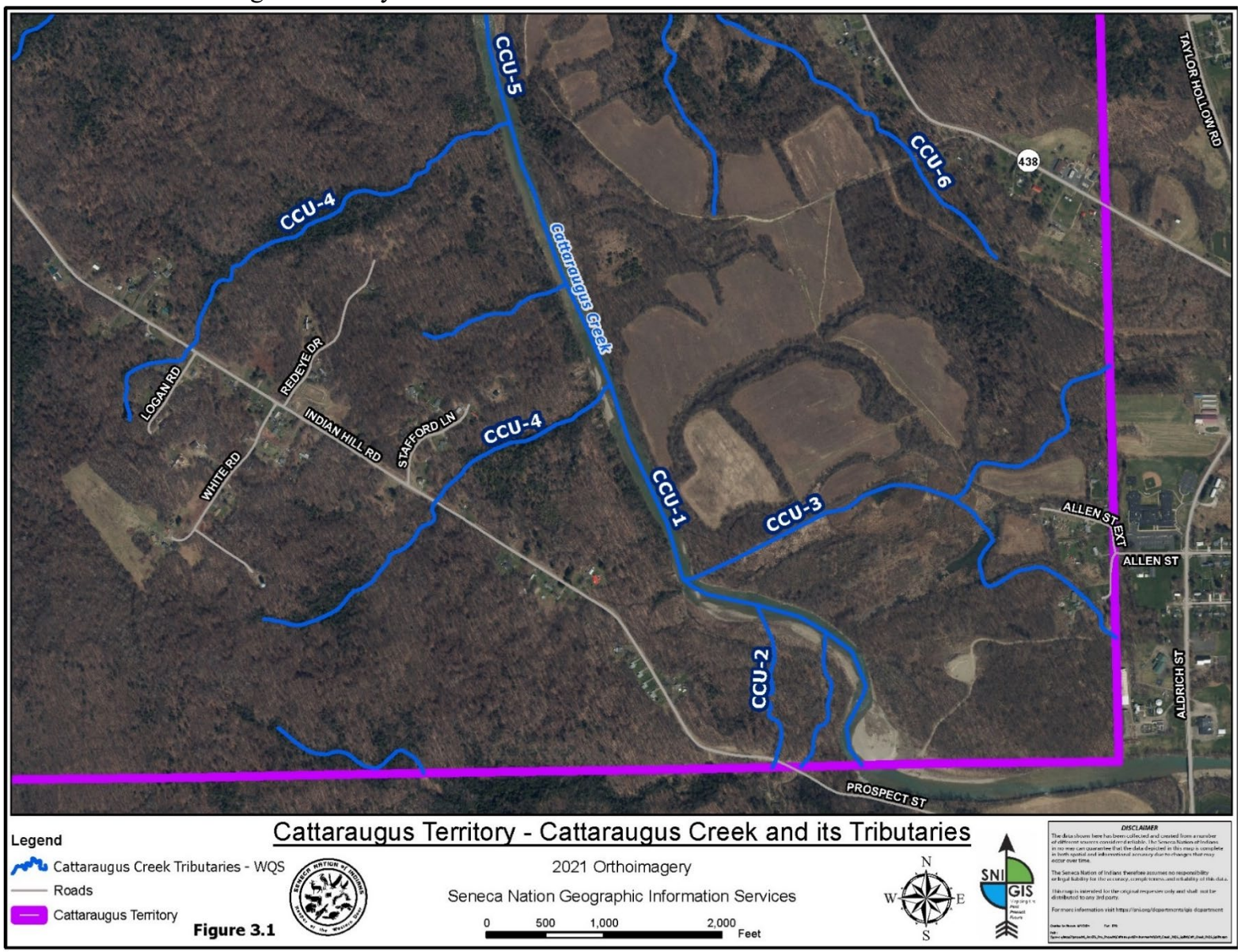
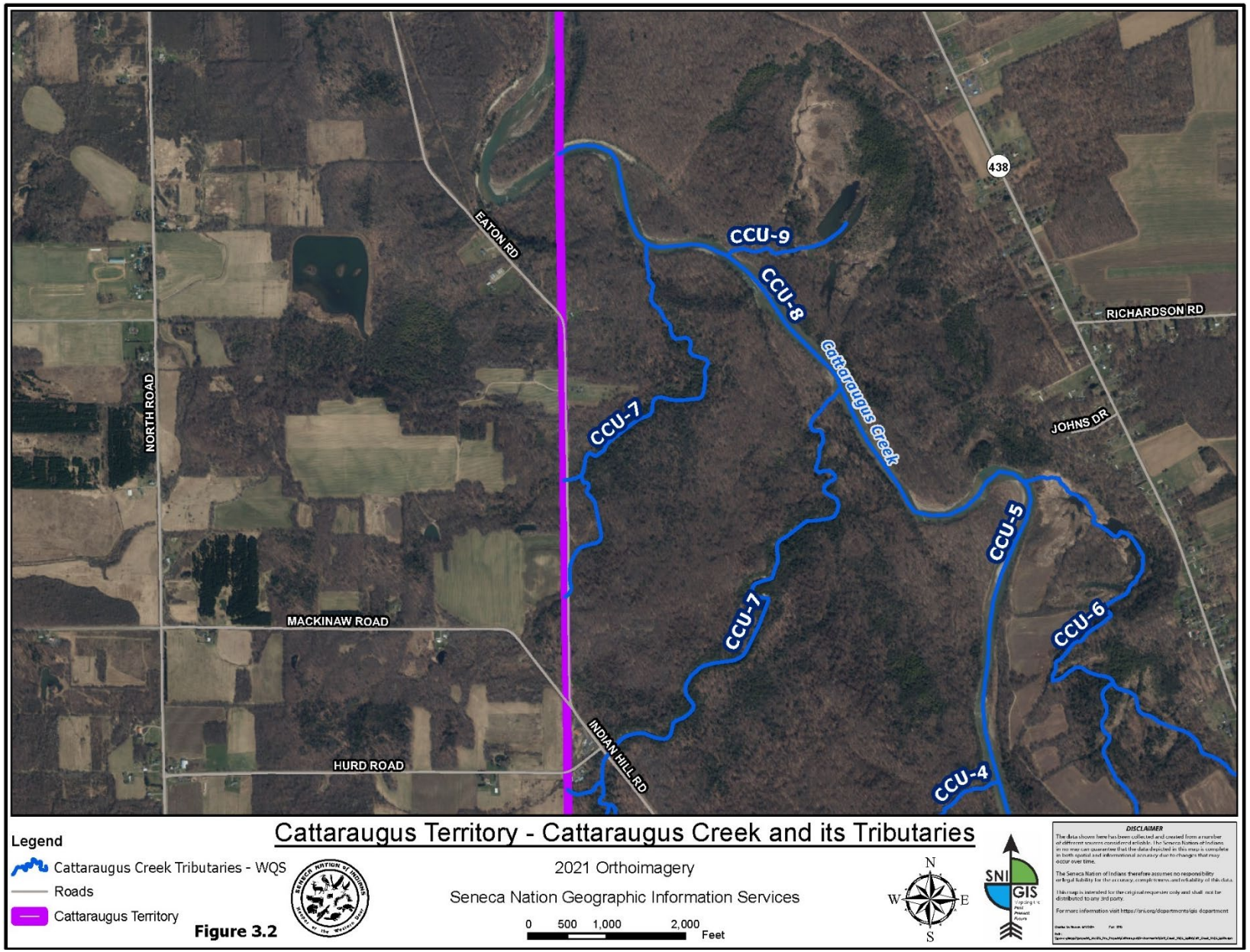
Figure 2.11

Figures 3.1 – 3.12: Cattaraugus Territory Water Resources




EATON RD
NORTH ROAD
MACKINAW ROAD
HURD ROAD
INDIAN HILL RD
RICHARDSON RD
JOHNS DR
438
CCU-9
CCU-8
Cattaraugus Creek
CCU-7
CCU-7
CCU-5
CCU-6
CCU-4
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Figure 3.2
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
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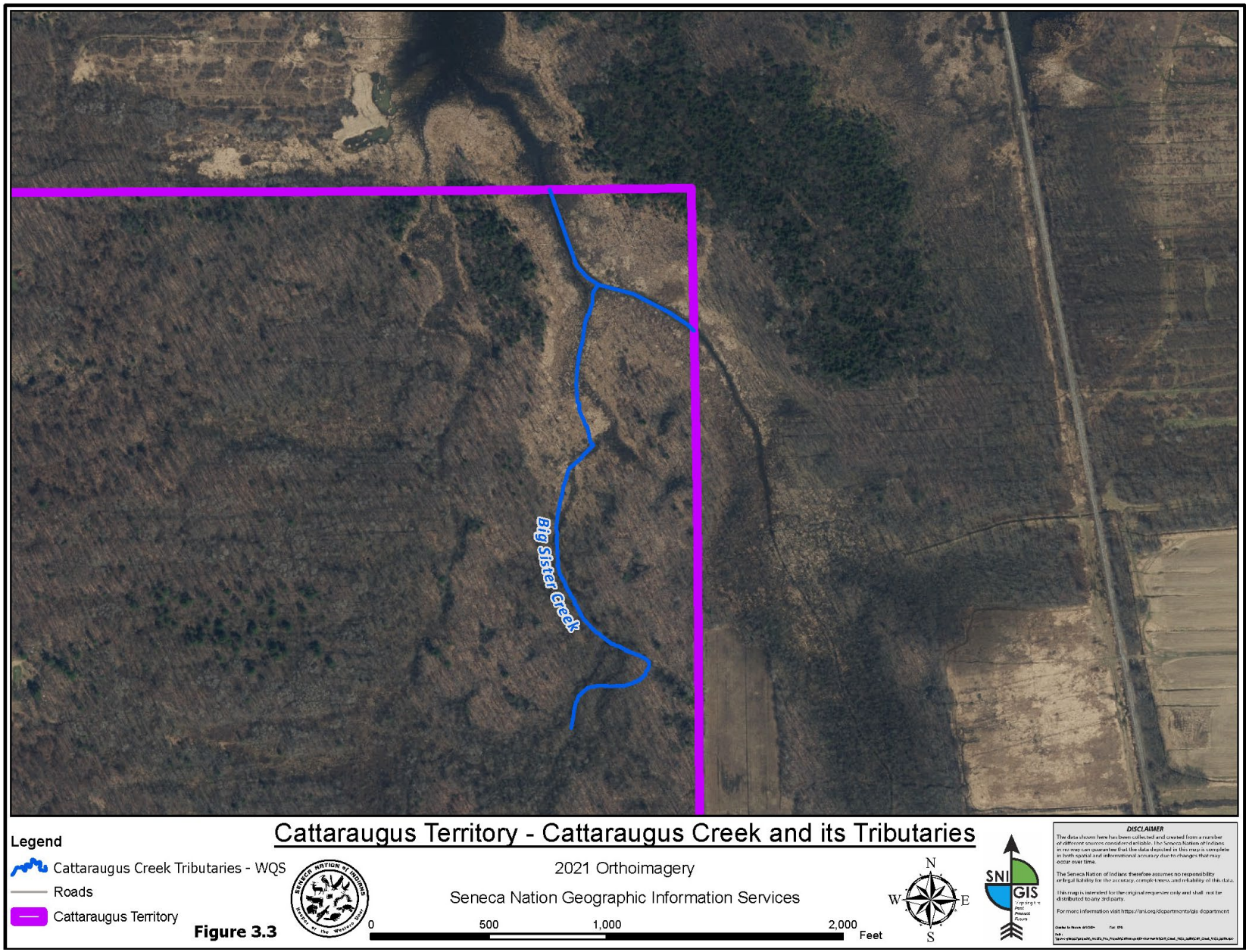
Big Sister Creek
Legend
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Cattaraugus Territory - Cattaraugus Creek and its Tributaries
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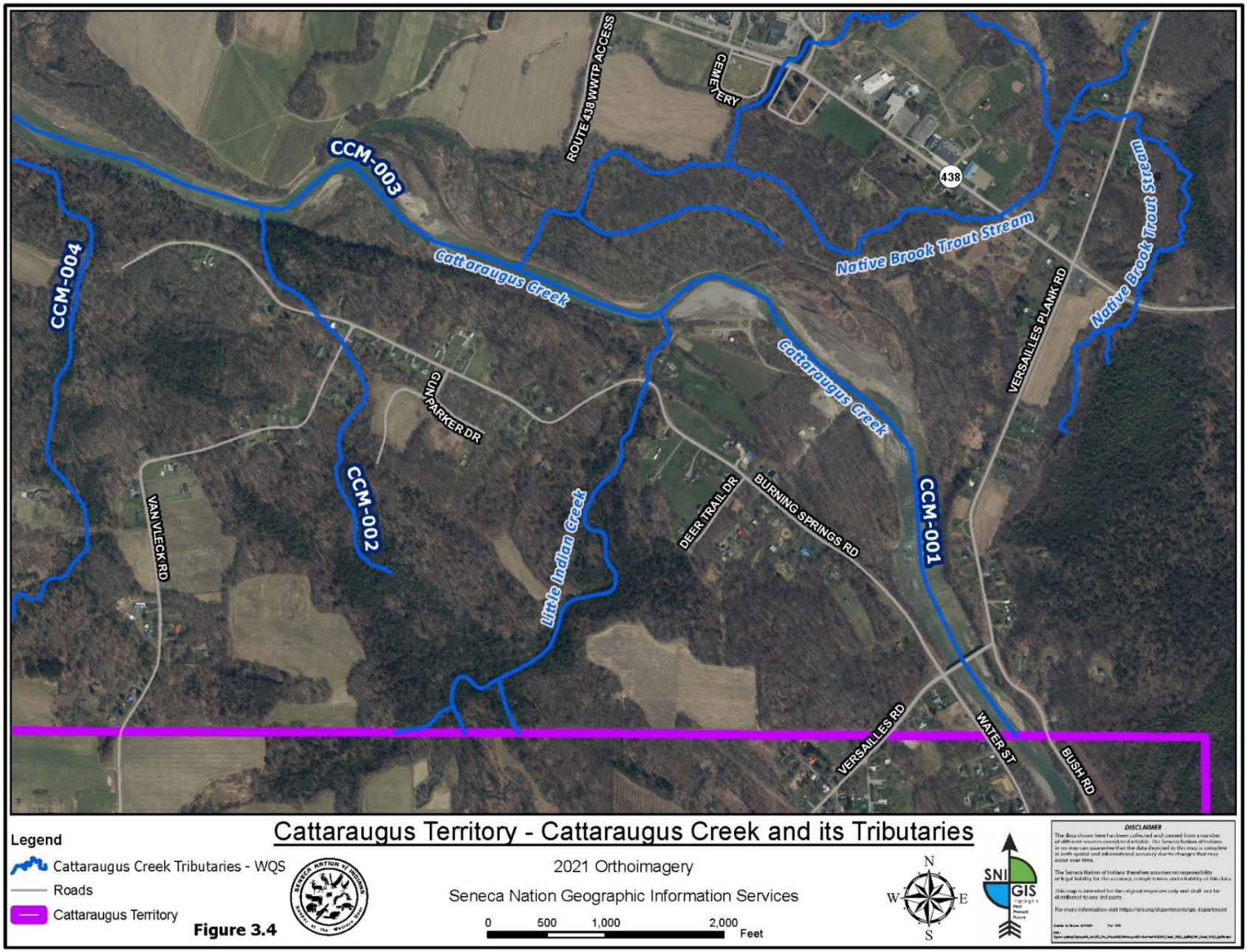
Figure 3.3


CCM-003
CCM-004
CCM-002
CCM-001
ROUTE 438 WWTP ACCESS
CEMETERY
438
Cattaraugus Creek
Native Brook Trout Stream
Native Brook Trout Stream
Cattaraugus Creek
Native Brook Trout Stream
VERSAILLES PLANK RD
G.N. PARKER DR
VAN VLECK RD
Little Indian Creek
DEER TRAIL DR
BURNING SPRINGS RD
VERSAILLES RD
WATER ST
BUSH RD
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Figure 3.4
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
2021 Orthoimagery
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DELAWARE RD
Clear Creek
Clear Creek
438
SPORTS COMPLEX RD
CCM-006
Cattaraugus Creek
CCM-005
CCM-005
CCM-004
CCM-004
CCM-003
Cattaraugus Creek
CCM-003
CCM-002
BURNING SPRINGS RD
VAN VLECK RD
CCM-005
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
2021 Orthoimagery
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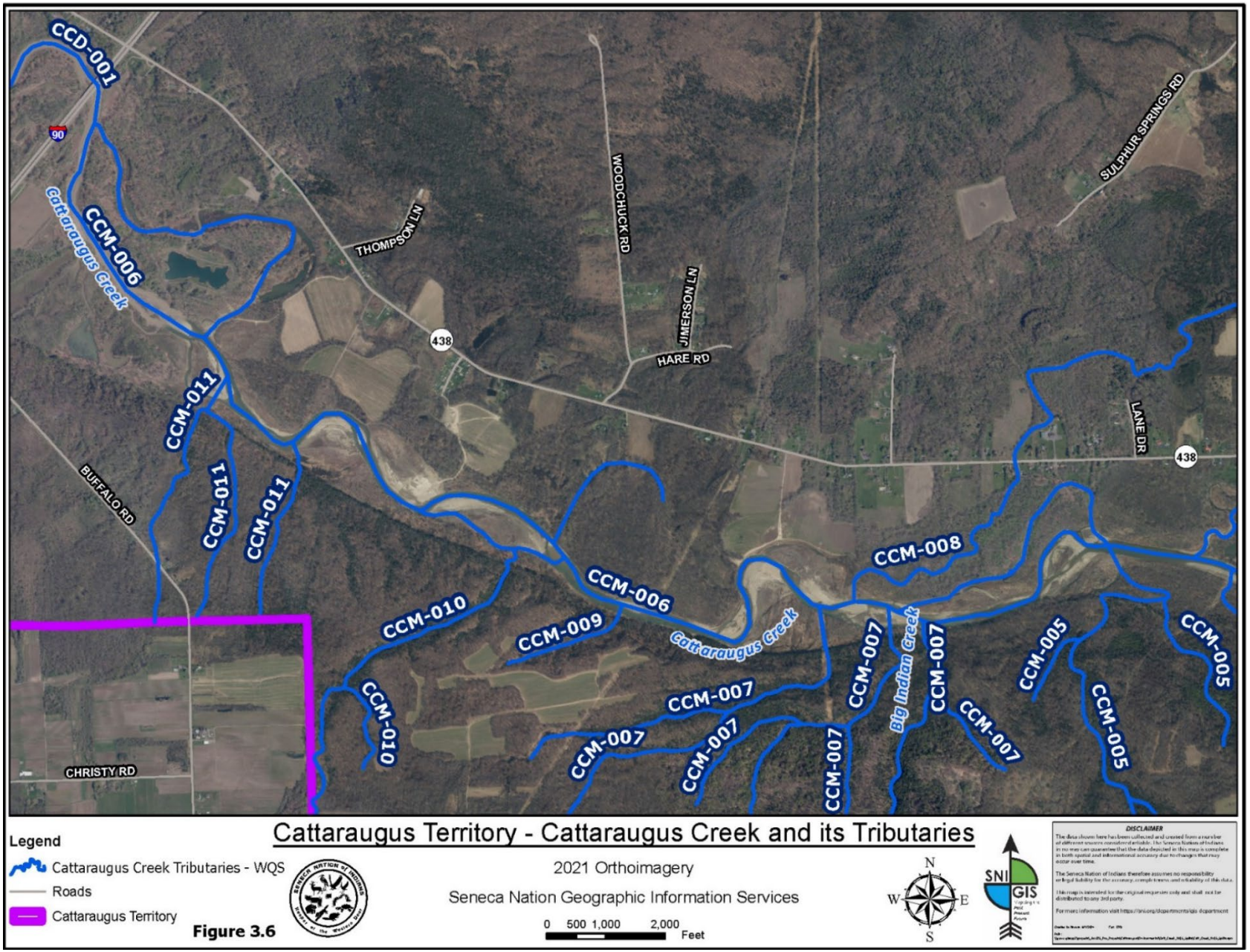
Figure 3.5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90
Cattaraugus Creek
CCM-006
THOMPSON LN
WOODCHUCK RD
JIMERSON LN
HARE RD
438
SULPHUR SPRINGS RD
LANE DR
438
CCM-011
CCM-011
CCM-011
BUFFALO RD
CCM-008
CCM-006
CCM-010
CCM-009
Cattaraugus Creek
CCM-007
Big Indian Creek
CCM-007
CCM-005
CCM-005
CCM-010
CCM-007
CCM-007
CCM-007
CCM-007
CCM-007
CHRISTY RD
Legend
Cattaraugus Creek Tributaries - WQS
Roads
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Figure 3.6
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
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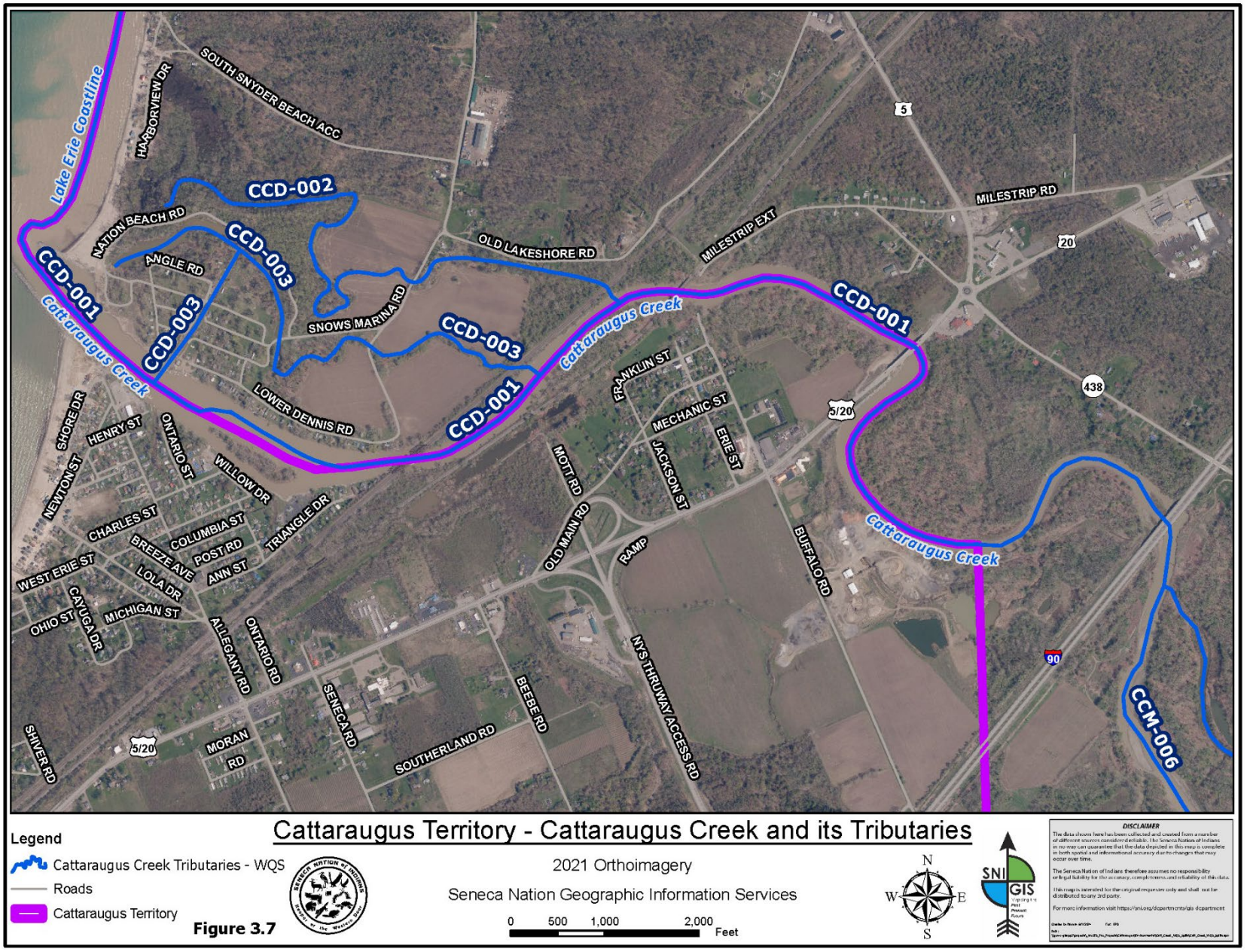
Lake Erie Coastline
HARBORVIEW DR
SOUTH SNYDER BEACH ACC
CCD-002
NATION BEACH RD
ANGLE RD
CCD-003
CCD-001
Cattaraugus Creek
SNOWS MARINA RD
OLD LAKESHORE RD
MILESTRIP EXT
MILESTRIP RD
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438
5/20
90
LOWER DENNIS RD
FRANKLIN ST
MECHANIC ST
ERIE ST
JACKSON ST
MOTT RD
OLD MAIN RD
RAMP
BUFFALO RD
SHORE DR
HENRY ST
ONTARIO ST
WILLOW DR
NEWTON ST
CHARLES ST
COLUMBIA ST
TRIANGLE DR
BREEZE AVE
POST RD
ANN ST
LOLA DR
WEST ERIE ST
OHIO ST
CAYUGA DR
MICHIGAN ST
ALLEGANY RD
ONTARIO RD
SENECA RD
BEEBE RD
NYS THRUWAY ACCESS RD
SOUTHERLAND RD
MORAN RD
SHIVER RD
CCM-006
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
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Figure 3.7


THOMPSON ST
WIDE BEACH OVAL
WIDE BEACH SOUTH RD
WILLIAM SENECA PKWY
NORTH SNYDER BEACH ACC
A ST
B ST
HAUCK DR
OLD LAKESHORE RD
HARBORVIEW DR
SOUTH SNYDER BEACH ACC
Lake Erie Coastline
CCD-002
NATION BEACH RD
CCD-003
CCD-002
ANGLE RD
CCD-003
Cattaraugus Creek
SNOWS MARINA RD
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
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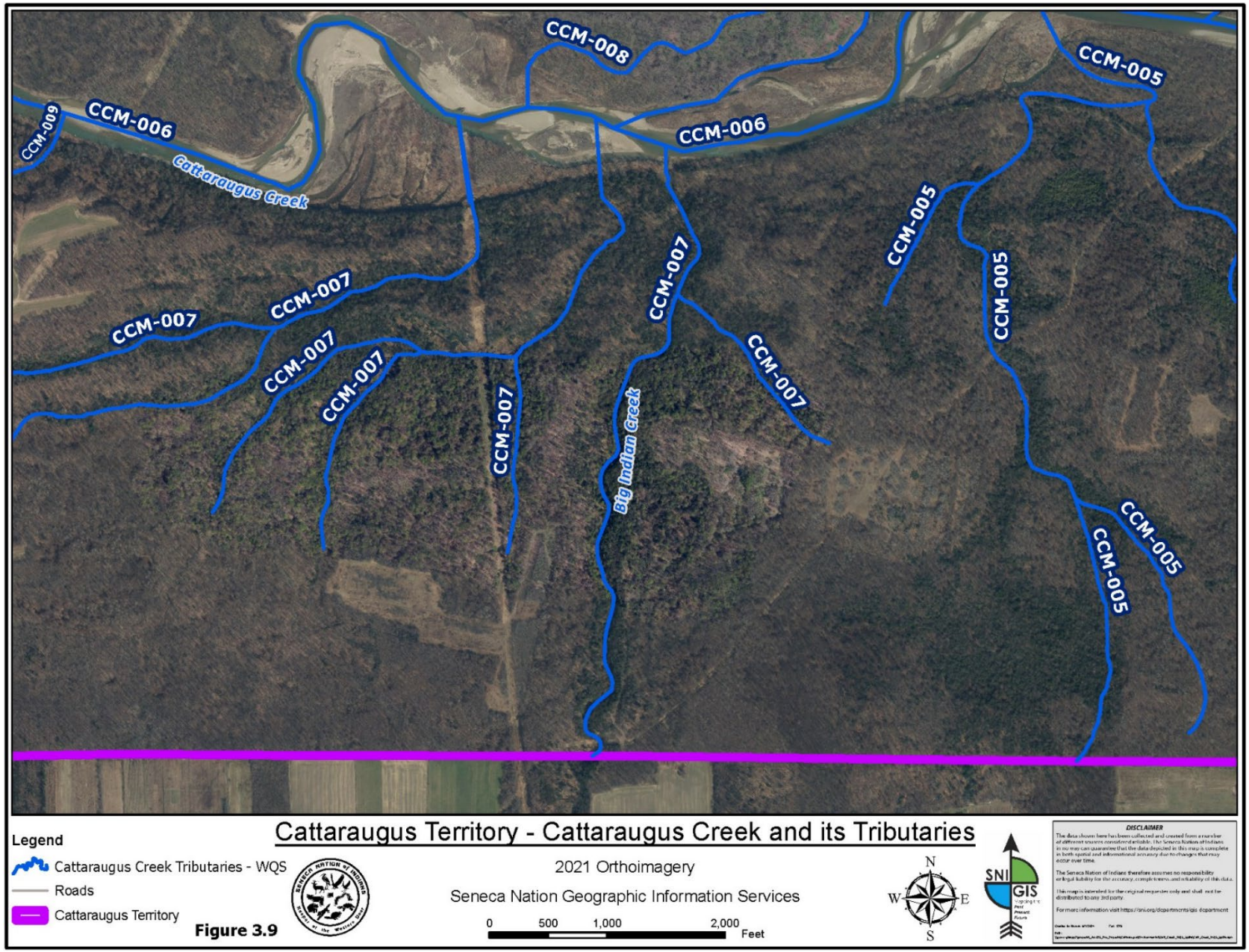
Figure 3.8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CCM-005
CCM-009
CCM-006
CCM-006
Cattaraugus Creek
CCM-005
CCM-007
CCM-005
CCM-007
CCM-007
CCM-007
CCM-007
CCM-007
Big Indian Creek
CCM-007
CCM-005
CCM-005
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Figure 3.9
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
2021 Orthoimagery
Seneca Nation Geographic Information Services
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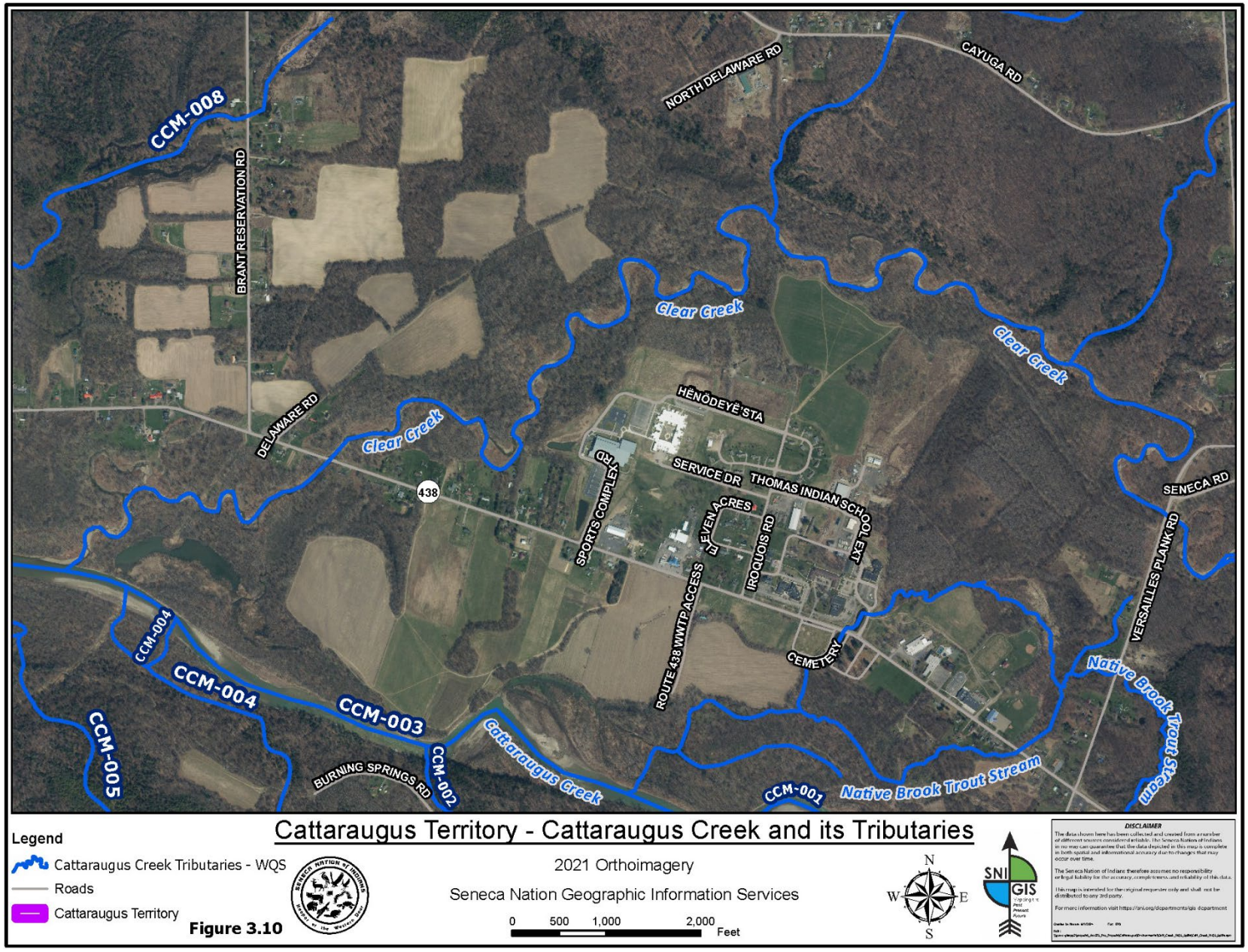
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NORTH DELAWARE RD
CAYUGA RD
Clear Creek
Clear Creek
Clear Creek
DELAWARE RD
HÉNÖDEYË'STA
SERVICE DR
THOMAS INDIAN SCHOOL EXT
SPORTS COMPLEX RD
SENECA RD
438
SEVEN ACRES
IROQUOIS RD
VERSAILLES PLANK RD
ROUTE 438 WWTP ACCESS
CEMETERY
CCM-004
CCM-004
CCM-003
CCM-005
CCM-002
BURNING SPRINGS RD
Cattaraugus Creek
CCM-001
Native Brook Trout Stream
Native Brook Trout Stream
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Figure 3.10
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
2021 Orthoimagery
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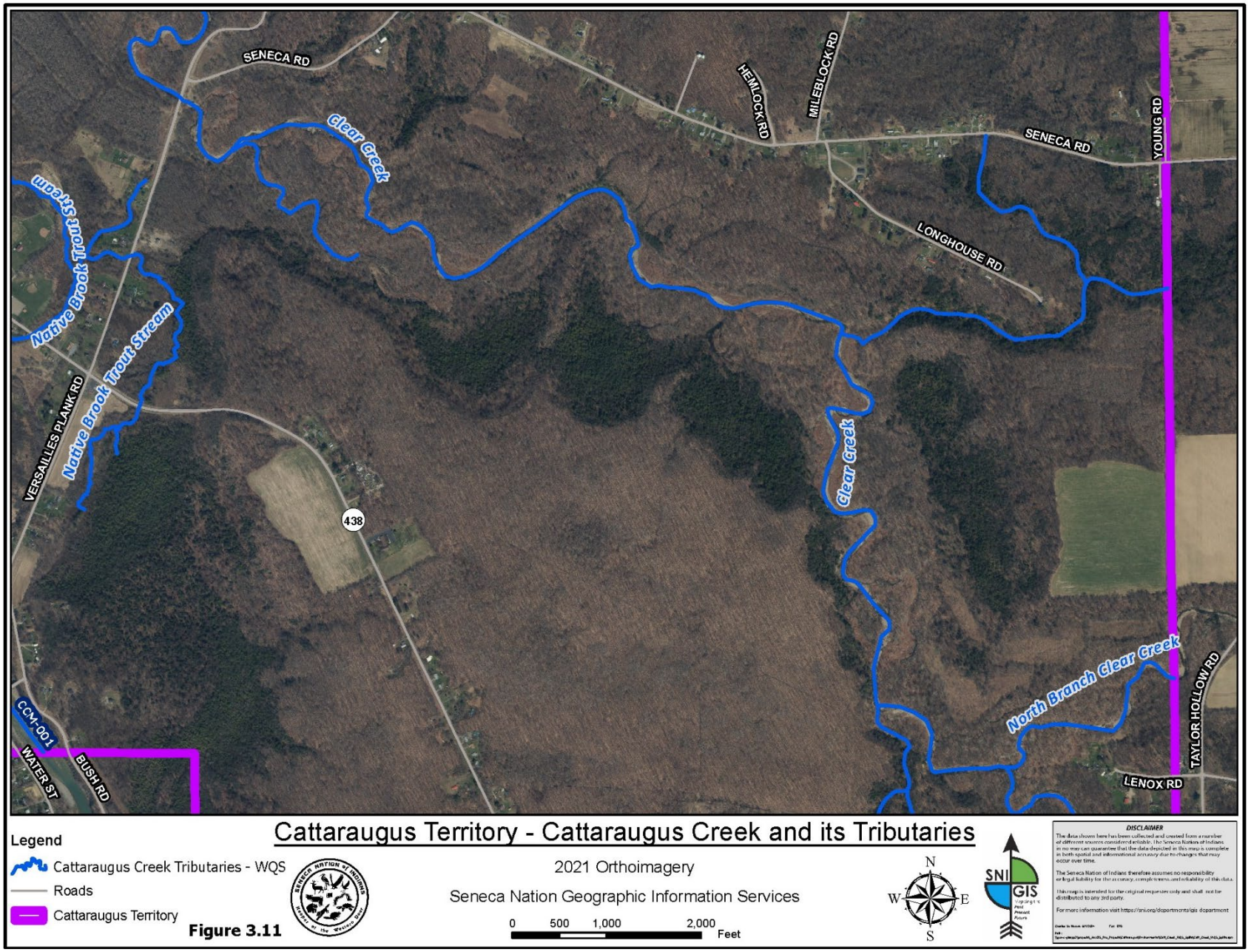
SENECA RD
HEMLOCK RD
MILLEBLOCK RD
SENECA RD
YOUNG RD
Clear Creek
Native Brook Trout Stream
LONGHOUSE RD
Native Brook Trout Stream
VERSAILLES PLANK RD
Clear Creek
438
North Branch Clear Creek
TAYLOR HOLLOW RD
CCM-001
WATER ST
BUSH RD
LENOX RD
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
2021 Orthoimagery
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Figure 3.11

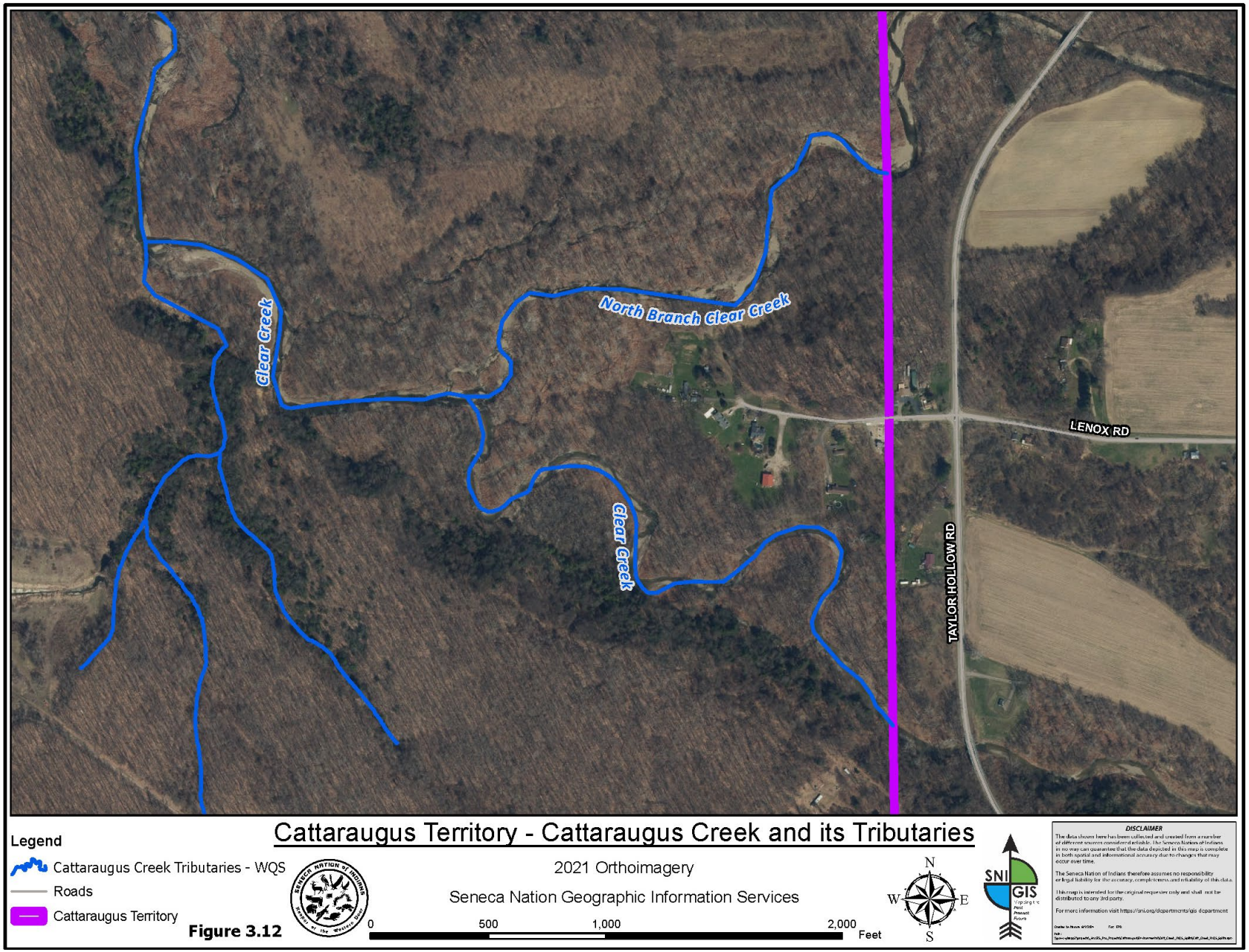
Clear Creek
North Branch Clear Creek
Clear Creek
LENOX RD
TAYLOR HOLLOW RD
Legend
Cattaraugus Creek Tributaries - WQS
Roads
Cattaraugus Territory
Cattaraugus Territory - Cattaraugus Creek and its Tributaries
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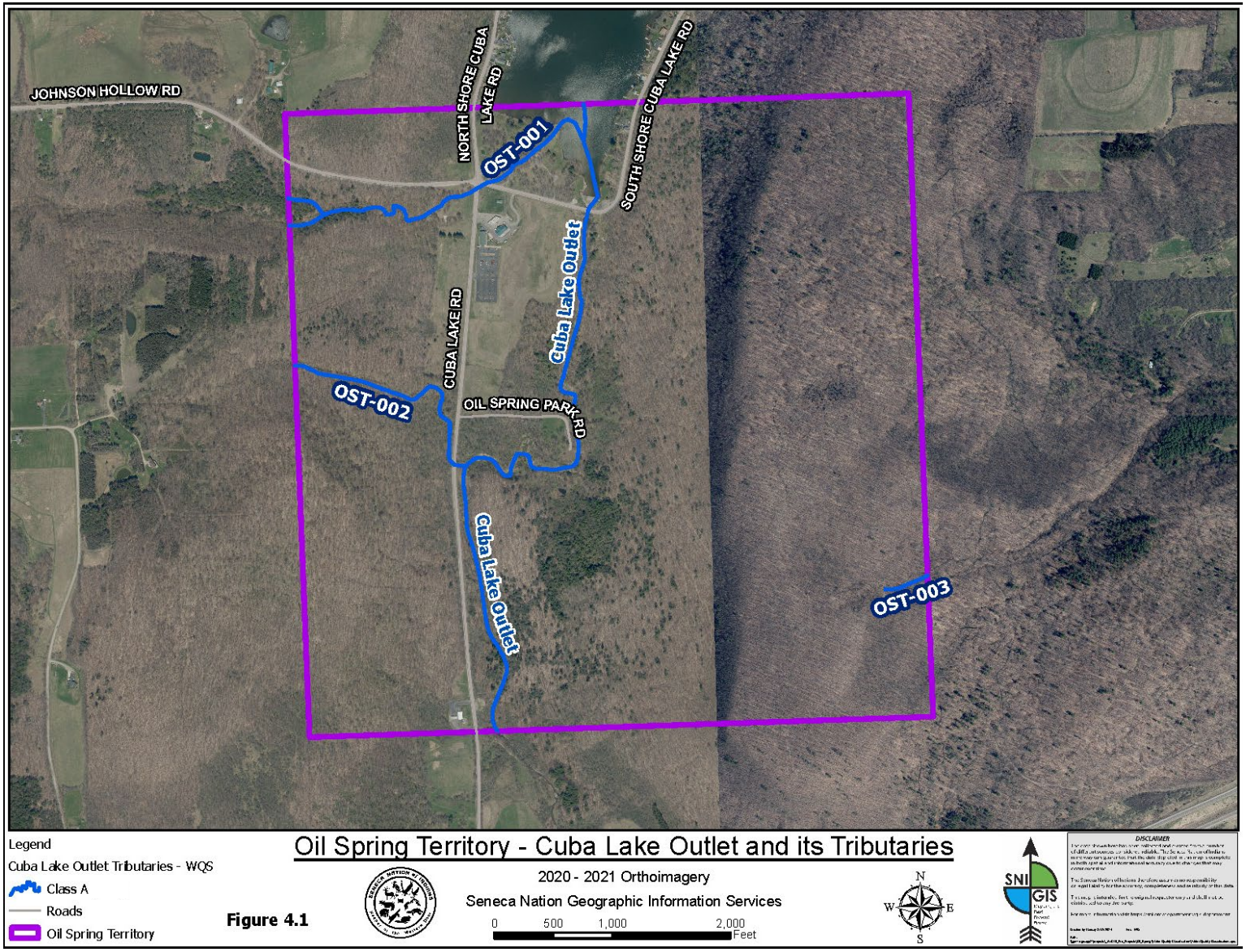
Figure 3.12

Figures 4.1 – 4.4: Oil Spring Territory Water Resources




NORTH SHORE CUBA LAKE RD
SOUTH SHORE CUBA LAKE RD
JOHNSON HOLLOW RD
OST-001
CUBA LAKE RD
Cuba Lake Outlet
Legend
Cuba Lake Outlet Tributaries - WQS
Class A
Roads
Oil Spring Territory
Oil Spring Territory - Cuba Lake Outlet and its Tributaries
2020 - 2021 Orthoimagery
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Figure 4.2

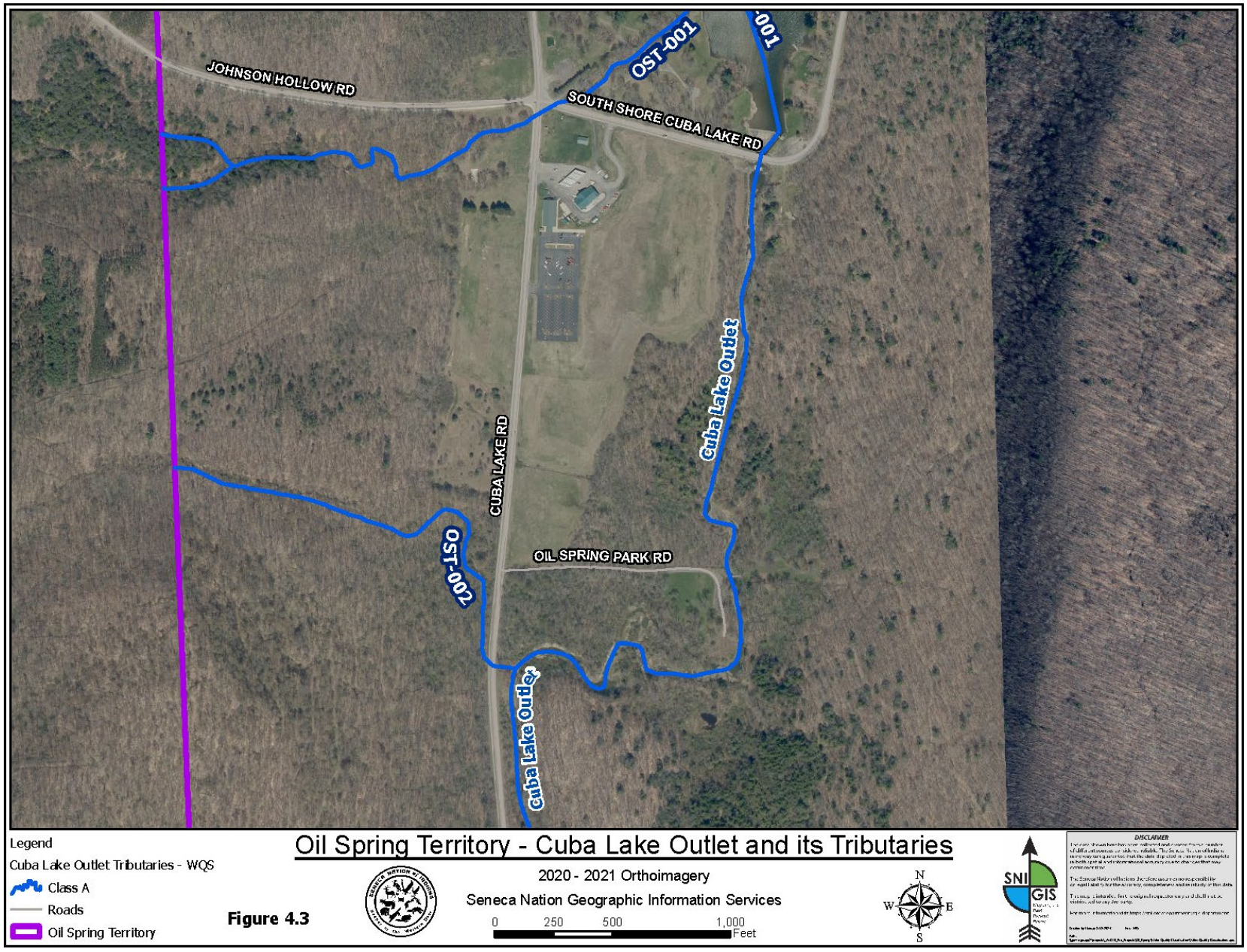
JOHNSON HOLLOW RD
SOUTH SHORE CUBA LAKE RD
OST-001
CUBA LAKE RD
Cuba Lake Outlet
OST-002
OIL SPRING PARK RD
Cuba Lake Outlet
Legend
Cuba Lake Outlet Tributaries - WQS
Class A
Roads
Oil Spring Territory
Oil Spring Territory - Cuba Lake Outlet and its Tributaries
2020 - 2021 Orthoimagery
Seneca Nation Geographic Information Services
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Figure 4.3

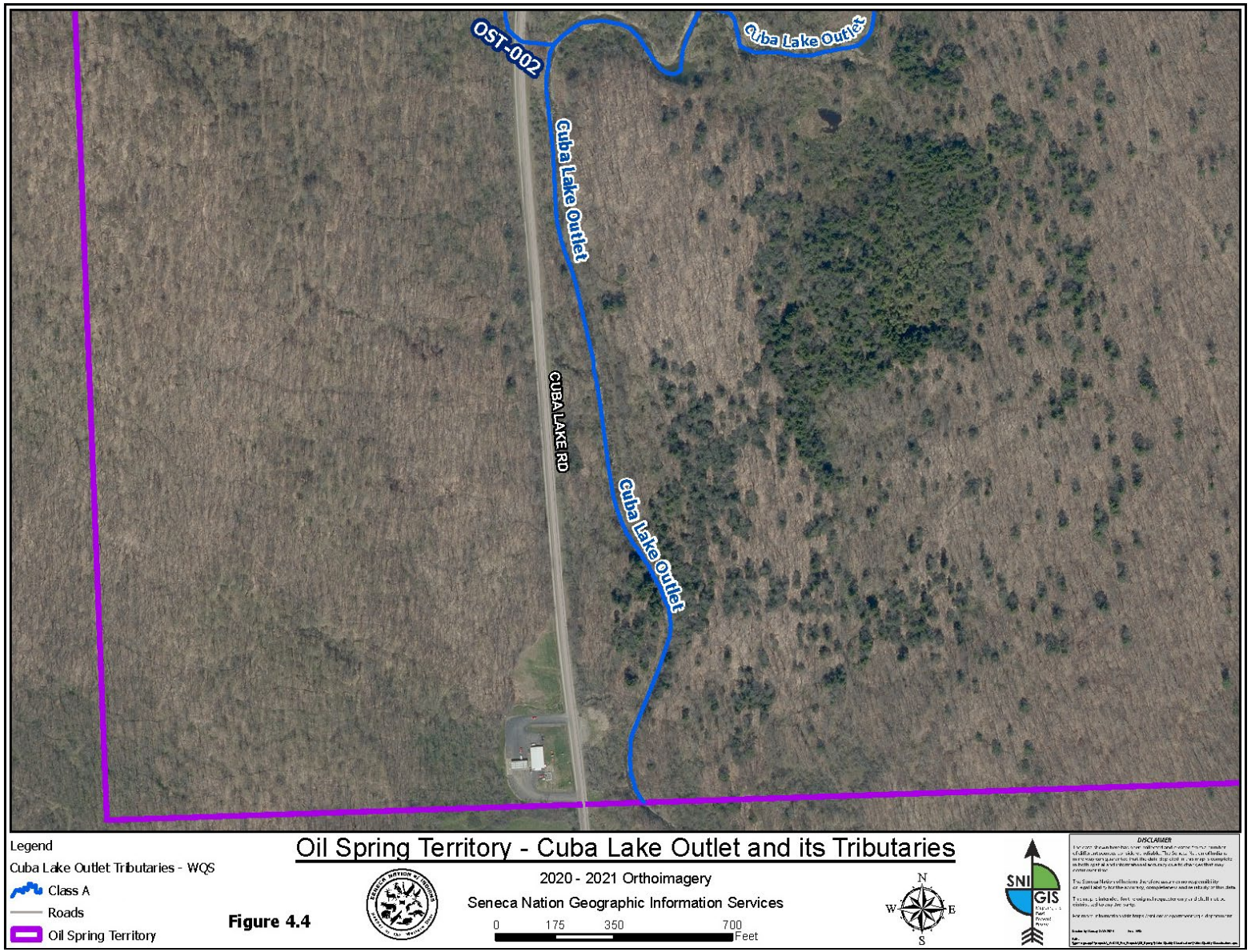
OST-002
Cuba Lake Outlet
Cuba Lake Outlet
CUBA LAKE RD
Cuba Lake Outlet
Legend
Cuba Lake Outlet Tributaries - WQS
Class A
Roads
Oil Spring Territory
Oil Spring Territory - Cuba Lake Outlet and its Tributaries
2020 - 2021 Orthoimagery
Seneca Nation Geographic Information Services
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Figure 4.4

Appendix B – Numeric Water Quality Criteria

Section B-1: Recreational Water Quality Criteria

(A) Primary Contact Recreation and Ceremonial Use

Table B-1 below contains the recreational pathogen indicator water quality criteria applicable for all waters with recreational designated uses - Primary Contact (PC) and Secondary Contact Recreation (SC), as well as Ceremonial and Cultural Use (CC) – as specified in Appendix A, Tables A-1 through A-3.

Table B-1: Primary Contact Recreation and Ceremonial and Cultural Use Water Quality Criteria

Criteria Elements	Magnitude	
Indicator	GM (cfu/100 mL) [a]	STV (cfu/100 mL)
E. coli	126	410
[a] *EPA Method 1603* (U.S. EPA, 2002b), or another equivalent method, shall be used to measure *E. coli*.		
Duration and Frequency: The water body GM should not be greater than the selected GM magnitude in any consecutive 30-day period. There should not be greater than a ten percent excursion frequency of the selected Statistical Threshold Value (STV) magnitude in the same 30-day period. The STV refers to the approximation of the 90th percentile of the water quality distribution and is intended to be a value that should not be exceeded by more than 10 percent of the samples taken.		

Section B-2: Water quality criteria for toxic pollutants

(A) Toxic Pollutants

Water quality criteria for specific substances or groups of substances are listed below in Table B-2 of this Appendix B for the applicable water classes. The substance name is listed with the associated Chemical Abstract Service Registry Number (CAS No.) where applicable. For entries in **Table B-2**, **Table B-2a**, and **Table B-3** of this Appendix B that refer to chemical groups, congeners or other expressions of multiple substances, the criteria applies to the sum of the substances, unless otherwise indicated. Special interpretive remarks and notes are provided throughout, as necessary.

The Chemical Abstracts Services (CAS) registry numbers provide a unique identification for each chemical.

(B) Criteria Types

Where more than one Type of criteria is listed for a water class, the most stringent applies. These criteria, denoted in the column headed "Type," are as follows:

Human Health (Water Source) [1]	HH(WS)
Human Health (Fish Consumption) [2]	HH(FC)
Aquatic Life (Chronic effects) [3]	AL(C)
Aquatic Life (Acute effects) [4]	AL(A)
Wildlife [5]	W

[1]: HH(WS) is the criteria to protect the human consumption of water, after appropriate treatment. These values are to protect consumption of water only and were derived based on methodologies in 6 CRRNY Part 702 that were approved by EPA. Certain parameters are based on EPA Maximum Contaminant Level (MCL) and these values are noted in Table B-2. Unless otherwise noted, HH(WS) criteria are evaluated as annual averages which are not to be exceeded at any time.

[2]: HH(FC) is the criteria to protect the human consumption of fish (organism only). Unless otherwise noted in Table B-2, these criteria values were derived based on methodologies in 6 CRRNY Part 702 that were approved by EPA. Unless otherwise noted, HH(FC) criteria are evaluated as annual averages which are not to be exceeded at any time.

[3]: AL(C) is the criteria continuous concentration (CCC), which protect aquatic life from chronic effects. Unless otherwise noted, these criteria are the highest allowable four-day average instream concentration of a pollutant and are not to be exceeded more than once every three years.

[4]: AL(A) is the criteria maximum concentration (CMC), which protect aquatic life from acute effects. Unless otherwise noted, these criteria are the highest allowable one-hour average instream concentration of a pollutant and are not to be exceeded more than once every three years.

[5]: Wildlife criteria are based on Water Quality Criteria for Protection of Wildlife from 40 CFR 132, Table 4 (included in Appendix C, Section C-5 of these Water Quality Standards). Unless otherwise noted, Wildlife criteria are evaluated as monthly averages which are not to be exceeded at any time.

All criteria types are for freshwater.

(C) Units

The criteria are in micrograms per liter (ug/L) for each pollutant or substance, unless otherwise noted.

Table B-2: Water Quality Criteria for Toxic Pollutants

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Acenaphthene (83329)	A	90[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Acetaldehyde (75070)	A	8.0	HH(WS)
Acrolein (107028)	A	3.0[a]	AL(A)
	A	3.0[a]	AL(C)
	A	400[b]	HH(FC)
Remarks: [a] These values are EPA's national recommended 304(a) aquatic life criteria. [b] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Acrylonitrile (107131)	A	7.0[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Alachlor (15972608)	A	0.5	HH(WS)
Aldicarb (116063)	A	7.0	HH(WS)
Aldrin (309002)	A	7.7×10^{-7} [a]	HH(FC)
	A	1.5[b]	AL(A)
Remarks: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [b] This criterion is based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC (AL(A)) derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the CMC values given are the result of dividing by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.			
Alkyldimethyl benzyl ammonium chloride (68391-01-5)	A	[a]	AL(C)
Remark: [a] Refer to criteria for "Quaternary ammonium compounds."			
Aluminum, ionic (pH 5.0-10.5) (7429905)	A	[a]	AL(C)
	A	[a]	AL(A)
Remark: [a] Acute (CMC) and chronic (CCC) freshwater aluminum criteria values for a site shall be calculated using the 2018 Aluminum Criteria Calculator (*Aluminum Criteria Calculator V.2.0.xlsx*, or a calculator in R or other software package using the same 1985 Guidelines calculation approach and underlying model equations as in the *Aluminum Criteria Calculator V.2.0.xlsx*) as established in EPA's Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA 822–R–18–001). Where required by federal regulations, measurements of total recoverable aluminum shall be used. To apply the aluminum criteria for Clean Water Act purposes, criteria values based on ambient water			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
chemistry conditions must protect the water body over the full range of variability, including during conditions when aluminum is most toxic.			
Ammonia (7664417)	A	[a]	AL(C)
	A	[a]	AL(A)

Remarks:
[a] Freshwater Ammonia Criteria are pH, Temperature and Life-stage Dependent, see calculation of Ammonia criteria below for AL(A) [acute] and AL(C) [chronic]:

Acute Criterion Calculations AL(A):

The one-hour average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on average, the acute criterion magnitude calculated using the following equations:

Cold Water Fisheries AL(CF) or AL(CF)^S

$$AL(A) = MIN\left(\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}\right), \left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036\times(20-T)}\right)\right)\right)$$

Warm Water Fisheries AL(WF)

$$AL(A) = 0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times MIN\left(51.93, 23.12 \times 10^{0.036\times(20-T)}\right)$$

Chronic Criterion Calculations AL(C)*:

The thirty-day rolling average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the chronic criterion magnitude (CCC) calculated using the following equation:

Cold Water Fisheries (CF)/(CF)^S and Warm Water Fisheries (WF)

$$AL(C) = 0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028\times(20-MAX(T,7))}\right)$$

Note
* The highest four-day average within the 30-day averaging period is to be no more than 2.5 times the chronic criterion (e.g., 2.5 x 1.9 mg TAN/L at pH 7 and 20˚C or 4.8 mg TAN/L) more than once in three years on average.

Aniline (62533)	A	5	HH(WS)
Antimony (CAS No. Not Applicable)	A	3	HH(WS)
	A	640[a]	HH(FC)

[a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Anthracene (120127)	A	400 [a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Arsenic (7440382)	A	10 [a]	HH(WS)
	A	150	AL(C)
	A	340	AL(A)
	A	0.14	HH(FC)
Remarks: [a] This value is based on EPA's current drinking water MCL for arsenic. Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			
Asbestos (1332214)	A	[a]	HH(WS)
Remark: [a] 7,000,000 fibers (longer than 10 um)/L.			
Azinphosmethyl ("Guthion") (86500)	A	0.005	AL(C)
Barium (7440393)	A	2.0[a]	HH(WS)
Remark: [a] This value is based on EPA's current drinking water MCL for barium.			
Benzene (71432)	A	1.0	HH(WS)
	A	10	HH(FC)
Benzidine (92875)	A	0.1	AL(C)
	A	0.011[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Benzo(a)anthracene (56553)	A	0.0013	HH(FC)
Benzo(a)pyrene (50328)	A	0.00013	HH(FC)
Benzo(b)fluoranthene (205992)	A	0.0013	HH(FC)
Benzo(k)fluoranthene (207089)	A	0.013	HH(FC)
Beryllium (7440417)	A	[a]	AL(C)
	A	4.0[b]	HH(WS)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Remarks: [a] 11 ug/L, when hardness is less than or equal to 75 ppm; 1,100 ug/L when hardness is greater than 75 ppm. Aquatic life criteria apply to acid-soluble form. [b] This value is based on EPA's current drinking water MCL for beryllium.			
Bis(2-chloroethyl)ether (111444)	A	2.2[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Bis(chloromethyl)ether (542881)	A	0.017[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Bis(2-chloro-1-methylethyl)ether (108601)	A	4,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Bis(2-ethylhexyl)phthalate (117817)	A	5.0	HH(WS)
	A	0.6	AL(C)
	A	0.37[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Boron (7440428)	A	10,000[a]	AL(C)
Remark: [a] Aquatic life criteria apply to acid-soluble form.			
Bromochloromethane (74975)	A	5.0	HH(WS)
Bromomethane (74839)	A	5.0	HH(WS)
Bromoform (75252)	A	120[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Butylbenzyl Phthalate (85687)	A	0.10[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
n-Butylbenzene (104518)	A	5.0	HH(WS)
sec-Butylbenzene (135988)	A	5.0	HH(WS)
tert-Butylbenzene (98066)	A	5.0	HH(WS)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Cadmium (CAS No. Not Applicable)	A	5.0	HH(WS)
	A	[a]	AL(C)
	A	[b]	AL(A)
Remarks: [a] $AL(C)\ [chronic] = \{\ 1.101672 - [\ln(ppm\ hardness) \times (0.041838)]\} \times e^{(0.7977 \times \ln(ppm\ hardness) - 3.909)}$ [b] $AL(A)[acute] = \{\ 1.136672 - [\ln(ppm\ hardness) \times (0.041838)]\} \times e^{(0.9789 \times \ln(ppm\ hardness) - 3.866)}$ Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			
Carbaryl (63252)	A	2.1[a]	AL(A)
	A	2.1[a]	AL(C)
Remark: [a] These values are EPA's national recommended 304(a) aquatic life criteria.			
Carbofuran (1563662)	A	15	HH(WS)
	A	1.0	AL(C)
Carbon disulfide (75150)	A	60	HH(WS)
Carbon tetrachloride (56235)	A	5.0	HH(FC)
Chlordane [a] (57749)	A	0.05	HH(WS)
	A	2×10^{-5}	HH(FC)
	A	0.0043[b]	AL(C)
	A	1.2[b]	AL(A)
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. [b] These criteria are based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the CMC values given are the result of dividing by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.			
Chloride (16887006)	A	250,000	HH(WS)
	A	230,000	AL(C)
	A	860,000	AL(A)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Chlorinated dibenzo-p-dioxins and Chlorinated dibenzofurans [a] (CAS No. Not applicable)	A	7×10^{-7} [b]	HH(WS)
	A	6×10^{-10} [b]	HH(FC)
	A	3.1×10^{-9} [c]	W

Remarks:

[a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.

[b] Value is for the total of the chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans that are listed in the table below as equivalents of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), CAS No. 1746016.

The 2,3,7,8-TCDD equivalent for a congener for the HH(WS) criteria is obtained by multiplying the concentration of that congener by its Toxicity Equivalency Factor (TEF) from the table below.

The 2,3,7,8-TCDD equivalent for a congener for the HH(FC) criteria is obtained by multiplying the concentration of that congener by its TEF and its Bioaccumulation Equivalency Factor (BEF) from the table below.

[c] Applies only to 2,3,7,8-TCDD.

CONGENER	TEF	BEF
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	1
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	0.9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.3
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	0.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01	0.05
Octachlorodibenzo-p-dioxin	0.001	0.01
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.8
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.2
2,3,4,7,8-Pentachlorodibenzofuran	0.5	1.6
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.08
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.2
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.7
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.6
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.01
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.4
Octachlorodibenzofuran	0.001	0.02

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Chlorine [a] (7782505)	A	5.0	AL(C)
	A	19	AL(A)
	A	4,000[b]	HH(WS)
Remarks: [a] Total residual chlorine. [b] This value is based on EPA's current drinking water MRDL (maximum residual disinfectant level) for chlorine.			
Chlorobenzene (108907)	A	5.0	HH(WS)
	A	400	HH(FC)
	A	5.0	AL(C)
4-Chlorobenzotrifluoride (98566)	A	5.0	HH(WS)
Chloroform (67663)	A	2,000	HH(FC)
	A	7.0	HH(WS)
Chlorodibromomethane (124481)	A	21[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2-Chloronaphthalene (91587)	A	1,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2-Chlorophenol (95578)	A	800[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Chlorophenoxy Herbicide (2,4-D) (94757)	A	12,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex] (93721)	A	400[a]	HH(FC)
	A	0.05[b]	HH(WS)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [b] This value is based on EPA's current drinking water MCL for silvex.			
2-Chlorotoluene (95498)	A	5.0	HH(WS)
3-Chlorotoluene (108418)	A	5.0	HH(WS)
4-Chlorotoluene (106434)	A	5.0	HH(WS)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
3-Chloro-1,1,1-trifluoropropane (460355)	A	5.0	HH(WS)
Chlorpyrifos (2921882)	A	0.041[a]	AL(C)
	A	0.083[a]	AL(A)
Remark: [a] These values are EPA's national recommended 304(a) aquatic life criteria.			
Chromium (III) (16065831)	A	50[a]	HH(WS)
	A	[b]	AL(C)
	A	[c]	AL(A)
Remarks: [a] Applies to total chromium [chromium (III) + chromium (VI)] [b] $A(C)[chronic] = e^{(0.819\times\ln(ppm\ hardness)+0.6848)} \times (0.86)$ [c] $A(A)[acute] = e^{(0.819\times\ln(ppm\ hardness)+3.7256)} \times (0.316)$ Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			
Chromium (VI) (18540299)	A	11	AL(C)
	A	16	AL(A)
Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			
Chrysene (218019)	A	0.13	HH(FC)
Cobalt (CAS No. Not Applicable)	A	5.0	AL(C)
Copper (7440508)	A	200	HH(WS)
	A	[a]	AL(C)
	A	[a]	AL(A)
Remarks: [a] Acute [AL(A)] and chronic [AL(C)] freshwater copper criteria shall be developed using EPA's 2007 *Aquatic Life Ambient Freshwater Quality Criteria—Copper* (EPA–822–R–07–001), which incorporates use of the copper biotic ligand model (BLM). Where sufficiently representative ambient data for DOC, calcium, magnesium, sodium, potassium, sulfate, chloride, or alkalinity are not available, the Tribe shall use the 10th percentile values from publicly available peer-reviewed datasets such as the US Geological Survey National Waters Information System (NWIS) and EPA's Storage and Retrieval Data Warehouse. See EPA's Metals Aquatic Life Criteria and Chemistry Map (MetALiCC-MAP v1.0), https://epa.maps.arcgis.com/apps/View/index.html?appid=8c7cb6950ffa4a74b73465bfa0b3191c Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Cyanide (57125)	A	200	HH(WS)
	A	400	HH(FC)
	A	5.2 [a]	AL(C)
	A	22 [a]	AL(A)
Remark: [a] These criteria are expressed as free cyanide: the sum of HCN and CN^- expressed as CN.			
p,p'-DDD [a] (72548)	A	0.3	HH(WS)
	A	8×10^{-5}	HH(FC)
	A	1.1×10^{-5} [b]	W
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. [b] Applies to the sum of p,p'-DDD, p,p'-DDE and p,p'-DDT.			
p,p'-DDE [a] (72559)	A	0.2	HH(WS)
	A	7×10^{-6}	HH(FC)
	A	[b]	W
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. [b] See criteria for p,p'-DDT.			
p,p'-DDT [a] (50293)	A	0.2	HH(WS)
	A	1×10^{-5}	HH(FC)
	A	1.1×10^{-5} [b]	W
	A	0.0001	AL(C)
	A	0.55	AL(A)
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. [b] Applies to the sum of p,p'-DDD, p,p'-DDE and p,p'-DDT.			
Dechlorane Plus (13560899)	A	5.0	HH(WS)
Demeton (8065483)	A	0.1	AL(C)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Diazinon (333415)	A	0.08	AL(C)
	A	0.17[a]	AL(A)
Remark: [a] These values are EPA's national recommended 304(a) aquatic life criteria.			
Dibenzo(a,h)anthracene (53703)	A	1.3×10^{-4} [a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
1,2-Dibromobenzene (583539)	A	5.0	HH(WS)
1,3-Dibromobenzene (108361)	A	5.0	HH(WS)
1,4-Dibromobenzene (106-37-6)	A	5.0	HH(WS)
1,2-Dibromo-3-chloropropane (96128)	A	0.04	HH(WS)
Dibromodichloromethane (594183)	A	5.0	HH(WS)
Di-n-butyl phthalate (84742)	A	30	HH(FC)
Dichlorobenzenes (95501; 541731; 106467)	A	3.0 [a]	HH(WS)
	A	5.0 [b]	AL(C)
	A	3,000[1]/10[2]/ 900[3]	HH(FC)[c]
Remarks: [a] Applies to each isomer (1,2-,1,3- and 1,4-dichlorobenzene) individually. [b] Applies to the sum of 1,2-, 1,3- and 1,4-dichlorobenzene. [c] These values are EPA's national recommended 304(a) human health criteria for consumption of organism only. [1] Applies to 1,2-Dichlorobenzene (CAS No.: 95501) organisms only. [2] Applies to 1,3-Dichlorobenzene (CAS No.: 541731) organisms only. [3] Applies to 1,4-Dichlorobenzene (CAS No.: 106467) organisms only.			
3,3'-Dichlorobenzidine (91941)	A	0.15[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
3,4-Dichlorobenzotrifluoride (328847)	A	5.0	HH(WS)
Dichlorobromomethane (75274)	A	27[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. a			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
1,1-Dichloroethane (75343)	A	5.0	HH(WS)
1,2-Dichloroethane (107062)	A	0.6	HH(WS)
	A	650[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
1,1-Dichloroethylene (75354)	A	20,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
cis-1,2-Dichloroethene (156592)	A	5.0	HH(WS)
trans-1,2-Dichloroethene (156605)	A	5.0	HH(WS)
Dichlorofluoromethane (75434)	A	5.0	HH(WS)
2,4-Dichlorophenol (120832)	A	60[a]	HH(FC)
Remarks: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2,4-Dichlorophenoxyacetic acid (94757)	A	50	HH(WS)
1,1-Dichloropropane (78999)	A	5.0	HH(WS)
1,2-Dichloropropane (78875)	A	1.0	HH(WS)
	A	31[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
1,3-Dichloropropane (142289)	A	5.0	HH(WS)
2,2-Dichloropropane (594207)	A	5.0	HH(WS)
1,3-Dichloropropene (542756)	A	0.4[a]	HH(WS)
	A	12[b]	HH(FC)
Remarks: [a] Applies to the sum of cis- and trans-1,3-dichloropropene, CAS numbers 10061015 and 10061026, respectively. [b] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2,3-Dichlorotoluene (32768540)	A	5.0	HH(WS)
2,4-Dichlorotoluene (95738)	A	5.0	HH(WS)
2,5-Dichlorotoluene (19398619)	A	5.0	HH(WS)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
2,6-Dichlorotoluene (118-69-4)	A	5.0	HH(WS)
3,4-Dichlorotoluene (95750)	A	5.0	HH(WS)
3,5-Dichlorotoluene (25186474)	A	5.0	HH(WS)
Dieldrin [a] (60571)	A	0.004	HH(WS)
	A	6.0×10^{-7}	HH(FC)
	A	0.056	AL(C)
	A	0.24	AL(A)
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. These criteria are based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC (AL(A)) derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the CMC value given is the result of dividing by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.			
Diethyl Phthalate (84662)	A	600[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Di(2-ethylhexyl)adipate (103231)	A	20	HH(WS)
N,N-Dimethylaniline (121697)	A	1.0	HH(WS)
Dimethyl Phthalate (131113)	A	2,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2,4-Dimethylphenol (105679)	A	1,000	HH(FC)
Dinitrophenols (25550587)	A	1,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2,4-Dinitrophenol (51285)	A	300[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
2,4-Dinitrotoluene (121142)	A	1.7[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Diphenylhydrazines (122667)	A	0.2[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Diquat (2764729)	A	20[a]	HH(WS)
Remark: [a] Applies to the concentration of diquat ion whether free or as an undissociated salt.			
Dyphylline (479185)	A	50	HH(WS)
Alpha-Endosulfan (959988)	A	30[a]	HH(FC)
	A	0.056[b]	AL(C)
	A	0.11[b c]	AL(A)
Remarks: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [b] These values are EPA's national recommended 304(a) aquatic life criteria. These values were derived from data for endosulfan and is most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan. [c] These aquatic life criteria are based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC (AL(A)) derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the CMC value given is the result of dividing by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.			
Beta-Endosulfan (33213659)	A	40[a]	HH(FC)
	A	0.056[b]	AL(C)
	A	0.11[b c]	AL(A)
Remarks: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [b] These values are EPA's national recommended 304(a) aquatic life criteria. These values were derived from data for endosulfan and are most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan. [c] These aquatic life criteria are based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC (AL(A)) derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the CMC value given is the result of dividing by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Endosulfan (115297)	A	0.009	AL(C)
Endosulfan Sulfate (1031078)	A	40[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Endrin (72208)	A	0.002[a]	HH(WS)
	A	0.002	HH(FC)
	A	0.036	AL(C)
	A	0.086	AL(A)
Remark: [a] This value is based on EPA's current drinking water MCL for endrin.			
Endrin aldehyde (7421934)	A	1.0[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Ethylbenzene (100414)	A	130[a]	HH(FC)
	A	0.7[b]	HH(WS)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [b] This value is based on EPA's current drinking water MCL for ethylbenzene.			
Ethylene dibromide (106934)	A	6×10^{-4}	HH(WS)
Fluoranthene (206440)	A	20[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Fluorene (86737)	A	70[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Fluoride (CAS No. Not Applicable)	A	1,500	HH(WS)
	A	[a]	AL(C)
Remarks: [a] $AL(C) = (0.02)\, exp(0.907\, [ln\, (ppm\ hardness)] + 7.394)$			
Formaldehyde (50000)	A	8.0	HH(WS)
Gross alpha radiation (CAS No. Not Applicable)	A	[a]	HH(WS)
Remark: [a] 15 picocuries per liter, excluding radon and uranium.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Gross beta radiation (CAS No. Not Applicable)	A	[a]	HH(WS)
Remark: [a] 1,000 picocuries per liter, excluding strontium-90 and alpha emitters.			
Heptachlor (76448)	A	0.04	HH(WS)
	A	5.9×10^{-6} [a]	HH(FC)
	A	0.0038	AL(C)
	A	0.52	AL(A)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Heptachlor epoxide (1024573)	A	0.03	HH(WS)
	A	3.2×10^{-5}	HH(FC)
	A	0.0038	AL(C)
	A	0.52	AL(A)
Hexachlorobenzene [a] (118741)	A	0.04	HH(WS)
	A	3×10^{-5}	HH(FC)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
Hexachlorobutadiene [a] (87683)	A	0.5	HH(WS)
	A	0.01	HH(FC)
	A	1.0	AL(C)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
Hexachlorocyclohexane (HCH) –Technical [a] (608731)	A	0.010	HH(FC)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
alpha-Hexachlorocyclohexane [a] (319846)	A	0.01	HH(WS)
	A	0.00039	HH(FC)
Remark:			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
[a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
beta-Hexachlorocyclohexane [a] (319857)	A	0.04	HH(WS)
	A	0.007	HH(FC)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
delta-Hexachlorocyclohexane [a] (319868)	A	0.04	HH(WS)
	A	0.008	HH(FC)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
epsilon-Hexachlorocyclohexane (6108107)	A	0.04	HH(WS)
	A	0.008	HH(FC)
gamma-Hexachlorocyclohexane [Lindane] [a] (58899)	A	0.05	HH(WS)
	A	0.008	HH(FC)
	A	0.95	AL(A)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
Hexachlorocyclopentadiene (77474)	A	0.45	AL(C)
	A	4.0[a]	HH(FC)
	A	0.05[b]	HH(WS)
Remarks: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [b] This value is based on EPA's current drinking water MCL for hexachlorocyclopentadiene.			
Hexachloroethane (67721)	A	5.0	HH(WS)
	A	0.1[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Hydrazine (302012)	A	[a]	AL(C)
Remarks: [a] 5 ug/L at less than 50 ppm hardness and 10 ug/L at greater than or equal to 50 ppm hardness.			
Hydrogen sulfide (7783064)	A	2.0[a]	AL(C)
Remark: [a] Criteria apply to undissociated form.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Hydroquinone (123319)	A	2.2	AL(C)
Remarks: [a] Refer to criteria for "Phenolic compounds (total phenols)." [b] Refer to criteria for "Phenols, total unchlorinated."			
Indeno(1,2,3-cd)pyrene (193395)	A	0.0013[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Iron (7439896)	A	1,000[a]	AL(C)
Remark: [a] This value is EPA's national recommended 304(a) aquatic life criterion.			
Isodecyl diphenyl phosphate (29761215)	A	1.7	AL(C)
Isophorone (78591)	A	1,800[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
2-Isopropyltoluene (527844)	A	5.0	HH(WS)
3-Isopropyltoluene (535773)	A	5.0	HH(WS)
4-Isopropyltoluene (99876)	A	5.0	HH(WS)
Isothiazolones, total (isothiazolinones) (includes 5-chloro-2-methyl-4-isothiazolin-3-one & 2-methyl-4-isothiazolin-3-one) (CAS No. Not Applicable)	A	1.0[a]	AL(C)
Remark: [a] Criteria apply to the sum of these substances.			
Lead (7439921)	A	50	HH(WS)
	A	[a]	AL(C)
	A	[b]	AL(A)
Remarks: [a] $A(C)[chronic] = \{1.46203 - [\ln(ppm\ hardness) \times (0.145712)]\} \times e^{(1.273 \times \ln(ppm\ hardness) - 4.705)}$ [b] $A(A)[acute] = \{1.46203 - [\ln(ppm\ hardness) \times (0.145712)]\} \times e^{(1.273 \times \ln(ppm\ hardness) - 1.46)}$ Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Linear alkyl benzene sulfonates (LAS) (CAS No. Not Applicable)	A	40[a]	AL(C)
Remark: [a] LAS with side chains greater than 13 carbons only; applies to the sum of these substances.			
Magnesium (CAS No. Not Applicable)	A	35,000	HH(WS)
Malathion (121755)	A	0.1	AL(C)
Manganese (7439965)	A	100 [a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Mercury [a] (7439976)	A	0.7	HH(WS)
	A	[b]	HH(FC)
	A	1.4 [c]	AL(A)
	A	1.3×10^{-3} [c d]	W
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. [b] See criteria for methylmercury. [c] Criteria applies to the dissolved form. [d] This value includes methylmercury. Notes: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria It is important to note that the mercury aquatic life criterion includes a caution that it might not be adequately protective of such important fishes as the rainbow trout, coho salmon and bluegill. This recommended water quality criterion was derived from data for inorganic mercury (II), but is applied here to total dissolved mercury. If a substantial portion of the mercury in the water column is methylmercury, this criterion will probably be under protective. In addition, even though inorganic mercury is converted to methylmercury and methylmercury bioaccumulates to a great extent, this criterion does not account for uptake via the food chain because sufficient data were not available when the criterion was derived.			
Methoxychlor (72435)	A	35	HH(WS)
	A	0.03	AL(C)
	A	0.02[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
N-Methylaniline (100618)	A	5.0	HH(WS)
Methyl Bromide (74839)	A	10,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Methyl chloride (74873)	A	5.0	HH(WS)
	A	1,000[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Methylene bisthiocyanate (6317186)	A	1.0	AL(C)
Methylene chloride (75092)	A	5.0	HH(WS)
	A	200	HH(FC)
3-Methyl-4-Chlorophenol (59507)	A	2,000	HH(FC)
2-Methyl-4,6-Dinitrophenol (534521)	A	30	HH(FC)
Methylmercury (22967926)	A	0.2[a]	HH(FC)
Remark: [a] This is a wet-weight fish tissue residue criterion for methylmercury in mg methylmercury/kg fish. The derivation of this value is based on a total fish consumption rate of 0.033 kg/day and a default body weight of 70 kg. https://www.epa.gov/sites/default/files/2020-01/documents/methylmercury-criterion-2001.pdf			
Methyl parathion (298000)	A	[a]	AL(C)
Remark: [a] Refer to criteria for "Parathion and Methyl parathion."			
alpha-Methylstyrene (98839)	A	5.0	HH(WS)
2-Methylstyrene (611154)	A	5.0	HH(WS)
3-Methylstyrene (100801)	A	5.0	HH(WS)
4-Methylstyrene (622979)	A	5.0	HH(WS)
Metolachlor (51218452)	A	10	HH(WS)
Mirex [a] (2385855)	A	0.03	HH(WS)
	A	1×10^{-6}	HH(FC)
	A	0.001	AL(C)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
Niacinamide (98920)	A	500	HH(WS)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Nickel (7440020)	A	100	HH(WS)
	A	[a]	AL(C)
	A	[b]	AL(A)
Remarks: [a] $AL(C)\ [chronic]\ =\ (0.997)\ exp\ (0.846\ [ln\ (hardness)]\ +\ 0.0584)$ [b] $AL(A)\ [acute]\ =\ (0.998)\ exp\ (0.846\ [ln\ (hardness)]\ +\ 2.255)$ Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria			
Nitrate (expressed as N) (CAS No. Not Applicable)	A	10,000[a]	HH(WS)
Remark: [a] Also see criteria for "Nitrate and Nitrite."			
Nitrate and Nitrite (expressed as N) (CAS No. Not Applicable)	A	10,000[a]	HH(WS)
Remark: [a] Applies to the sum of these substances; also see individual criteria for "Nitrate" and "Nitrite."			
Nitrilotriacetic acid (CAS No. Not Applicable)	A	3.0 [a]	HH(WS)
	A	5,000[b]	AL(C)
Remarks: [a] Includes related forms that convert to nitrilotriacetic acid upon acidification to a pH of 2.3 or less. [b] Applies to nitrilotriacetate.			
Nitrite (expressed as N) (CAS No. Not Applicable)	A	1,000 [a]	HH(WS)
	A	[b]	AL(C)
Remarks: [a] Also see criteria for "Nitrate and Nitrite." [b] Aquatic life criteria is 100 ug/L for warm water fishery waters (WF) and 20 ug/L for cold water fishery waters (CF).			
Nitrobenzene (98953)	A	0.4	HH(WS)
	A	600[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Nonylphenol (84852153)	A	6.6[a]	AL(C)
	A	28[a]	AL(A)
Remark: [a] These values are EPA's national recommended 304(a) aquatic life criteria.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Octachlorostyrene [a] (29082744)	A	0.2	HH(WS)
	A	6×10^{-6}	HH(FC)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
Parathion (56382)	A	0.013	AL(C)
	A	0.065	AL(A)
Parathion and Methyl parathion [a] (56382; 298000)	A	0.008	AL(C)
Remark: [a] Applies to the sum of these substances.			
Pentachlorobenzene [a] (608935)	A	0.1	HH(FC)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
Pentachlorophenol (87865)	A	[a]	AL(C)
	A	[b]	AL(A)
	A	0.04[c]	HH(FC)
Remarks: [a] $AL(C)[chronic] = exp\,[1.005\,(pH) - 5.134]$ [b] $AL(A)[acute] = exp\,[1.005\,(pH) - 4.869]$ [c] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
3-Phenyl-1-propene (637503)	A	5.0	HH(WS)
cis-1-Phenyl-1-propene (766905)	A	5.0	HH(WS)
trans-1-Phenyl-1-propene (873665)	A	5.0	HH(WS)
Polychlorinated biphenyls [a] (CAS No. Not Applicable)	A	0.001	HH(WS)
	A	1.0×10^{-6}	HH(FC)
	A	0.014	AL(C)
	A	1.2×10^{-4}	W
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards.			
n-Propylbenzene (103651)	A	5.0	HH(WS)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Pyrene (129-00-0)	A	30	HH(FC)
Quaternary ammonium compounds (including dimethyl benzylammonium chloride & dimethylethyl benzyl ammonium chloride) (CAS No. Not Applicable)	A	10[a]	AL(C)
Remark: [a] Applies to the sum of these substances.			
Radium 226 (CAS No. Not Applicable)	A	[a]	HH(WS)
Remark: [a] 3 picocuries per liter; also see criteria for "Radium 226 and Radium 228."			
Radium 226 and Radium 228 (CAS No. Not Applicable)	A	[a]	HH(WS)
Remark: [a] 5 picocuries per liter; Applies to the sum of these substances.			
Radium 228 (CAS No. Not Applicable)	A	[a]	HH(WS)
Remark: [a] Refer to criteria for "Radium 226 and Radium 228."			
Selenium (CAS No. Not Applicable)	A	0.05[a]	HH(WS)
	A	4,200[b]	HH(FC)
	A	See Table B-2a below [c]	AL(C)
Remarks: [a] This value is based on EPA's current drinking water MCL for selenium. [b] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only. [c] The Aquatic Life criteria are expressed in terms of the dissolved metal in the water column.			
Silver (CAS No. Not Applicable)	A	50	HH(WS)
	A	0.1[a]	AL(C)
	A	[b]	AL(A)
Remarks: [a] Applies to ionic silver. [b] $A(A)\ [acute] = e^{(1.72\times\ln(ppm\ hardness)-6.52)} \times (0.85)$ This criterion is based on EPA's 304(a) recommendation. These criteria are based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the results of the equation for the CMC (acute) value must be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			
Simazine (122349)	A	0.004[a]	HH(WS)
Remark: [a] This value is based on EPA's current drinking water MCL for simazine.			
Strontium 90 (CAS No. Not Applicable)	A	[a]	HH(WS)
Remarks: [a] 8 picocuries per liter. Note: If two or more radionuclides are present, the sum of their doses shall not exceed an annual potential dose of 4 millirems per year.			
Sulfate (CAS No. Not Applicable)	A	250,000	HH(WS)
Sulfite (CAS No. Not Applicable)	A	200	AL(C)
Tetrachlorobenzenes [a] (634662; 634902; 95943; 12408105)	A	0.03 [b]	HH(FC)
Remarks: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132. Refer to Appendix C, Section C-5 of these Water Quality Standards. [b] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only for 1,2,4,5-Tetrachlorobenzene (95943).			
1,1,1,2-Tetrachloroethane (630206)	A	5.0	HH(WS)
1,1,2,2-Tetrachloroethane (79345)	A	3.0 [a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Tetrachloroethylene (Perchloroethylene) (127184)	A	29 [a]	HH(FC)
	A	5.0	HH(WS)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only.			
Thallium (CAS No. Not Applicable)	A	8.0[a]	AL(C)
Remark: [a] Aquatic Life criteria apply to acid-soluble form.			
Theophylline (58559)	A	40	HH(WS)
Toluene (108883)	A	1.0[a]	HH(WS)
	A	520	HH(FC)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Remark: [a] This value is based on EPA's current drinking water MCL for toluene.			
Toxaphene [a] (8001352)	A	0.06	HH(WS)
	A	6×10^{-6}	HH(FC)
	A	0.0002	AL(C)
	A	0.73	AL(A)
Remark: [a] This is a bioaccumulative chemical of concern (BCC), as identified in Section A of Table 6 of 40 CFR Part 132.			
1,2,4-Tribromobenzene (615543)	A	5.0	HH(WS)
Tributyltin (TBT) (CAS No. Not Available)	A	0.072[a]	AL(C)
	A	0.46[a]	AL(A)
Remark: [a] These values are EPA's national recommended 304(a) aquatic life criteria.			
Trichlorobenzenes (87616; 120821; 108703; 12002481)	A	5.0[a]	HH(WS)
	A	5.0[b]	AL(C)
	A	0.076[c]	HH(FC)
Remarks: [a] Applies to each isomer (1,2,3-, 1,2,4- and 1,3,5-trichlorobenzene) individually. [b] Applies to the sum of 1,2,3-, 1,2,4- and 1,3,5-trichlorobenzene. [c] This value is EPA's national recommended 304(a) human health criteria for consumption of organism only for 1,2,4-Trichlorobenze (CAS No.: 120821).			
1,1,1-Trichloroethane (71556)	A	0.2[a]	HH(WS)
	A	200,000[b]	HH(FC)
Remarks: [a] This value is based on EPA's current drinking water MCL for 1,1,1-Trichloroethane. [b] This value is EPA's national recommended 304(a) human health criteria for consumption of organism.			
1,1,2-Trichloroethane (79005)	A	1.0	HH(WS)
	A	8.9[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism.			
1,1,2,2-Trichloroethane (79345)	A	3.0[a]	HH(FC)
Remark:			

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
[a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism.			
Trichloroethene (TCE) (79016)	A	5.0	HH(WS)
	A	7.0[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism.			
Trichlorofluoromethane (75694)	A	5.0	HH(WS)
2,4,5-Trichlorophenol (95954)	A	600[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism.			
2,4,6-Trichlorophenol (88062)	A	2.8[a]	HH(FC)
Remark: [a] This value is EPA's national recommended 304(a) human health criteria for consumption of organism.			
2,4,5-Trichlorophenoxy-propionic acid (93721)	A	10	HH(WS)
1,1,2-Trichloropropane (598776)	A	5.0	HH(WS)
1,2,3-Trichloropropane (96184)	A	0.04	HH(WS)
cis-1,2,3-Trichloropropene (13116579)	A	5.0	HH(WS)
trans-1,2,3-Trichloropropene (13116580)	A	5.0	HH(WS)
alpha,2,4-Trichlorotoluene (94995)	A	5.0	HH(WS)
alpha,2,6-Trichlorotoluene (2014837)	A	5.0	HH(WS)
alpha,3,4-Trichlorotoluene (102476)	A	5.0	HH(WS)
alpha,alpha,4-Trichlorotoluene (13940948)	A	5.0	HH(WS)
1,1,1-Trichloro-2,2,2-trifluoroethane (354585)	A	5.0	HH(WS)
1,1,2-Trichloro-1,2,2-trifluoroethane (76131)	A	5.0	HH(WS)
1,2,3-Trimethylbenzene (526738)	A	5.0	HH(WS)
1,2,4-Trimethylbenzene (95636)	A	5.0	HH(WS)
1,3,5-Trimethylbenzene (108678)	A	5.0	HH(WS)
Triphenyl phosphate (115866)	A	4.0	AL(C)

SUBSTANCE (CAS No.)	WATER CLASSES	CRITERIA (ug/L)	TYPE
Tritium (CAS No. Not Applicable)	A	[a]	HH(WS)
Remark: [a] 20,000 picocuries per liter; if two or more radionuclides are present, the sum of their annual dose equivalent to the total body or any organ shall not exceed 4 millirems per year.			
Vanadium (CAS No. Not Applicable)	A	14[a]	AL(C)
Remark: [a] Criteria apply to acid-soluble form.			
Vinyl chloride (75014)	A	1.6[a]	HH(FC)
	A	2.0	HH(WS)
Remark: [a] These values are EPA's national recommended 304(a) human health criteria for consumption of organism.			
1,2-Xylene (95476)	A	5	HH(WS)
1,3-Xylene (108383)	A	5	HH(WS)
1,4-Xylene (106423)	A	5	HH(WS)
Zinc (7440666)	A	[a]	AL(C)
	A	[b]	AL(A)
Remarks: [a] $AL(C)\ [chronic]\ =\ (0.986)\ \{exp(0.8473\ [ln(ppm\ hardness)]\ +\ 0.884)\}$ [b] $AL(A)\ [acute]\ =\ (0.978)\ \{exp(0.8473\ [ln(ppm\ hardness)]\ +\ 0.884)\}$ Note: The above aquatic life criteria are expressed in terms of the dissolved metal in the water column. See Table B-3 for conversion factors to convert between total recoverable and dissolved measurements. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria.			

Table B-2a: Selenium Aquatic Life Criteria for Fresh Waters

Criterion Element	Magnitude	Duration	Frequency
Fish Tissue [a] (Egg-Ovary) [b]	15.1 mg/kg dw	Instantaneous measurement [c]	Not to be exceeded
Fish Tissue [a] (Whole Body or Muscle) [d]	8.5 mg/kg dw or 11.3 mg/kg dw muscle (skinless, boneless filet)	Instantaneous measurement [c]	Not to be exceeded
Water Column [e] (Monthly Average Exposure)	1.5 µg/L in lentic aquatic systems 3.1 µg/L in lotic aquatic systems	30 days	Not more than once in three years on average
Water Column [e] (Intermittent Exposure) [f]	$WQC_{int} = \frac{WQC_{30\text{-}day} - C_{bkgrnd}(1 - f_{int})}{f_{int}}$	Number of days/month with an elevated concentration	Not more than once in three years on average

[a] Fish tissue elements are expressed as steady-state.
[b] Egg/ovary supersedes any whole-body, muscle, or water column element when fish egg/ovary concentrations are measured, except as noted in footnote d below.
[c] Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured, except as noted in footnote d below.
[d] Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. When selenium inputs are increasing, water column values are the applicable criterion element in the absence of steady-state condition fish tissue data.
[e] Where $WQC_{30\text{-}day}$ is the water column monthly element for either lentic or lotic waters; C_{bkgrnd} is the average background selenium concentration; and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥0.033 (corresponding to 1 day).
[f] Fish tissue data provide instantaneous point measurements that reflect integrative accumulation of selenium over time and space in fish population(s) at a given site.

Table B-3: Conversion Factors (CF)[a] for Dissolved Metal Criteria

Metal	Freshwater AL(A), acute	Freshwater AL(C), chronic
Arsenic	1.000	1.000
Cadmium	$1.136672 - [(ln\ hardness)(0.041838)]$	$1.101672 - [(ln\ hardness)(0.041838)]$
Chromium III	0.316	0.860
Chromium VI	0.982	0.962
Copper	0.960	0.960
Lead	$1.46203 - [(ln\ hardness)(0.145712)]$	$1.46203 - [(ln\ hardness)(0.145712)]$
Mercury	0.85	0.85
Nickel	0.998	0.997
Selenium	—	—
Silver	0.85	—
Zinc	0.978	0.986

[a] Equation for CF, $\boldsymbol{CF = \frac{Criteria_{Dissolved}}{Criteria_{Total}}}$

Appendix C – Applicable References

Section C-1: 40 CFR § 131.14

Section C-2: 40 CFR § 132, Appendix B to Part 132

Section C-3: 40 CFR § 132, Appendix F to Part 132

Section C-4: 40 CFR § 122.47

Section C-5: 40 CFR § 132, Tables to Part 132