

NOTICE OF DETERMINATION OF NON- SIGNIFICANCE

This notice is issued pursuant to the State Environmental Quality Review Act (SEQRA), Article 8 of the Environmental Conservation Law, and its implementing regulations at 6 N.Y.C.R.R. Part 617.

LEAD AGENCY: Town Board
Town of Wheatfield
2800 Church Road
Wheatfield, NY 14120

In accordance with the provisions of SEQRA, the Town of Wheatfield Town Board, as Lead Agency, has reviewed the following action as it relates to the environment:

ACTION TITLE: Local Law Regulating Biosolids in the Town of Wheatfield

DESCRIPTION OF THE ACTION:

Background

Quasar Energy Group ("Quasar") is a Cleveland-based company which owns and operates numerous anaerobic digestion ("AD") facilities, most of which are located in the state of Ohio. During the AD process, microbes break down solid waste material into methane gas, which can be used to generate electricity or to make compressed natural gas. The Town Board has come to understand that a significant percentage of solid waste feedstock utilized by Quasar's AD operations (reportedly up to 50%) is sewage sludge derived from the treatment of municipal wastewater containing, among other things, human wastes and a vast array of any chemicals that may be found in a municipal sewer system. Quasar's AD process does not eliminate the solid waste feedstock, and significant quantities of liquid and solids, referred to as "biosolids," require disposal. Quasar's business model involves treatment of the solid waste feedstock to Class B standards to reduce pathogens, marketing these biosolids as a fertilizer / organic soil amendment product called "Equate," which generally is destined for land application on numerous off-site farms, providing an inexpensive, if not profitable, method of biosolids disposal. Approximately 30% of the biosolids produced in New York are managed as beneficial use with the majority treated to Class A standards to eliminate pathogens using composting and chemical stabilization.

In early 2012, an entity known as "Forest City Land Group," and then later Quasar, approached the Town of Wheatfield Building Department regarding a proposal to construct a "biomass / energy facility" at 2150 Liberty Drive in the Town of Wheatfield. Promotional materials provided to the Town concerning Quasar's AD operations in Cleveland, Ohio state that "The biomass that is used as fuel for the production of electricity primarily comes from a variety of sources including food processing wastes, expired beverages (dairy, soda, beer), and other fats oils and greases." A Material Safety Data Sheet (MSDS) provided by Quasar for "Equate" also claims, among other things, that Equate contains "no hazardous chemicals."

On or about May 30, 2012, Quasar Energy Group submitted an application to the Town of Wheatfield Planning Board for site plan approval for the proposed AD on Liberty Drive. The site plan included, among other things, a 230,000 gallon feedstock holding tank and a 750,000 dual purpose tank. Both the site plan application and accompanying SEQRA Environmental Assessment Form (EAF) prepared by Quasar's consultant are devoid of any mention of biosolids. In addition, Part 1 of Quasar's EAF states in §§s (B)(12),(16) and (17) that the project would not involve the generation or disposal of solid waste or surface liquid waste disposal. Based on the site plan application materials submitted by Quasar, the Town Planning Board issued a SEQRA Negative Declaration on or about July 18, 2012, and later approved the site plan on or about August 15, 2012.

On or about June 13, 2012, a Quasar affiliate, Niagara BioEnergy, submitted an application to the New York State Department of Environmental Conservation ("DEC") for approval to construct and operate the proposed AD on Liberty Drive, which constitutes a solid waste management facility regulated under 6 N.Y.C.R.R Part 360. The AD on Liberty Drive is owned by another Quasar affiliate, Sustainable BioElectric LLC, and is referred to as the "Niagara Bioenergy Anaerobic Digestion Facility" (hereinafter "Niagara Bioenergy AD"). Quasar's Part 360 application describes the types of solid waste to be handled at the Niagara Bioenergy AD as: "organic solids, food wastes, oil and grease, biosolids (sewage sludge)." Notably, "biosolids" are the last item on the list.

In a July 3, 2012 letter to Town of Wheatfield Supervisor Robert Cliffe, DEC concurred that the Town Planning Board should act as SEQRA lead agency for purposes of the Niagara Bioenergy AD site plan application "since the environmental impacts of the proposal are primarily of local significance." Significantly, however, the Niagara Bioenergy AD is inseparable from yet another Part 360 land application permit separately considered and approved by the DEC, which authorizes Quasar to spread Equate on various sites throughout the region, including numerous farm fields in Lewiston, Wheatfield, Pendleton, Cambria and Wilson. See, e.g. Sustainable Bioelectric LLC Permit No. 9-9909-00112/00001 (7/24/13-7/23/18)("Milleville Land Application Permit") and November 2012 Sludge Management Plan, authorizing the land application of biosolids from Niagara Bioenergy AD at "Milleville Farms, various Towns." Moreover, the Town Board has learned that Quasar is seeking DEC approval to land apply Equate on still more sites in Niagara, Erie and Wyoming Counties, including additional lands in the Town of Wheatfield.

Unfortunately, the biosolids land application approval process administered by DEC as SEQRA lead agency has been segmented from the AD approval process, and has involved little to no meaningful public outreach in the affected communities. See, e.g., April 15, 2013 proposed lead agency designation letter from DEC to Wheatfield Town Supervisor Cliffe and others, wherein DEC had already reached an "initial determination that the project will not have a significant effect on the environment." In fact, more recently, DEC has refused to disclose the identity or location of Quasar's proposed additional biosolids land application sites in the Town of Wheatfield or elsewhere in response to Freedom of Information Law requests. Even the Notice of Complete Application ("NOCA") issued by DEC on July 11, 2014 concerning Application No. 9-9909-00112/00001 by Sustainable Bioelectric LLC, which reportedly seeks public comment on that application, fails to identify the additional land application sites proposed in the Town of

Wheatfield. Likewise, the SEQRA Negative Declaration accompanying the NOCA fails to mention, much less address, various concerns voiced by the Town of Wheatfield's technical consultant concerning noncompliance with requisite soil and groundwater conditions, among other things, during a meeting at the DEC on May 29, 2014.

As explained more fully below, through its own due diligence, the Town Board has come to understand that, under existing DEC regulations, biosolids can only be land-applied under specified conditions at certain times of the year. The Town Board believes that Quasar has the ability to generate biosolids at the Niagara Bioenergy AD and at other Quasar AD facilities (such as the nearby Buffalo BioEnergy AD in the Town of West Seneca) at rates and in quantities that exceed not only Quasar's current storage capacity, but its ability to lawfully land-apply Equate on farms in the Town of Wheatfield. Although the Wheatfield Planning Board's August 15, 2012 Site Review Process Results worksheet reflects that Quasar reportedly had no plans to change the site plan for the Niagara Bioenergy AD site plan at the time, the Town Board recently obtained an e-mail dated July 31, 2012 from Bruce Bailey, Quasar's Vice President of technical affairs, to DEC's Deputy Permit Administrator Lisa Porter, revealing that "[t]he Niagara site is one we are considering for a storage lagoon adjacent to the digester site." *See also*, August 16, 2012 letter from Bruce Bailey to Lisa Porter, citing Quasar's need to discuss "earthen lagoon siting" to accommodate the accumulation of waste during "digester upsets."

In fact, shortly after obtaining site plan approval for the Niagara BioEnergy AD, Quasar quickly sought approval from the Town of Wheatfield (and reportedly other towns such as Cambria and Marilla) to construct facilities designed to store millions of gallons of Equate. Specifically, on or about April 17, 2013, Quasar approached the Town of Wheatfield Planning Board for approval to construct an "open organic liquid fertilizer storage facility" consisting of an approximately 5 acre lagoon. In response to a host of public health and environmental concerns, as well as zoning issues, raised by Town of Wheatfield officials and local residents, Quasar withdrew its lagoon proposal and instead proposed a five (5) million gallon cement biosolids storage tank adjacent to the Niagara Bioenergy AD, which happens to be adjacent to federally protected wetlands. The January 2014 promotional packet supplied by Quasar focuses heavily on the benefits of re-using "food waste," and contains only a passing reference to "wastewater treatment residuals." However, information subsequently gathered by the Town Board from DEC and other sources suggests that biosolids derived from municipal sewage sludge constitute a significant percentage (i.e. reportedly up to 50%) of Quasar's feedstock and is a critical part of Quasar's business plan in Western New York. Documents recently obtained by the Town pursuant to the Freedom of Information Law show that Quasar has received permits from the DEC to import sewage sludge to the Niagara BioEnergy AD from municipal treatment plants throughout New York State. This was not disclosed to the Town Board by Quasar or the DEC. Unfortunately, however, the Town Board believes that Quasar's business plan fails to address numerous public health and environmental threats associated with biosolids in the Town of Wheatfield, as discussed more fully below.

Town of Wheatfield Moratorium

Residents of Niagara County, including the Town of Wheatfield, live in the shadow of the nearby Love Canal Emergency Declaration Area, one of the most appalling environmental tragedies in American history. Throughout the Love Canal ordeal, which continues to this day, the legitimate concerns of Niagara County residents were ignored and/or minimized both by the chemical companies involved and the regulatory agencies entrusted with protecting public health and safety. As discussed more fully below, the Town Board finds that Quasar not only has minimized its intended use of biosolids as a raw material, but also its plans for several multi-million gallon biosolids storage facilities throughout the region. In addition, the Town Board finds that both Quasar and DEC have failed to address a growing body of scientific evidence concerning the potential adverse environmental and public health effects associated with the handling, storage and land application of biosolids. These potential threats are exacerbated by an existing federal and New York State regulatory program which is out of date; inadequate enforcement of existing regulatory standards and best practices for land application of biosolids; and hydrogeological conditions in the vast majority of farmable property in the Town of Wheatfield which render them unsuitable for land application of biosolids.

By way of analogy, the State of New York has effectively placed a moratorium on high volume hydraulic fracturing for natural gas (öfrackingö) based upon serious concerns and many unanswered questions concerning that industry. During this moratorium, the State has declined to issue any permits for fracking operations to allow the DEC and the New York State Department of Health (NYSDOH) to conduct a thorough scientific review of the potential environmental and health impacts and to propose new, heightened regulations to ensure that no such impacts result. By contrast, despite the existence of mounting scientific evidence regarding potentially serious environmental and health impacts associated with biosolids, and inadequacies in existing federal and state regulations governing the treatment, handling and land application of such biosolids, to date neither the Federal nor the New York State government have taken steps to strengthen or re-examine the existing regulations to ensure that they are protective of public health and the environment. In fact, one might reasonably conclude that DEC not only is actively promoting AD operations in New York State generally, but the operations of Quasar in particular. *See, e.g.* <http://www.dec.ny.gov/chemical/94368.html>.

In view of these serious concerns, on or about April 28, 2014, the Town of Wheatfield enacted Local Law No 1-2014 to Amend Chapter 161, placing a six-month moratorium on the processing, recycling, storage, and disposal, including field application, of sludge, sewage sludge, septage and any and all derivative products within the Town of Wheatfield (the "Moratorium"). Significantly, the Moratorium did not extend to projects already approved or for which permits have already been issued. The purpose of the Moratorium was to enable the Town Board to consider amendments to Chapter 161 of the Town Code designed to mitigate the threat to public health, safety and the environment associated with the processing, recycling, storage, and disposal, including field application, of biosolids in the Town of Wheatfield.

Following adoption of the Moratorium, the Town Board retained the services of Matrix Environmental Technologies Inc. ("Matrix"), a firm with significant experience in the area of agricultural waste management, wastewater treatment and groundwater remediation, to provide technical support regarding the environmental and public health implications of biosolids

handling and land application. In addition, the Town retained the services of Jaeckle Fleischmann & Mugal, LLP ("Jaeckle") to assist with the review of existing federal and state regulations governing biosolids and the development of local regulations necessary to reduce potential threats to public health and the environment in the Town of Wheatfield.

The Present Action: Local Law Regulating Biosolids in the Town of Wheatfield

In consultation with Matrix and Jaeckle, the Town Board has examined various sources of information obtained from members of the general public, Matrix, Quasar, regulatory agencies and numerous other sources. Following careful consideration of this information, the Town Board issued an initial draft Local Law which was the subject of a well-attended public hearing conducted on May 12, 2014. At that public hearing, numerous residents voiced their concerns about potential threats to public health and safety and the environment associated with the generation and use of Equate in the Town of Wheatfield as well as the proposed expansion of storage capacity at the Niagara BioEnergy AD.

Following the public hearing, the Town Board continued to receive and consider public input and to gather additional information and scientific evidence regarding the potential health threats posed by the land application of biosolids and related activities governed by the Proposed Local Law. Those efforts included, among other things, the issuance of Freedom of Information Law Requests to the Town of Amherst and to the DEC for various relevant public records. As noted above, the DEC has refused to identify the proposed land application sites that are the subject of Quasar's pending Part 360 land application permit, which has not served to allay the Town Board's health and safety concerns. The DEC has also declined to answer technical questions posed by Matrix during a meeting at the DEC on May 29, 2014 regarding the allowable soil texture and depth to groundwater measurements for the permitted land application sites, among other things.

Based upon the additional research outlined above, and following careful consideration of the beneficial environmental and public health impacts of a local law governing biosolids through the preparation and consideration of a Full Environmental Assessment Form pursuant to SEQRA, the Town Board finds that it is necessary to exercise its police powers under Municipal Home Rule Law and § 130(1)(6)(E), Town Law § 136 and E.C.L. § 27-0711 to adopt a proposed local law governing Biosolids in order to protect the public health, safety and welfare of the residents of the Town of Wheatfield (the "Proposed Local Law"). A copy of the Proposed Local Law is attached hereto as **Attachment 1** and is incorporated herein in its entirety. The term "Biosolids" as used in the Proposed Local Law is defined as "[a]ny solid, semi-solid or sludge-like organic material generated by the treatment of sewage or wastewater or otherwise derived from sewage or wastewater or their byproducts. Sewage sludge shall be considered synonymous with Biosolids." Subject to certain specified exemptions noted below, the purposes of the Proposed Local Law are to:

- 1) Prohibit the construction and operation of new Anaerobic Digestion Facilities, Land Application Facilities and Storage Facilities within the Town of Wheatfield in order to promote a clean, wholesome and attractive environment for the community.

- 2) Reduce the risk of pollution and other harmful effects, to the maximum extent possible, from existing Anaerobic Digestion Facilities, Land Application Facilities and Storage Facilities by restricting the scope and size of such activities.
- 3) Ensure that accurate, current information about solid waste disposal operations within the Town is available to public officials and residents; and
- 4) Protect the residents of the Town from the harmful effects of Biosolids, including:
 - a. Hazardous and nuisance conditions, including contamination of groundwater, surface water and air, odors, excessive traffic, dust and noise.
 - b. Diminution of property values associated with adjacent or proximate biosolids operations that may interfere with the orderly development of properties.

In furtherance of these important objectives, §161-21 of the Proposed Local Law prohibits the collection, acceptance, storage, processing, treating, handling, generation, land application or disposal of Biosolids, Digestate (as defined in the Proposed Local Law) or other liquid, solid or semi-solid waste, any of which contains human waste or any pathogenic organisms, or which are derived from materials containing human waste, pathogenic organisms and/or municipal wastewater, at any location within the Town of Wheatfield.

Under § 161-22, the Proposed Local Law, the above prohibitions do NOT apply to:

- A. Anaerobic Digestion Facilities that do not accept, treat, or process Biosolids or sewage sludge from wastewater treatment facilities.
- B. The generation of Biosolids at a Publicly Owned Treatment Works.
- C. Private septic systems located within the Town of Wheatfield; or
- D. The sale or storage of lawn and garden fertilizer packaged for retail sale, or the application of lawn and garden fertilizers packaged for retail sale, on an area of land less than 2.5 acres in size.

Additionally, the proposed Local Law sets forth certain limitations on specified lawfully permitted "Existing Facilities" which handle Biosolids. In particular, Proposed Local Law § 161-23 provides that, subject to certain exceptions, such Existing Facilities may be continued but may not be expanded or modified with respect to operational or storage capacity, bulk, height, area or other dimensional or spatial aspect and/ or permitted activity. However, Proposed Local Law § 161-23 allows existing Anaerobic Digestion Facilities to apply to the Town Board for a special use permit to authorize conversion of its treatment process to the production of Biosolids that meet "Class A" standards within the meaning of 40 C.F.R. § 503.32, or other modifications which the applicant demonstrates will eliminate or significantly reduce potential threats to public health and the environment.

Finally, in the interest of ensuring that accurate, current information about current and proposed biosolids operations within the Town is available to public officials and residents, Proposed Local Law § 161-23 provides that the owner or operator of an Existing Facility must provide a copy of any and all written communications, applications or reports to or from the DEC and any other governmental or regulatory agency, to the Town of Wheatfield Building Inspector within 7 business days of the issuance or receipt of such written communications, applications or reports. This requirement is consistent with prevailing New York State Department of Agricultural and Markets Guidelines for Review of Local Laws Affecting Nutrient Management Practices.

CLASSIFICATION OF ACTION: Unlisted

Although the Town Board has determined that the Local Law is unlisted, the Town Board has elected to require the preparation of a full environmental assessment form (EAF) for the proposed Local Law in the interest of a comprehensive SEQRA review.

In addition, although there are no other involved agencies with jurisdiction to enact or otherwise approve the Local Law, the Town Board is providing copies of this determination to various interested agencies and entities listed at the end of this document.

REASONS SUPPORTING THIS DETERMINATION:

The Town Board and its technical and legal advisors have reviewed and considered various materials and documentation concerning the proposed Local Law including, but not limited to, the following:

• DEC Public records posted online at Department of Environmental Conservation Quasar Anaerobic Digestion Facilities website at <http://www.dec.ny.gov/chemical/94368.html>; and DEC File Transfers entitled: "Travco Storage Tank"; "Travco Storage Tank Comment Letters"; "Issued Land Application Permit"; "Land Application Pending Permit" [These files REDACTED by DEC to withhold identity of proposed land applications sites]; and "Digester Info Not on Website."

- Documents obtained from the Town of Amherst Wastewater Treatment Facility regarding Quasar Energy Group, LLC & Sustainable BioElectric LLC

• Completed Full Environmental Assessment Form regarding Proposed Local Law

• Site plan application file materials and minutes of Town of Wheatfield Planning Board meetings dated April 2, 2014; February 19, 2014, January 22, 2014; May 1, 2013; April 17, 2013; August 15, 2012; July 18, 2012; June 20, 2012; June 6, 2012; May 2, 2012;

• Minutes of Town of Wheatfield Town Board meetings dated May 12, 2014; April 28, 2014; April 14, 2014; March 24, 2014; March 10, 2014; February 24, 2014; January 27, 2014;

December 16, 2013; September 23, 2013; September 9, 2013; August 12, 2013; July 23, 2012; July 9, 2012

É Presentation Entitled "Is the Storage and Land Application of Biosolids Appropriate in the Town of Wheatfield, New York?", Sean R. Carter, Principal Engineer, Matrix Environmental Technologies Inc., June 2014

É Map entitled "Potentially Allowable Areas for Land application of Biosolids (Matrix, May 20, 2014)

É DEC, NY Geological Survey, EPA and Town of Wheatfield maps and documents pertaining to wetlands, surface water, soils, bedrock and zoning

É 1972 Niagara County Soil Survey
http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/new_york/niagaraNY1972/niagaraNY1972.pdf

É August 26, 1977 letter from Ernest R. Gedeon, Associate Public Health Sanitarian, Niagara County Department of Health to Theodore A. Krehbiel, P.E., regarding impervious clay soils and high water tables in Wheatfield, NY

É Undated report by Don Owens, KGRH Soil Interpretation Specialist, regarding Soil Limitations for Septic Tank Effluent Disposal (including March 1977 map entitled "areas with Septic Tank Problems")

É Roadside Geology of New York, Bradford B. Van Diver, Mountain Press Publishing Co., Sept 1997.

É April 8, 2014 letter from Sen. George D. Maziarz and Assemblyman John D. Ceretto to DEC Commissioner Joseph Martens

É May 9, 2014 letter from Randy W. Worobo, Cornell University, New York State Agricultural Experiment Station, to Brendan Smith, Smith's Orchard.

É May 12, 2014 letter from Jean Bonhot, Director, Cornell Waste Management Institute, to Brendan Smith, Smith's Orchard, with accompanying attachments.

É Presentation on Biodigester By-Product to Erie County Environmental Management Council by Sharon Bachman, Community Educator for Agriculture Cornell Cooperative Extension of Erie NY, Invasive Species Outreach Program, May 20, 2014

É June 2011 Biosolids Management in New York State, New York State Department of Environmental Conservation, Division of Materials Management, Albany, NY

É May 12, 2011 Information Update

É 2013 Cornell Guide for Integrated Field Crop Management

ÉDEC biosolids regulations at 6 N.Y.C.R.R. Part 360-4

É Organics Recycling in New York State, Sally Rowland, Ph.D., P.E., NYSASWM Fall Conference September 30, 2013, Lake Placid, NY

É NYSASWM Training Seminar - Organic Waste Management, A Regulatory Overview, Robert Phaneuf, P.E., Sally Rowland, Ph.D., P.E., March 5, 2013 Liverpool, NY

É Organics Recycling Capacity in NYS and the Future ó N.Y.S. Federation Conference, Sally Rowland, Ph.D., P.E., Gary Feinland, May 3, 2010

É Federal Standards for the Use or Disposal of Sewage Sludge (40 C.F.R. Part 503)

É USEPA Targeted National Sewage Sludge Survey Sampling and Analysis Technical Report, EPA-822-R-08-016 (January 2009) <http://water.epa.gov/scitech/wastetech/biosolids/tnsss-fs.cfm>

É 1997 EPA Process Design Manual for Land Application of Biosolids

É 1983 EPA Process Design Manual for Land Application of Municipal Sludge

É 1992 EPA Technical Support Document for Land Application of Sewage Sludge, Volume I and II <http://water.epa.gov/scitech/wastetech/biosolids/>

É USGS Toxic Substances Hydrology Program <http://toxics.usgs.gov/>

É 1979 Land Application of Wastes, Volume I and II, Loehr, Jewell, Novak, Clarkson & Friedman, Cornell University

É USEPA <http://water.epa.gov/scitech/cec/> (USEPA website concerning Contaminants of Emerging Concern)

É <http://water.epa.gov/scitech/swguidance/ppcp/results.cfm> (USEPA website entitled Treating Contaminants of Emerging Concern - A Literature Review Database)

É USGS <http://toxics.usgs.gov/regional/emc/> (USGS website concerning Emerging Contaminants In the Environment)

É http://toxics.usgs.gov/highlights/biosolids_runoff.html (USGS study "Hormones in Land-Applied Biosolids Could Affect Aquatic Organisms")

É <http://toxics.usgs.gov/highlights/earthworms.html> (USGS study "Biosolids, Animal Manure, and Earthworms: Is There a Connection?")

É <http://toxics.usgs.gov/highlights/biosolids.html> (USGS study "Household Chemicals and Drugs Found in Biosolids from Wastewater Treatment Plants")

É Dissipation of Contaminants of Emerging Concern in Biosolids Applied to Nonirrigated Farmland in Eastern Colorado, Tracy J.B. Yager, Edward T. Furlong, Dana W. Kolpin, Chad A. Kinney, Steven D. Zaugg, and Mark R. Burkhardt, Journal of the American Water Resources Association, Vol. 50, No. 2 (April 2014)

É Investigation of Alleged Health Incidents Associated with Land Application of Sewage Sludges, Ellen Z. Harrison and Summer Rayne Oakes, New Solutions, Vol. 12(4) 387-408, 2002.

É Case for Caution Revisited: Health and Environmental Impacts of Application of Sewage Sludges to Agricultural Land, Ellen Z. Harrison and Murray McBride, Cornell Waste Management Institute, September 2008.

É "Emerging Treatment Technologies for Emerging Pharmaceutical Contaminants," Darcy Sach, O'Brien & Geere, Air & Waste Management Conference, "Environmental Ethics ó Avoiding the Dark Side of Green," Rochester Institute of Technology, February 2, 2014.

É June 2, 2014 e-mail from Nathan Carr, Biomass Account Executive, Quasar Energy Group, to Town of Wheatfield Supervisor Robert Cliffe

É July 25, 2012 Sustainable Bioelectric, LLC Application for Assistance to NCIDA

É Quasar "Similar Plants Collateral" information provided June 13, 2014

É July 3, 2012 SEQRA Lead Agency Designation

É Quasar Energy Group MSDS for Equate

É "Introduction to Quasar" (9 pages)

- July 22, 2014 letter from Paul F. Keneally to Town Board of the Town of Wheatfield
- June 10, 2014 letter from George S. Van Nest to Town Board of the Town of Wheatfield

É Quasar Energy Group March 24, 2014 Response to Resident Concerns ó Re: Quasar Public Information Session, February 24, 2014

É <http://chronicle.northcoastnow.com/2013/02/23/quasar-cited-for-violations-at-other-sites/>

The foregoing documentation and information is incorporated herein in its entirety.

Based upon the Town Board's review and consideration of the Full EAF, advice and counsel from Matrix and other documentation referred to above, and the environmental criteria contained

in the SEQRA regulations, the Town Board has identified the below areas of potential environmental concern that are associated with and, in fact, are expected to be substantially mitigated by, adoption of the Proposed Local Law:

I. Local Conditions in the Town of Wheatfield are Unsuitable for Safe Land Application of Biosolids

Under DEC regulations, land application facilities receiving Class B biosolids (such as Equate) must comply with various design criteria and operational requirements set forth at 6 N.Y.C.R.R. Section 360-4.6. For example, all land application facilities must adhere to the following minimum horizontal separation distances (measured in feet):

Property line	50
Residence, place of business or public contact area	500
Potable water well	200
Surface water and State regulated wetland (waste not directly injected)	200
Surface water and State regulated wetland (waste directly injected)	100
Drainage swale	25

In addition, DEC regulations prohibit land application in various areas including, but not limited to the following:

É areas where ground water is within 24 inches of the ground surface at the time of application (360-4.6(b)(2));

É areas where bedrock lies less than 24 inches below the ground surface (360-4.6(b)(3));

É areas that do NOT have soil types that fall into one or more of the following soil texture classes: sandy loam, sandy clay loam, loam, silt loam, silt, sandy clay and clay loam (360-4.6(b)(6)); and

É on water saturated ground or during heavy rainfall (360-4.6(b)(12));

Matrix has advised that the vast majority of land in the Town of Wheatfield is unsuitable and unsafe for land application of Class B biosolids based upon its review of the hydrogeological and soil conditions in the Town of Wheatfield, relevant studies and literature, recent soil sampling and other field observations conducted by Matrix, and its review of applicable USEPA, DEC, US Army Corps and local zoning criteria. See, e.g. Presentation Entitled "Is the Storage and Land Application of Biosolids Appropriate in the Town of Wheatfield, New York?", Sean R. Carter, Principal Engineer, Matrix Environmental Technologies Inc., June 2014 (**Attachment 2**); and Map entitled "Potentially Allowable Areas for Land application of Biosolids (Matrix, May 20, 2014)(**Attachment 3**). For example, Matrix has advised that the predominant hydrogeological conditions in the Town of Wheatfield include:

É Shallow perched groundwater that is at or near the ground surface (whereas prevailing DEC Part 360 standards mandate that groundwater be deeper than 2 feet)

É Low permeability soils that are predominantly silty clay loam, silty clay and clay (as noted above, 360-4.6(b)(6)) prohibits land application in these and other low permeability soils). *See also* 1972 Niagara County Soil Survey. These conditions resulted in the failure of septic tank leach fields throughout Wheatfield and adjacent towns as documented by the Niagara County Health Department. Sanitary sewers have been installed in the majority of the Town of Wheatfield, including the agricultural districts, due to the health impacts of sewage overflow into the swales and drainage ditches.

É Poorly drained agricultural fields where saturated conditions prevail and ponding is common (as noted above, land application of biosolids under these conditions is prohibited under 360-4.6(b)(12)). The Town's current Comprehensive Plan, updated in 2012, repeatedly recognizes that the Town's predominant soil type is characterized by poor drainage and that flooding, ponding and soil saturation are common problems in the Town.

É Federal and/or state-regulated wetlands and floodzones are located throughout the Town of Wheatfield and, in fact, are within or contiguous to the field covered by the Milleville Land Application Permit. *See, e.g.* EAF submitted by Quasar to Lisa Porter on November 21, 2012, page 4 of 21.

According to Matrix, given these unfavorable conditions throughout the Town of Wheatfield, the storage and/or land application of biosolids, sewage sludge or digestate poses an unacceptable risk to human health and the environment, particularly given the outdated nature of existing biosolids regulations, as discussed below. Further, Matrix has advised that localized conditions at virtually all farmable land in the Town of Wheatfield create the potential for adverse impacts to groundwater and surface water from nutrients, pathogens, heavy metals and a vast array of unregulated (i.e. "emerging") contaminants, as well as the potential for exposure to humans from contaminant migration from treatment, storage and land application sites. In addition, a pathway of contaminant migration from overburden soils to the bedrock aquifer, and further migration through water bearing bedrock fractures to potable wells, has been documented in Wheatfield (DEC Spill Site # 99-75017). The Tuscarora Nation, a neighboring community to Wheatfield, uses the bedrock aquifer as a primary source of potable water.

Based upon the foregoing, the Town Board finds that the Proposed Local Law will not result in any significant adverse impacts on the environment and will, in fact, serve to mitigate threats to surface water, groundwater, air quality and related threats to public health, safety and the environment associated with the storage, handling, land application and other activities involving biosolids in the Town of Wheatfield. Further, the Town Board finds that the land application of sewage sludge historically has not been a typical farming practice in the Town of Wheatfield, nor in Western New York for that matter. *See, e.g.*, June 2011 Biosolids Management in New York State, New York State Department of Environmental Conservation, Division of Materials Management, Albany, NY, Table 5, which lists only two land application facilities in DEC Region 9 as of September 2010, both of which are located in Cattaraugus County. Accordingly,

the Town Board finds that the Proposed Local Law prohibiting this practice will not materially impact existing farming operations and, in fact, will benefit them by providing significant environmental and health protection to consumers of agricultural products grown in the Town, and reducing occupational exposure to biosolids among farm workers themselves. See 2013 Cornell Guide for Integrated Field Crop Management (http://cwmi.css.cornell.edu/Sludge/cornellguide_sludge2013.pdf).

II. Existing Federal and State Regulation of Biosolids Is Inadequate to Protect the Public Health, Safety and Environment in the Town of Wheatfield

The processes conducted at the Niagara Bioenergy AD purportedly treat the feedstock to reduce pathogens (i.e. fecal coliform), solvents, oils and a limited list of heavy metals to below certain levels prescribed in existing DEC regulations at 6 N.Y.C.R.R. part 360. Notably, however, farming properties that are permitted to accept land application of biosolids are subject to a very limited list of pollutant limits specified in 6 N.Y.C.R.R. §§360-4.6(a) and 360-5.10. Moreover, as discussed more fully below, the AD process is not designed to treat, and does not eliminate, a broad array of other chemical and pharmaceutical pollutants which have been reported to be present in biosolids and on lands where such biosolids are disposed.

Matrix has advised that, despite the prevalence of conditions in the Town of Wheatfield that are unsuitable and unsafe for land application of biosolids, the DEC does not appear to have:

É undertaken a detailed review of the soil or hydrogeology in the Town of Wheatfield;

É required any site-specific baseline soil or groundwater data for proposed Part 360 land application sites in the Town of Wheatfield, other than soil samples for analysis of pH and 10 metals;

É required any sample collection or groundwater monitoring plans for existing or proposed Part 360 land application sites in the Town of Wheatfield; or

É engaged in meaningful public outreach concerning Part 360 applications involving biosolids storage, handling or land application in the Town of Wheatfield, or with respect to potential adverse health effects associated with unregulated pollutants known to be present in biosolids.

Likewise, the Town Board is concerned that DEC reportedly has declined to exercise its discretion under existing Part 360 regulations to require expanded testing of the feedstock supplied to the Niagara BioEnergy AD (both with respect to parameters of concern and required frequency of sample collection). In this regard, Matrix has advised that documents obtained from the Town of Amherst Wastewater Treatment Facility show that sludge cake provided to the Niagara Bioenergy AD is only sampled and tested once per year. Further, the 2013 annual sludge cake analysis for Amherst reveals the heavy metal barium near the concentration that is a concern for land application, the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D), as well as the pesticides lindane, heptachlor, heptachlor epoxide, endrin, methoxychlor, chlordane and

toxaphene. Matrix has advised that 2,4-D is a widely used weed killer and one of the ingredients of Agent Orange. (The Town of Amherst recently discontinued shipments of sludge cake to the AD due in part to health & safety concerns). For the reasons previously noted, the Town Board believes that such minimal testing protocol is insufficient and contrary to recommended best practices for adequate and careful characterization of biosolids destined for land application. In fact, Matrix believes that TCLP methodology, which is used to characterize a waste based on a contaminant's potential to leach in a landfill, is not appropriate for determining whether land application of these materials poses a threat to soil or groundwater, and that analyses for the total dry weight concentration of contaminants should be used as required for metals.

Although existing regulations require testing only for a very limited list of regulated metals and only at limited intervals, DEC is authorized to go beyond the minimum regulatory requirements and require the collection of data sufficient and necessary to protect public health and safety. *See e.g.* USEPA Manual for Land Application of Municipal Sludge and 2013 Cornell Guide for Integrated Field Crop Management, Section 2.13. For example, such required testing currently does not extend to potentially dangerous chemical and pharmaceutical pollutants known to be present in biosolids, as discussed below.

In a letter dated June 10, 2014 to the Town Board, Quasar's legal counsel points to "long-established standards for pathogen treatment, pollutant limits and site controls to ensure public health & safety, as well as environmentally sound practices." However, Quasar fails to acknowledge, much less address, the fact that current DEC regulations governing biosolids at 6 N.Y.C.R.R Part 360-4 largely are based on federal rules first promulgated in 1993 at 40 C.F.R. Part 503 ("EPA 503 Rule"), which in turn regulate the loading of only a small list of heavy metals and nutrients on agricultural soils. Unfortunately, as the National Research Council long ago acknowledged, the risk assessment on which current rules are based is significantly outdated. *See, e.g. NRC Targets Pathogens in Sludge for Research*, Rebecca Renner, 2002. *Environmental Science and Technology: Science News* - July 24. ; Lewis DL, Gattie DK, Novak M, Sanchez S, Pumphrey C. 2002, *Interactions of pathogens and irritant chemicals in land-applied sewage sludges (biosolids)*. *BMC Public Health*, 2:11. Over the past two decades since the EPA 503 Rules were promulgated, scientists from Cornell University, the National Research Council, the United States Geological Survey and other reputable scientific institutions around the world have reported findings regarding a host of alarming adverse potential environmental and health effects associated with biosolids. For example, scientific studies show that such potentially adverse consequences include, among other things, the following:

É Endocrine Disruption óexposure to chemicals found in biosolids may cause disruption to human and animal hormones and reproductive systems. *See, e.g. Increased seminal plasma lead levels adversely affect the fertility potential of sperm in IVF.*, Susan Benoff, Grace M. Centola, Colleen Milian, Barbara Napolitano, Joel L. Marmar and Ian R. Hurley, 2003. *Human Reproduction*, V. 18, No. 2, 374-383; and *Cadmium mimics the in vivo effects of estrogen in the uterus and mammary gland*. Michael D. Johnson, Nicholas Kenney, Adriana Stoica, Leena Hilakivi-Clarke, Baljit Singh, Gloria Chepko, Robert Clarke, Peter F Sholler, Apolonio A Lirio, Colby Foss, Ronald Reiter, Bruce Trock, Soonmyoung Paik, and Mary Beth Martin, 2003. *Nature Medicine*, 9:1081-1084. Letter Published online: 13 July 2003.

É Impacts on livestock - livestock that graze on sludge-amended pastures ingest biosolids that adhere to the forage plants and also ingest soil directly. See, e.g. *Accumulation of potentially toxic elements by sheep given diets containing soil and sewage sludge. 1. Effect of type of soil and level of sewage sludge in the diet*. Hill, J. B. Stark, J. Wilkinson, M. Curran, I. Lean, J. Hall, C. Livesey, 1998. *Animal Science*, 67:73-86; *The long-term effect of sludge application on Cu, Zn, and Mo behavior in soils and accumulation in soybean seeds*. B.J. Kim, M.B. McBride, B.K. Richards, T.S. Steenhuis, 2007. *Plant and Soil*, 299:227-236; *Molybdenum and copper uptake by forage grasses and legumes grown on a metal-contaminated sludge site*. M.B. McBride, 2005. *Communications in Soil Science and Plant Analysis*, 36: 2489–2501; *Molybdenum extractability in soils and uptake by alfalfa 20 years after sewage sludge application*. M.B. McBride and B. Hale, 2004. *Soil Science*, 169:505-514; *Molybdenum, sulfur, and other trace elements in farm soils and after sewage sludge application*. M.B. McBride, 2004. *Communications in Soil Science and Plant Analysis*, 35:517-535; *Effects of pasture applied biosolids on performance and mineral status of grazing beef heifers*. M.E. Tiffany, L.R. McDowell, G.A. O'Connor, E.G. Martin, N.S. Wilkinson, E.C. Cardoso, S.S. Percival and P.A. Rabiansky, 2000. *J. Animal Science*, 78:1331-1337; *Effects of residual and reapplied biosolids on performance and mineral status of grazing beef steers*. M.E. Tiffany, L.R. McDowell, G.A. O'Connor, F.G. Martin, N.S. Wilkinson, S.S. Percival and P.A. Rabiansky, 2002. *J. Animal Science*, 80:260-269; *Exposure to pastures fertilized with sewage sludge disrupts bone tissue homeostasis in sheep*. P. Monica Lind, M. Gustafsson, S.A.B. Hermsen, S. Larsson, C.E. Kyle, J. Orberg and S.M. Rhind, 2009. *Science of the Total Environment*, 407:2200-2208; and *Cellular and hormonal disruption of fetal testis development in sheep reared on pasture treated with sewage sludge*. Catriona Paul, Stewart M. Rhind, Carol E. Kyle, Hayley Scott, Chris McKinnell, and Richard M. Sharpe, 2005. *Environmental Health Perspectives*, 113(11):1580-1587.

É Movement to groundwater through facilitated transport ó Recent studies show that contaminants (both chemicals and pathogenic organisms) can move through soils into groundwater by "piggy-backing" on other chemicals that move in water (i.e., "facilitated transport"). See, e.g. *Colloidal transport: The facilitated movement of contaminants into groundwater* (B.K. Richards, J.F. McCarthy, T.S. Steenhuis, A.G. Hay, Y. Zevi, A. Dathe. 2007. *Journal of Soil & Water Conservation* 62(3)55A- 56A; *The unintentional secret*. (B.K. Richards, N. Peranganing, T.S. Steenhuis and L.D. Geohring. 2003. *Journal of Soil & Water Conservation*, September-October 2003 59(5):104A-105A); *Biosolid colloid-mediated transport of copper, zinc, and lead in waste-amended soils*. A.D. Karathanasis, D.M.C. Johnson, and C.J. Matocha, 2005. *Journal of Environmental Quality*, 34 (4):1153 -1164; *Effect of Mineral Colloids in Virus Transport through Saturated Sand Columns*. Yan Jin, Ellen Pratt, and Marylynn V. Yates, 2000. *Journal of Environmental Quality*, 29(2):532-539; *Facilitated Transport of Napropamide by Dissolved Organic Matter in Sewage Sludge Amended Soil*. L. Nelson, W. Farmer, C.J. Williams, and M. Ben-Hur, 1998. *Journal of Environmental Quality*, 27:1194-1200; and *Enhanced Transport of Pesticides in a Field Trial with Treated Sewage Sludge*. E. Grager, I. Dror, F. Bercovich, and M. Rosner, 2001, *Chemosphere*, 44: 805-811.

É Aerosols and human health effects ó statistically elevated health-related symptoms among a population exposed to sewage sludge during land spreading have been reported. See, e.g. *Health Survey of Residents Living near Farm Fields Permitted to Receive Biosolids*. Sadik

Khuder, Sheryl A. Milz, Michael Bisesi, Robert Vincent, Wendy McNulty, and Kevin Czajkowski, 2007. Archives of Environmental and Occupational Health, 62(1):5-11; *Interactions of pathogens and irritant chemicals in land-applied sewage sludges (biosolids)*. David L Lewis, David K Gattie, Marc E Novak, Susan Sanchez, and Charles Pumphrey, 2002. BMC Public Health, 2:11; Particulate matter composition and emission rates from the disk incorporation of class B biosolids into soil. Tania Paez-Rubio, Xin Huab, James Anderson, Jordan Peccia, 2006. Atmospheric Environment, 40:7034-7045; *Source Tracking Aerosols Released from Land-Applied Class B Biosolids during High-Wind Events*. Carolina Baertsch, Tania Paez-Rubio, Emily Viau, and Jordan Peccia, 2007. Applied and Environmental Microbiology, 73:4522-4531; *Off-Site Exposure to Respirable Aerosols Produced during the Disk-Incorporation of Class B Biosolids*. Swee Yang Low, Tania Paez-Rubio, Carolina Baertsch, Matthew Kucharski, and Jordan Peccia, 2007. Journal of Environmental Engineering, 133:987-994; *Emission Rates and Characterization of Aerosols Produced During the Spreading of Dewatered Class B Biosolids*. Tania Paez-Rubio, Abel Ramarui, Jeffrey Sommer, Hua Xin, Hua, James Anderson, and Jordan Peccia, 2008. Environmental Science and Technology, 41(10):3537-3544; May 12, 2014 letter from Jean Bonhotal, Director, Cornell Waste Management Institute to Brendan Smith, Smith's Orchard; and May 9, 2014 letter from Randy W. Worobo, Cornell University, New York State Agricultural Experiment Station, to Brendan Smith, Smith's Orchard.

É Non-regulated contaminants and Persistent Organic Pollutants ("POPs") ó as noted above, state and federal regulations governing biosolids regulate only a tiny fraction of chemicals known to be found in biosolids. Many other chemicals now in widespread usage that were not even considered when existing biosolids regulations were promulgated including, among other things, brominated flame retardants, antibacterials, wastewater treatment flocculent polymers, organotins, surfactants, fragrance chemicals and pharmaceuticals. It has been reported that concentrations of many synthetic organic chemicals exceed soil screening levels set by EPA. See, e.g. *Determination of Anionic and Nonionic Surfactants, Their Degradation Products, and Endocrine-Disrupting Compounds in Sewage Sludge by Liquid Chromatography/Mass Spectrometry*. M. Petrovic and D. Barcelo, 2000. Analytical Chemistry, 72: 45604567; *Organic Chemicals in Sewage Sludges*. Ellen Z. Harrison, Summer Rayne Oakes, Matthew Hysell, and Anthony Hay, 2006. Science of the Total Environment 367(2-3):481-497; *Survey of Organic Wastewater Contaminants in Biosolids Destined for Land Application*. C.A. Kinney, E.T. Furlong, S.D. Zaugg, M.R. Burkhardt, S.L. Werner, J.D. Cahill, and G.R. Jorgensen, 2006. Environmental Science and Toxicology, 40(23):7207-7215; *Organic Contaminants in Canadian Municipal Sewage Sludge. Part II. Persistent Chlorinated Compounds and Polycyclic Aromatic Hydrocarbons*. J. Kohli, H.B. Lee and T.E. Peart, 2006. Water Quality Research Journal of Canada, 41: 47-55; *Persistence of organic contaminants in sewage sludge-amended soil: A field experiment*. S.C. Wilson, R. E. Alcock, A.P. Sewart, K.C. Jones, 1997. J. Environ. Qual., 26: 1467-1477; *Partitioning, persistence, and accumulation in digested sludge of the topical antiseptic triclocarban during wastewater treatment*. J. Heidler, A. Sapkota, R.U. Halden, 2006. Environmental Science & Technology, 40, 3634-3639; *Bioaccumulation of pharmaceuticals and other anthropogenic waste indicators in earthworms from agricultural soil amended with biosolid or swine manure*. C.A. Kinney, E.D. Furlong, D.W. Kolpin, M.R. Burkhardt, S.D. Zaugg, S.L. Werner, J.P. Bossio and M.J. Benotti, 2008. Environmental Science & Technology, 42:1863-1870; *Fate of higher brominated PBDEs in lactating cows*. A. Kierkegaard, L. Asplund, C.A. deWit, M.S. McLachlan, G.O. Thomas, A.J. Sweetman, K.C. Jones, 2007. Environ. Sci.

Technol., 41:417-423; *EPA finds record PFOS, PFOA levels in Alabama grazing fields*. R. Renner, 2009. *Environmental Science & Technology*, 43(5):1245-1246; *Removal of Organotins During Sewage Treatment: A Case Study*. N. Voulvoulis, M.D. Scrimshaw, and J.N. Lester, 2004. *Environmental Technology*, 25(6):733-740; and *The potential impact of veterinary and human therapeutic agents in manure and biosolids on plants grown on arable land: a review*. Patrick K. Jjemba, 2002. *Agriculture, Ecosystems and Environment*, 93(1-3):267-278

Bacterial regrowth/viable non-culturable (VNC) - Recent research reportedly has demonstrated that sewage biosolids believed to meet Class A or Class B standards were subject to regrowth and reactivation of bacteria. *See, e.g. Increases in Fecal Coliform Bacteria Resulting From Centrifugal Dewatering of Digested Biosolids*. Yanan Qi, Steven. K. Dente', and Diane S. Herson, 2007. *Water Research*, 41(3):571-580; and *Reactivation and Growth of Non-Culturable Indicator Bacteria in Anaerobically Digested Biosolids After Centrifuge Dewatering*. Matthew J. Higgins, Yen-Chih Chen, Sudhir N. Murthy, Donald Hendrickson, Joseph Farrel, Perry Schafer, 2007. *Water Research*, 41(3):665-673.

Antibiotic resistance in sludge bacteria - Recent studies reportedly have confirmed that the use of antimicrobials had created antibiotic-resistance genes in bacteria that are detected in sewage sludge effluent from sewage treatment plants and downstream of sludge-treated farmland. *See, e.g. Increased Frequency of Drug-resistant Bacteria and Fecal Conformers in an Indiana Creek Adjacent to Farmland Amended with Treated Sludge*. Shivi Selvaratnam and David J. Kunberger, 2004. *Canadian Journal of Microbiology*, 50(8):653-656; *Potential ecological and human health impacts of antibiotics and antibiotic-resistant bacteria from wastewater treatment plants*. S. Kim and D.S. Aga, 2007. *Journal of Toxicology and Environmental Health-Part B-Critical Reviews*, 10:559-573; *Effect of wastewater treatment on antibiotic resistance in Escherichia coli and Enterococcus sp.* S. Garcia, B. Wade, C. Bauer, C. Craig, K. Nakaoka, and W. Lorowitz, 2007. *Water Environment Research*, 79:2387-2395; and *Antimicrobial resistance in Enterococcus spp. isolated in inflow, effluent and sludge from municipal sewage water treatment plants*. P.M. Da Costa, P. Vaz-Pires, and F. Bernardo, 2006. *Water Research*, 40:1735-1740.

Prions - According to the Centers for Disease Control and Prevention, Prion diseases or transmissible spongiform encephalopathies (TSEs) are a family of rare progressive neurodegenerative disorders that affect both humans and animals. The potential for prions that might be present in wastewater to accumulate in sludges and to persist through treatment reportedly is a concern. *See, e.g. Persistence of Pathogenic Prion Protein during Simulated Wastewater Treatment Processes*. G.T. Hinckley, C.J. Johnson, K.H. Jacobson, C. Bartholomay, K.D. McMahon, D. McKenzie, J.M. Aiken, and J.A. Pederson, 2008. *Environmental Science and Technology*, 42(14):5254-5259;

Ecological impacts - Soil microorganisms play a critical role in the functions of soil as a source of plant nutrition and in the cycling of nutrients. Recent research shows that sludge application changes the soil microbial community and decreases its diversity. A number of human-use compounds (such as triclosan found in many personal care products such as antibacterial soaps) bioconcentrate in earthworms where soil has been amended with sewage sludges. *See, e.g. Computational Improvements Reveal Great Bacterial Diversity and HiEh Metal Toxicity in Soil*. Jason Gans, Murray Wolinsky, and John Dunbar, 2005. *Science*, 309:1387-1390; *Parallel Shifts*

in Plant and Soil Microbial Communities in Response to Biosolids in a Semi-Arid Grassland. Tarah S. Sullivan, Mary E. Stromberger, and Mark W. Paschke, 2006. *Soil Biology and Biochemistry*, 38 449-459; and *Bioaccumulation of Pharmaceuticals and Other Anthropogenic Waste Indicators in Earthworms from Agricultural Soil Amended With Biosolid or Swine Manure*. C.A. Kinney, E.T. Furlong, D.W. Kolpin, M.R. Burkhardt, S.D. Zaugg, S.L. Werner, J.P. Bassi^o and M.J. Benotti, 2008. *Environmental Science and Technology*, 42:1863-1870.

The United State Environmental Protection Agency (USEPA) itself recently documented the prevalence of a wide array of pharmaceuticals, steroids and hormones in biosolids. Jan 2009 / EPA-822-R-08-016: "Targeted National Sewage Sludge Survey ("TNSSS") Sampling and Analysis Technical Report. In 2006 and 2007, the USEPA collected samples of sewage sludge from 74 randomly-chosen wastewater treatment facilities in 35 states. The sampled facilities are considered to be representative of the nation's 3,337 largest treatment facilities (and included the treatment plants in Buffalo and North Tonawanda). The samples were tested for 145 chemicals, including metals, PAHs, nitrogen, phosphorus, flame retardants (PDBEs), pharmaceuticals, hormones, and steroids. The study found that significant concentrations of one or more chemicals were measured in a substantial fraction of the 74 treatment plants. The prevalence of a wide array of pharmaceuticals, steroids and hormones, as summarized in the EPA report, demonstrates that the sewage treatment process does not degrade these contaminants effectively. Moreover, the study did not assess the variability of sludge composition over time.

As recently as April 2014, a study published in a peer-reviewed journal confirmed that emerging contaminants in sewage sludge can persist in soils at land application sites and pose a risk to groundwater. *Dissipation of Contaminants of Emerging Concern in Biosolids Applied to Nonirrigated Farmland in Eastern Colorado*, Tracy J.B. Yager, Edward T. Furlong, Dana W. Kolpin, Chad A. Kinney, Steven D. Zaugg, and Mark R. Burkhardt, *Journal of the American Water Resources Association*, Vol. 50, No. 2 (April 2014). U.S. Geological Survey researchers tested an eastern Colorado wheat field that used treated sludge from a Denver sewage treatment plant. Chemicals in antibacterial soaps, cleaners, cosmetics, fragrances, and prescription drugs such as Prozac and Warfarin not only persisted in the topsoil, but were found to have migrated downward. The study revealed that 10 "emerging" (i.e. unregulated) contaminants were detected in soil at depths between 7 and 50 inches a full 18 months after the sludge was applied, despite the fact that none of the contaminants were detected in baseline soil sampling before land application.

The Town Board finds that current DEC regulations ignore and/or fail to address a growing body of scientific evidence concerning the potential significant adverse environmental, human health and food chain effects associated with the handling, storage and land application of biosolids. In addition, the Town Board finds that agricultural soils are a unique and valuable resource that, once contaminated with persistent pollutants, could remain damaged for the foreseeable future. Likewise, the Town Board is concerned that even minute levels of uptake into food plants and organisms in the food chain raises the question of potential impacts to human health.

During a Town Board meeting on May 12, 2014, Quasar representative Nathan Carr suggested that Quasar, the Town of Wheatfield and other interested parties should develop testing protocols for biosolids as an alternative to a ban on its use in the Town, and that the Town should share the

cost of this testing. The Town, of course, has neither the institutional capacity nor the financial or technical resources to bear this unnecessary burden on behalf of Quasar's business nor the federal or state agencies responsible for ensuring the safe use of biosolids. Moreover, in the absence of updated federal and state regulations which address the important health and safety concerns outlined in this determination, and in the face of inadequate enforcement of existing Part 360 regulatory requirements and professional best practices with respect to land application of biosolids, the Town Board finds that the storage, handling, land application and similar activities involving biosolids in the Town of Wheatfield presents a threat to public health, safety and the environment.

Based on the foregoing, the Town of Wheatfield Town Board finds that it is necessary to exercise its express statutory authority under E.C.L. 27-0711 to adopt the Proposed Local Law. The Town Board finds that the Proposed Local Law will not result in any significant adverse impacts on the environment and will, in fact, serve to mitigate potential adverse impacts on the public health and safety and the environment associated with such biosolids activities in the Town of Wheatfield.

III. The Processing and Storage of Biosolids Presents a Threat to Public Health, Safety and the Environment

The Niagara BioEnergy AD facility is located on property in the Town of Wheatfield that has seasonably high groundwater, is adjacent to federally protected wetlands, and ultimately drains to the Niagara River. As discussed above, Quasar has proposed the addition of millions of gallons of additional biosolids storage capacity at the Niagara BioEnergy AD facility and at various other locations in Western New York. In addition, DEC records indicate that Quasar has proposed smaller "temporary storage devices" at certain off-site locations including, among other things, "storage bags" at farm properties. All of these activities present the potential for spillage of biosolids to vulnerable groundwater and surface waters, and air emissions of pathogens and noxious odors in the Town of Wheatfield.

The Town Board is aware that the Ohio Environmental Protection Agency (Ohio EPA) has pursued enforcement against Quasar for numerous alleged regulatory violations regarding Quasar's Carroll Storage Lagoons. According to a letter from the EPA's environmental specialist Paul Vandermeer, Quasar's Carroll/Central Ohio Bioenergy Sludge Storage Lagoons were "nearly filled to overflowing with biosolids" during an inspection September 18, 2012, and "[t]here was literally no room to accommodate the storage of any more biosolids (not to mention heavy precipitation) without the distinct possibility of an overflow." In addition, Ohio investigators reportedly discovered, among other things, numerous cracks and holes in a berm in the lagoon, trucks that appeared to be draining biosolids over the ground instead of the lagoon, and other compliance problems.

In addition, the Town Board is concerned that Quasar personnel and response equipment immediately available at the Niagara BioEnergy AD facility are inadequate to address significant releases of Equate that might be caused by sudden, unplanned damage to the structures there, particularly if the biosolids storage capacity at the Niagara BioEnergy AD is substantially increased. For example, Quasar's "Niagara BioEnergy Digester Prevention / Contingency Plan"

calls for containment of spills using "straw bales" and "compost socks." A March 24, 2014 letter from Quasar representative Alan Johnson notes, among other things, that "sand bags will be available should there be an event which requires a temporary closure of the drainage ditch near the plant," and that visual monitoring, rather than leak detection systems, would be utilized. In addition, Mr. Johnson argues that secondary containment equipment for Equate is not necessary simply because it is not mandated under New York State regulations governing hazardous waste management facilities. Likewise, the Town Board finds that serious questions remain concerning Quasar's ability to accommodate any significant biosolids spillage at off-site locations, or to safely treat or store biosolids at satellite locations such as farms.

There are potential harmful routes of human exposure to the known toxics in biosolids. Potential exposure pathways to workers and neighbors at storage sites include airborne transport, direct contact, surface water runoff and contamination of groundwater. Airborne transport of pathogens, organic chemicals and endotoxins pose the highest risk to neighbors. The 2013 Cornell Guide for Integrated Field Crop Management (http://cwmi.css.cornell.edu/Sludge/cornellguide_sludge2013.pdf) indicates that uncertainties remain on the health impacts to neighbors from airborne pathogens and toxins, and from human exposure to heavy metals and organic chemicals in soil.

In addition to the Part 360 solid waste management facility permit previously mentioned, operations at the Niagara BioEnergy AD are governed by an "Air State Facility Permit" No. 9-2940-00191/00002 ("Niagara BioEnergy Air Permit"). The Niagara BioEnergy Air Permit is intended to control, among other things, emissions of hydrogen sulfide (H₂S), ammonia (NH₃) and "odiferous VOCs." According to the Niagara BioEnergy Air Permit, p. 3, "[s]ince H₂S is toxic and both H₂S and NH₃ have low odor thresholds, the potential impact of these emissions on the surrounding community is a concern." According to an August 16, 2012 letter from Bruce Bailey to Lisa Porter, odor problems during the filling of tanker trucks containing biosolids can be minimized, but "cannot be totally eliminated." Further, records obtained from the DEC indicate that "nauseating odors" emanating from the Niagara BioEnergy AD have been reported. See, e.g. December 13, 2013 e-mail from DEC Environmental Engineer Marcia Ladiana to Bruce Bailey. In addition, the Town Board is aware that the Ohio EPA reportedly has found objectionable odors at some of Quasar's facilities in Ohio, according to notices of violation reportedly sent to Bruce Bailey.

Based upon the above, the Town Board finds that the Proposed Local Law will not adversely impact, and in fact will serve to protect, public health and safety in the Town of Wheatfield, as well as mitigate potentially adverse environmental impacts to surface water, groundwater and air quality in the vicinity of Anaerobic Digestion Facilities, Land Application Facilities and Storage Facilities as defined in the Proposed Local Law.

CONCLUSION:

The Town Board finds that the potential impacts that were identified in connection with adoption of the Proposed Local Law are not significant in magnitude or effect. The impacts that are

likely to occur as a result of the Proposed Local Law appear, on the whole, to be beneficial and will not, either individually or collectively, have a significant impact on the environment. Accordingly, the Town Board determines that the undertaking of this action will not constitute an action significantly adversely affecting the quality of the environment and that no further environmental review of the Proposed Local Law will be conducted.

For further information concerning this Negative Declaration, contact:

Robert J. O'Toole, Town Attorney, Town of Wheatfield, 2800 Church Rd, Wheatfield, NY 14120; (716) 930-3817.

A copy of this notice was sent to:

New York State Department of Environmental Conservation
New York State Department of Agriculture & Markets
Niagara County Department of Environment and Planning
Niagara County Sewer District No. 1
U.S. Army Corps of Engineers
Tuscarora Nation
New York State Senator George D. Maziarz
New York State Assemblyman John D. Ceretto
Town of Cambria
Town of Lewiston
Town of Lockport
Town of Marilla
Town of Pendleton
Town of West Seneca
Town of Wilson

TOWN OF WHEATFIELD

LOCAL LAW NO. _____ -2014

A. Title

Local law to amend Chapter 161 of the Town Code of the Town of Wheatfield relating to solid waste to prohibit the collection, storage, processing, handling, recycling, disposal and/or land application of biosolids, digestate and/or other sludges derived from municipal wastewater in the Town of Wheatfield.

B. Enacting Clause

BE IT ENACTED BY THE TOWN BOARD OF THE TOWN OF WHEATFIELD AS FOLLOWS:

C. The Body

SECTION 1:

Article I of Chapter 161 shall be renamed "Refuse."

§161-3 (Definitions) shall be amended as follows:

§161-3. Definitions. As used in this Article I, the following terms shall have the meaning indicated herein. None of the terms defined below in this Article I shall be deemed to include, or apply to, any material or activity prohibited or regulated under Article III of this Chapter.

The remainder of this section shall remain unchanged.

SECTION 2:

A new Article III is added as follows:

Article III. Biosolids Derived From Sewage and Wastewater

§161-18. Title.

This article shall be known as the "Biosolids Management Law of the Town of Wheatfield."

§161-19. Purpose.

A. The Town of Wheatfield finds that the processing, collection, handling, storage, treatment, land application and/or disposal of biosolids, digestate and other waste

materials generated by the treatment of municipal wastewater, which contain human waste and other impurities, pose a significant health risk to the residents of the Town and may adversely impact the surrounding environment. The potential contamination of groundwater, surface water and soil, as well as the potential for air pollution, resulting from such activities poses an unreasonable risk to town residents, public health and the environment.

B. The Town Board intends by this local law to:

1) Prohibit the construction and operation of new Anaerobic Digestion Facilities, Land Application Facilities and Storage Facilities within the Town of Wheatfield in order to promote a clean, wholesome and attractive environment for the community.

2) Reduce the risk of pollution and other harmful effects, to the maximum extent possible, from existing Anaerobic Digestion Facilities, Land Application Facilities and Storage Facilities by restricting the scope and size of such activities.

3) Ensure that accurate, current information about solid waste disposal operations within the Town is available to public officials and residents.

4) Protect the residents of the Town from the harmful effects of Biosolids, including:

a. Hazardous and nuisance conditions, including contamination of groundwater, surface water and air, odors, excessive traffic, dust and noise.

b. Diminution of property values associated with adjacent or proximate Biosolids operations that may interfere with the orderly development of properties.

5) Exercise the Town's police powers under the Municipal Home Rule Law and § 130(1)(6), (E) and § 136 of the Town Law for the physical and mental well-being and safety of its inhabitants and to restrict Biosolids treatment facilities, land application facilities, and waste disposal operations pursuant to the authority of § 27-0711 of the Environmental Conservation Law which authorizes municipalities to impose controls on waste disposal operations that are more strict than state law requires.

§161-20. Definitions.

A. Unless indicated herein or the context otherwise requires, the terms used in this article shall have the same meaning as those defined in Article 27 of the New York Environmental Conservation Law and the regulations promulgated thereunder.

B. The following terms shall have the meanings indicated herein:

ANAEROBIC DIGESTION - The biochemical decomposition of organic matter into methane and carbon dioxide (biogas) by microorganisms in the absence of air.

ANAEROBIC DIGESTION FACILITY - Any facility which accepts, treats or processes wastewater treatment sludges, Biosolids, manure, food waste, fats, oils, greases, energy crops, glycerin, silage or any similar material for the purpose of producing biogas and Digestate.

BIOSOLIDS - Any solid, semi-solid or sludge-like organic material generated by the treatment of sewage or wastewater or otherwise derived from sewage or wastewater or their byproducts. SEWAGE SLUDGE shall be considered synonymous with Biosolids.

DISPOSAL - The placement, distribution, land application or other handling of Biosolids, Digestate or wastewater treatment sludges in a manner that releases such material into any environmental media, including the ground, water or air.

DIGESTATE - A material remaining or produced as a result of the anaerobic digestion of Biosolids or wastewater treatment sludges.

LAND APPLICATION FACILITY - Any facility or property at which Biosolids, Digestate or wastewater treatment sludges are disposed, applied or otherwise used.

PATHOGENIC ORGANISM - Any disease-causing organisms, including, but not limited to, bacteria, viruses, protozoa and viable helminth ova.

PERSON - Any individual, firm, partnership, company, corporation, association, society or group.

PUBLICLY OWNED TREATMENT WORKS - Any facility owned and operated by a municipal or governmental entity for the purposes of treating wastewater, sewage or septage.

STORAGE FACILITY - Any facility or property used for the storage or processing of Biosolids, Digestate or wastewater treatment sludges.

§161-21. Prohibitions.

Except as provided elsewhere within this article, no person shall collect, accept, store, process, treat, handle, generate, apply to the land or dispose of Biosolids, Digestate or other liquid, solid or semi-solid waste, any of which contains human waste or any pathogenic organisms, or which are derived from materials containing human waste, pathogenic organisms and/or municipal wastewater, at any location within the Town of Wheatfield.

§161-22 Exclusions

The prohibitions set forth in Section 161-21, and the limitations set forth in Section 161-23, shall not apply to:

- A. Anaerobic Digestion Facilities that do not accept, treat, or process Biosolids or sewage sludge from wastewater treatment facilities.
- B. The generation of Biosolids at a Publicly Owned Treatment Works.
- C. Private septic systems located within the Town of Wheatfield.
- D. The sale or storage of lawn and garden fertilizer packaged for retail sale, or the application of lawn and garden fertilizers packaged for retail sale, on an area of land less than 2.5 acres in size.

§161-23. Existing Activities.

A. Except as otherwise provided in this Section 161-23, any and all activities previously duly approved or for which permits have been duly issued prior to the effective date of this Local Law with respect to the operation of an Anaerobic Digestion Facility, Land Application Facility, or Storage Facility (hereinafter "Existing Facilities") may be continued but may not be expanded or modified with respect to operational or storage capacity, bulk, height, area or other dimensional or spatial aspect and/ or permitted activity. Any such Existing Facility shall be considered a legal non-conforming use and subject to regulation as such pursuant to Article V of Chapter 200 of the Town Of Wheatfield Code.

B. Existing Anaerobic Digestion Facilities may apply to the Town Board for a special use permit to allow conversion of its treatment process to the production of Biosolids that meet "Class A" standards within the meaning of 40 C.F.R. § 503.32, or other modifications which the applicant demonstrates will eliminate or significantly reduce potential threats to public health and the environment. The Town Board shall consider the standards set forth in Section 200-74 of the Town Code and any relevant regulatory standards and scientific information in rendering its determination on such special use permit applications. Nothing contained in this subparagraph B shall relieve the applicant from the need to obtain any other necessary Town of Wheatfield or regulatory approvals.

C. The owner or operator of an Existing Facility shall provide a copy of any and all written communications, applications and reports to or from the New York State Department of Environmental Conservation and any other governmental or regulatory agency to the Town of Wheatfield Building Inspector at the following address within 7 business days of the issuance or receipt of such written communications, applications or reports: Building Inspector, Town of Wheatfield Building Department, Lower Level - Town Hall, 2800 Church Road, Wheatfield, NY 14120.

§161-24. Severability.

The invalidity of any word, section, clause, paragraph, sentence or part or provision of this Local Law shall not affect the validity of any other part of this Local Law which shall be in effect.

D. Effective Date

This Local Law shall take effect immediately upon adoption by the Town Board of the Town of Wheatfield and filing with the Secretary of State.

DULY ADOPTED, this _____ day of _____, 2014, by the following vote:

Supervisor Cliffe
Councilman Doucet
Councilman Gerbec
Councilman Helwig
Councilman Retzlaff

Voted: _____
Voted: _____
Voted: _____
Voted: _____
Voted: _____

Is the Storage and Land Application of Biosolids appropriate in the Town of Wheatfield, NY?

1. Map of properties zoned agricultural in Niagara County District 6 and 7
2. Streams, wetlands and 100 year floodzone maps
3. NYSDEC minimum setbacks for direct injection: 50' property line, 500' occupied buildings, 100' surface water and wetlands
4. Groundwater and bedrock must be deeper than 2', clay and other low permeability soil textures prohibited
5. Poor drainage resulted in runoff from septic tank leach fields into drainage ditches and swales in Wheatfield and other Niagara County towns south of the Niagara Escarpment
6. Borings to characterize soil, observe depth to groundwater and document drainage; depth to groundwater data from monitoring/remediation wells
7. Compile data and plot on Wheatfield base maps from Wendel

Documents Reviewed

- Regulations: 40 CFR 503 (EPA) and 360-4 (NYSDEC)
- 1997 EPA Process Design Manual for Land Application of Biosolids
- 1983 EPA Process Design Manual for Land Application of Municipal Sludge
- Land Application of Wastes, Volume I and II, Loehr, Jewell, Novak, Clarkson & Friedman, Cornell University
- 1972 Niagara County Soil Survey
- Niagara County Health Department documents pertaining to septic system failures
- Roadside Geology of New York, Van Diver
- NY, EPA and Town of Wheatfield maps and documents pertaining to wetlands, surface water, soils, bedrock and zoning

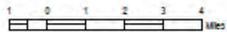
Town of Wheatfield

Generalized Location



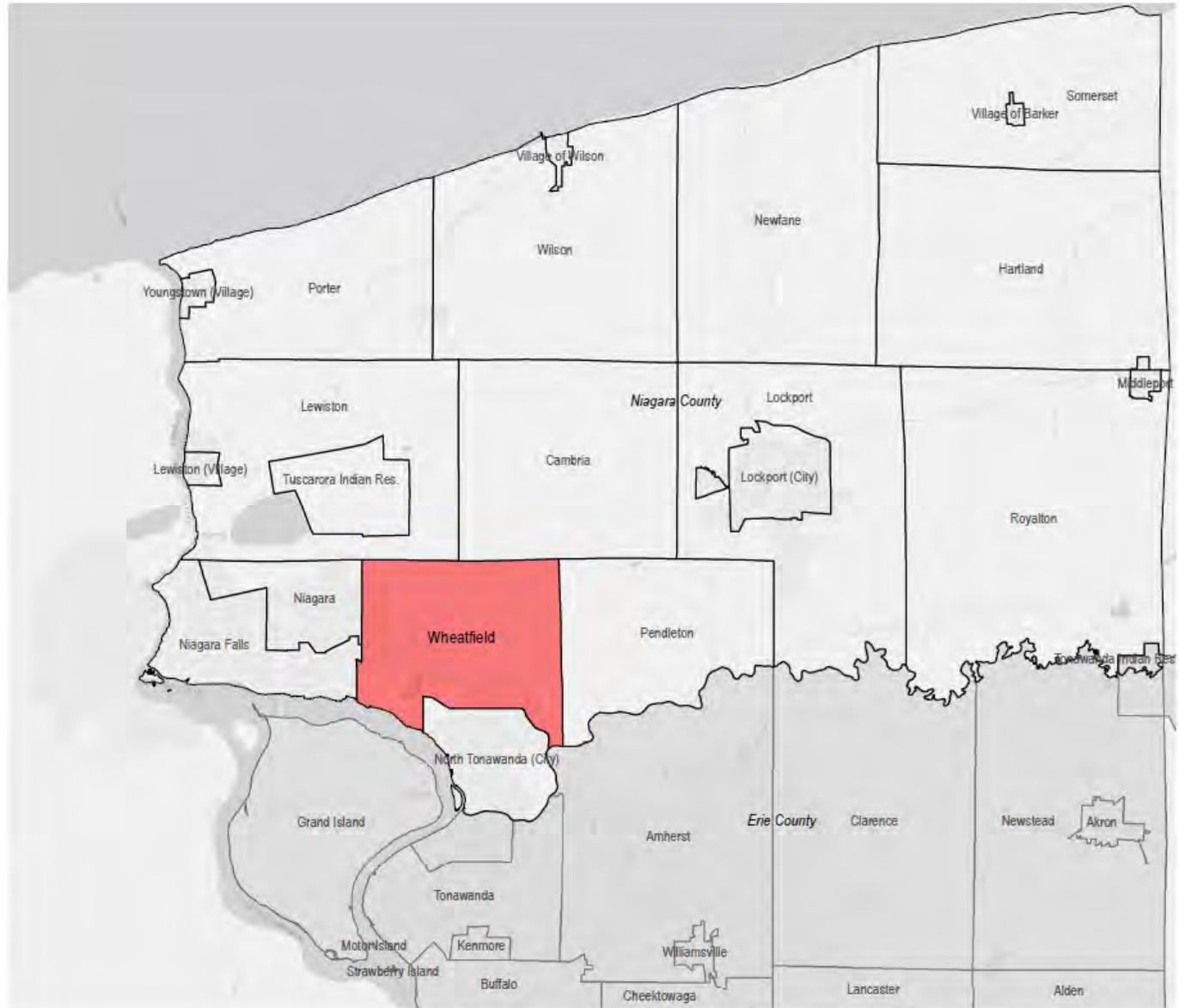
Key to Features

 Town of Wheatfield



WENDEL DUCHSCHNER ARCHITECTS & ENGINEERS, P.C. SHALL ASSUME NO LIABILITY FOR:
1. ANY ERRORS, OMISSIONS, OR INACCURACIES IN THE INFORMATION PROVIDED REGARDLESS OF HOW CAUSED WITH THE EXCEPTION OF FRAUDULENCE, OR
2. ANY DECISION MADE OR ACTION TAKEN OR NOT TAKEN BY READER IN RELIANCE UPON ANY INFORMATION OR DATA FURNISHED HEREIN.

DATA SOURCE: NIAGARA COUNTY



TOWN OF WHEATFIELD

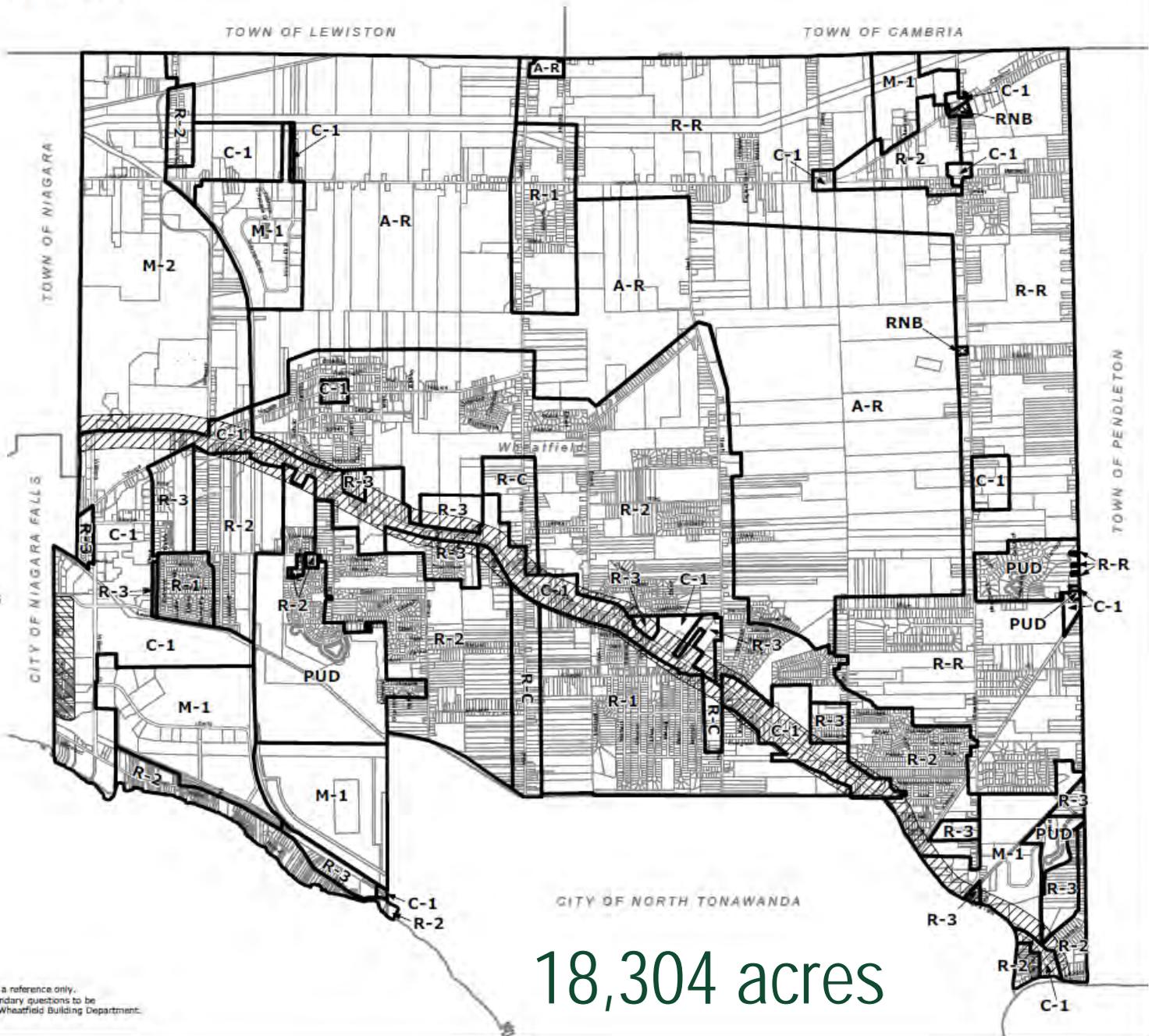
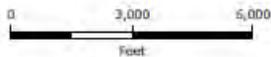
Niagara County, New York



ZONING

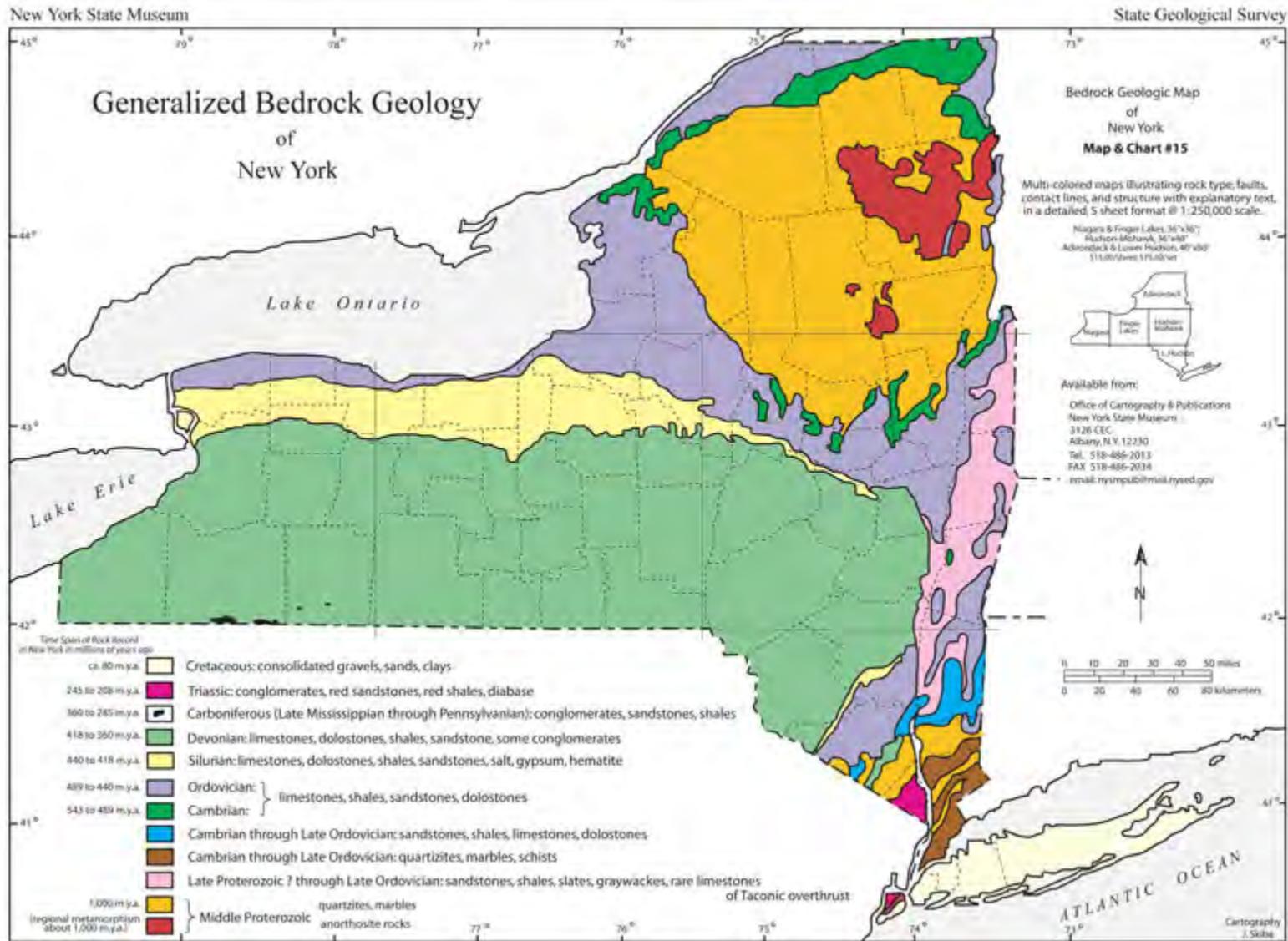
-  A-R, Agricultural - Residential
-  C-1, Commercial
-  M-1, Industrial - 1
-  M-2, Industrial - 2
-  O-1, Love Canal Overlay
-  O-2, Niagara Falls Blvd Overlay
-  PUD, Planned Unit Development
-  R-1, Residential - 1
-  R-2, Residential - 2
-  R-3, Residential - 3
-  R-C, Restricted - Commercial
-  R-R, Rural - Residential
-  RNB, Rural Neighborhood Business

Map Reference:
The land parcel basemap shown has been furnished by
Niagara Real Property Tax Services; 2009
William F. Budde, Jr., Director.
For details too small to be plotted,
refer to the agency's tax maps.



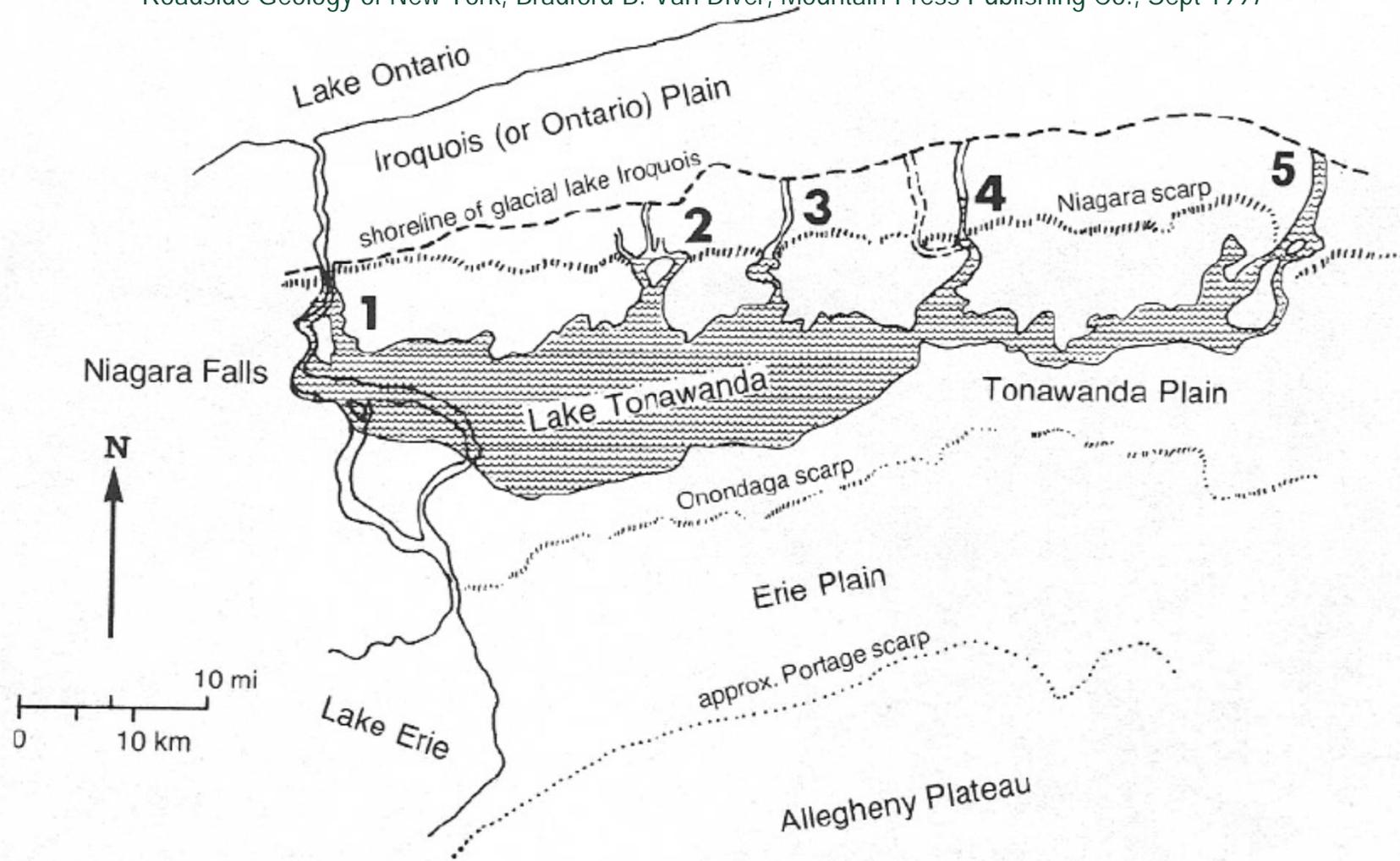
18,304 acres

Silurian Age Lockport Dolomite



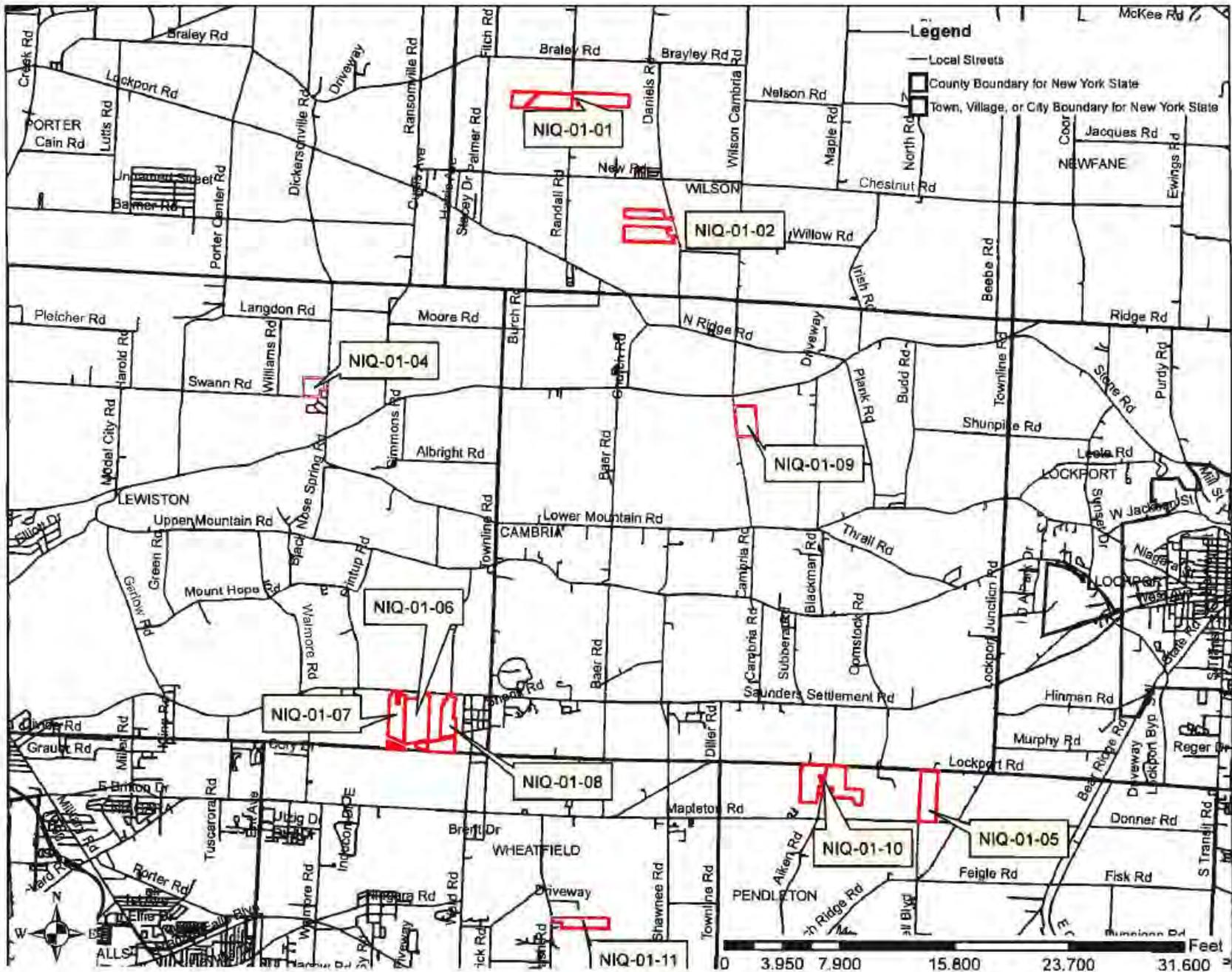
Niagara Escarpment





Map of the Niagara Frontier showing plains and scarps. Also shown is the area that was covered by glacial lake Tonawanda, with initial outlets at: 1) Lewiston (mouth of the Niagara Gorge); 2) Lockport; 3) Gasport; 4) Medina; and 5) Holley. The lake is now completely drained and Niagara is the only one of the original falls that remains.

Quasar Permitted Land Application Fields



Wheatfield Soils

Canandaigua-Raynham-Rhinebeck association

- Formed in lake-laid silts and very fine sands
- Deep, somewhat poorly drained to very poorly drained soils having a dominantly medium-textured to fine-textured subsoil

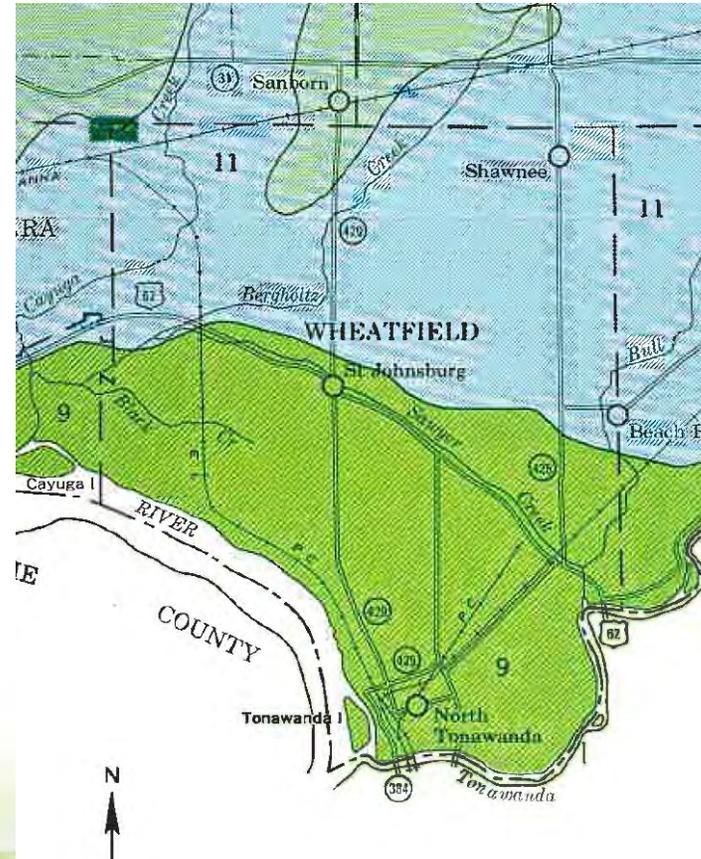
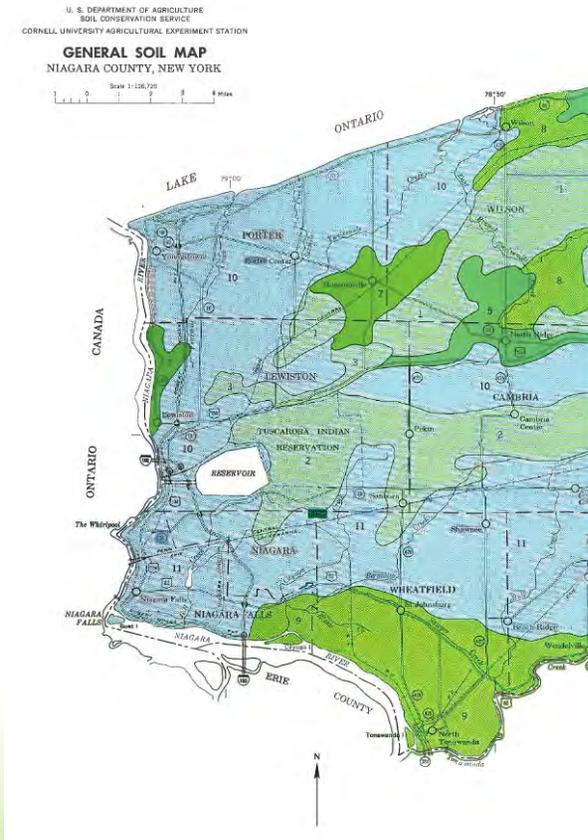
Odessa-Lakemont-Ovid association

- Formed in lake-laid clays and silts
- Deep, somewhat poorly drained to very poorly drained soils having a fine textured or moderately fine-textured subsoil

Hilton-Ovid-Ontario association

- Formed in glacial till
- Deep, well drained to somewhat poorly drained soils having a medium textured or moderately fine-textured subsoil
- Shallow bedrock at depth of 3.5 to 7 feet

General Soil Map



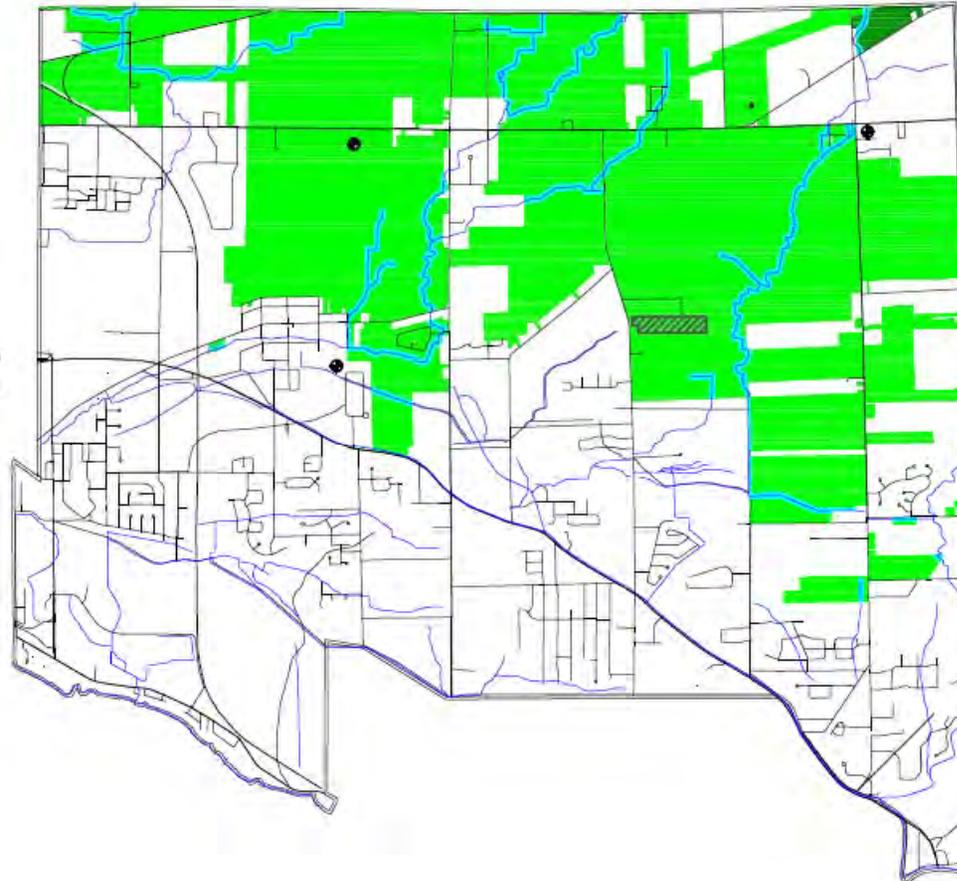
Wheatfield Geology

- Fractured limestone bedrock (Silurian Age Lockport Dolomite) at depth of 3-7 feet
- Overburden (surficial) soils are predominantly Odessa Series silty clay loam overlying silty clay to clay (all prohibited soil types for land application)
- Silt loam soils (Cayuga, Churchville, Ovid and Schoharie Series) are found in pockets within Odessa soils but are unsuitable for land application as the silt loam is thin (<1 ft) and overlie silty clay loam, silty clay and/or clay
- Other unsuitable soil types found in pockets within Odessa soils include Fonda and Lakemont Series
- Hilton and Canandaigua series soils are potentially suitable for land application based on soil texture classification

- AGRICULTURAL DISTRICT #6
- AGRICULTURAL DISTRICT #7
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- STATE WETLAND
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- SURFACE WATER
- ROAD
- RAILROAD

- HOME, BUSINESS, OR PLACE OF PUBLIC CONTACT SETBACK AREAS
- FLOODPLAIN AND WETLAND SETBACK AREAS
- SURFACE WATER SETBACK AREAS

- ALLOWABLE SOILS FOR LAND APPLICATION (HILTON SOILS)
- POTENTIALLY ALLOWABLE AREAS FOR LAND APPLICATION
- AREA PERMITTED FOR LAND APPLICATION
- + SOIL SAMPLE LOCATION

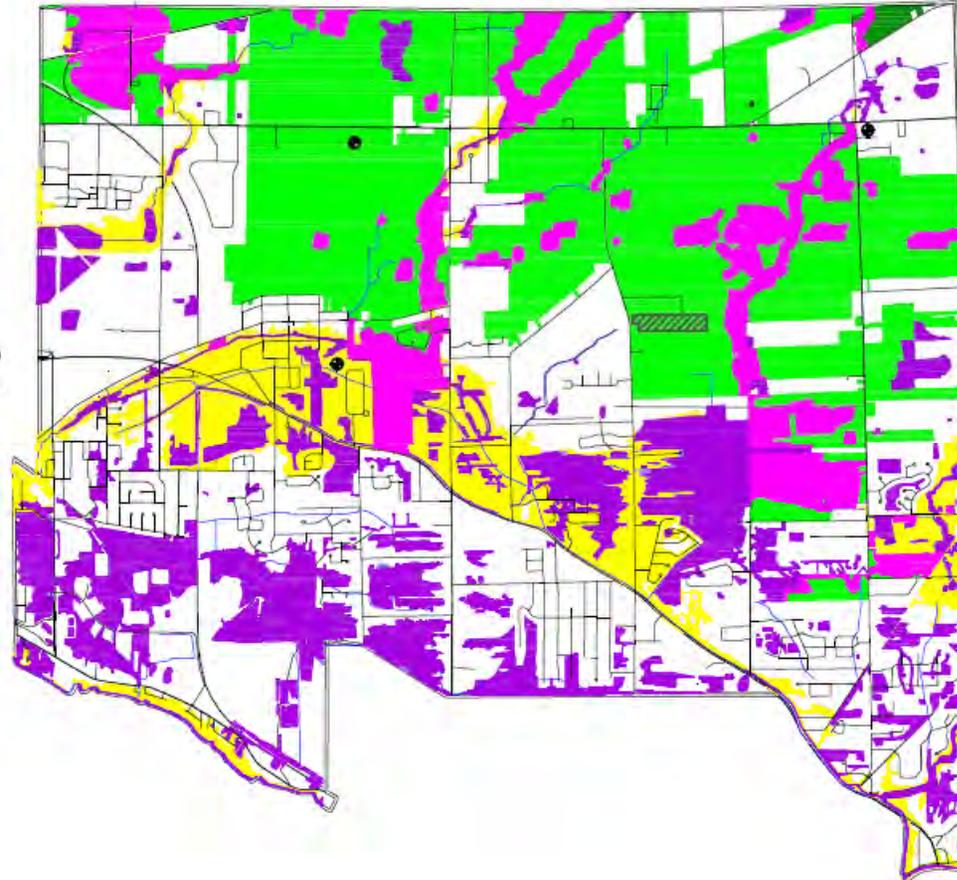


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PREPARED FOR: TOWN OF WHEATFIELD	
PROJECT MGR.:	
DESIGNED BY: CMC	
REVIEWED BY: SRC	
DRAWN BY: WENDEL	
REVISION	
BY	DATE
SCALE IN FEET: AS NOTED 	
PROJECT NAME / LOCATION: TOWN OF WHEATFIELD	
TITLE: SURFACE WATER SETBACK AREAS	
DATE: MAY 20, 2014	
PROJECT NO.: 14-013	
FIGURE: 3	

- AGRICULTURAL DISTRICT #6
- AGRICULTURAL DISTRICT #7
- FEDERAL WETLAND
- STATE WETLAND
- FEMA 100 YEAR FLOODPLAIN
- HOME, BUSINESS, OR PLACE OF PUBLIC CONTACT
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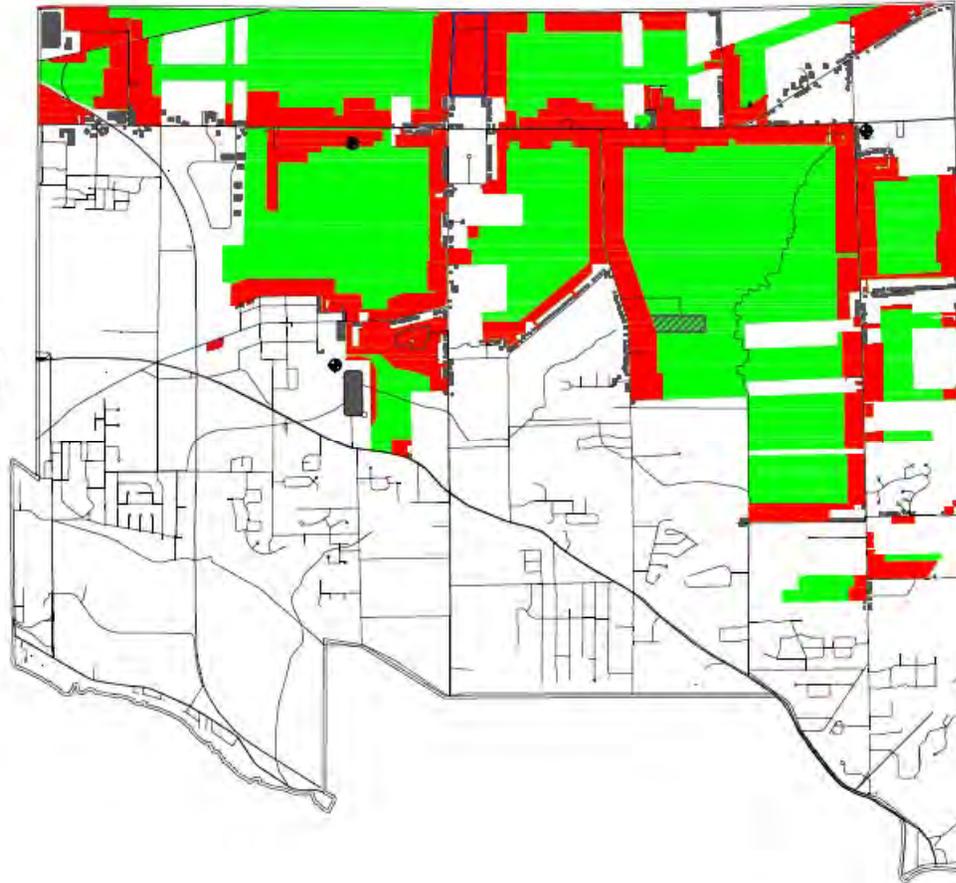
0 7000 feet

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PREPARED FOR: TOWN OF WHEATFIELD	
PROJECT MGR.:	
DESIGNED BY:	CMC
REVIEWED BY:	SRC
DRAWN BY:	WENDEL
REVISION	
BY	DATE
SCALE IN FEET, AS NOTED 	
PROJECT NAME / LOCATION: TOWN OF WHEATFIELD	
TITLE: FLOODPLAIN AND WETLAND SETBACK AREAS	
DATE:	MAY 20, 2014
PROJECT NO.:	14-013
FIGURE:	2

-  AGRICULTURAL DISTRICT #6
-  AGRICULTURAL DISTRICT #7
-  FEDERAL WETLAND
-  STATE WETLAND
-  FEMA 100 YEAR FLOODPLAIN
-  HOME, BUSINESS, OR PLACE OF PUBLIC CONTACT
-  SURFACE WATER
-  ROAD
-  RAILROAD

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-  POTENTIALLY ALLOWABLE AREAS FOR LAND APPLICATION
-  AREA PERMITTED FOR LAND APPLICATION
-  SOIL SAMPLE LOCATION



0 7000 feet

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 ENVIRONMENTAL TECHNOLOGIES INC.
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 www.matrixtech.com

PREPARED FOR:
 TOWN OF WHEATFIELD

PROJECT MGR:

DESIGNED BY:
 CMC

REVIEWED BY:
 SRC

DRAWN BY:
 WENDEL

REVISION	
BY	DATE

SCALE IN FEET, AS NOTED


PROJECT NAME / LOCATION:
 TOWN OF WHEATFIELD

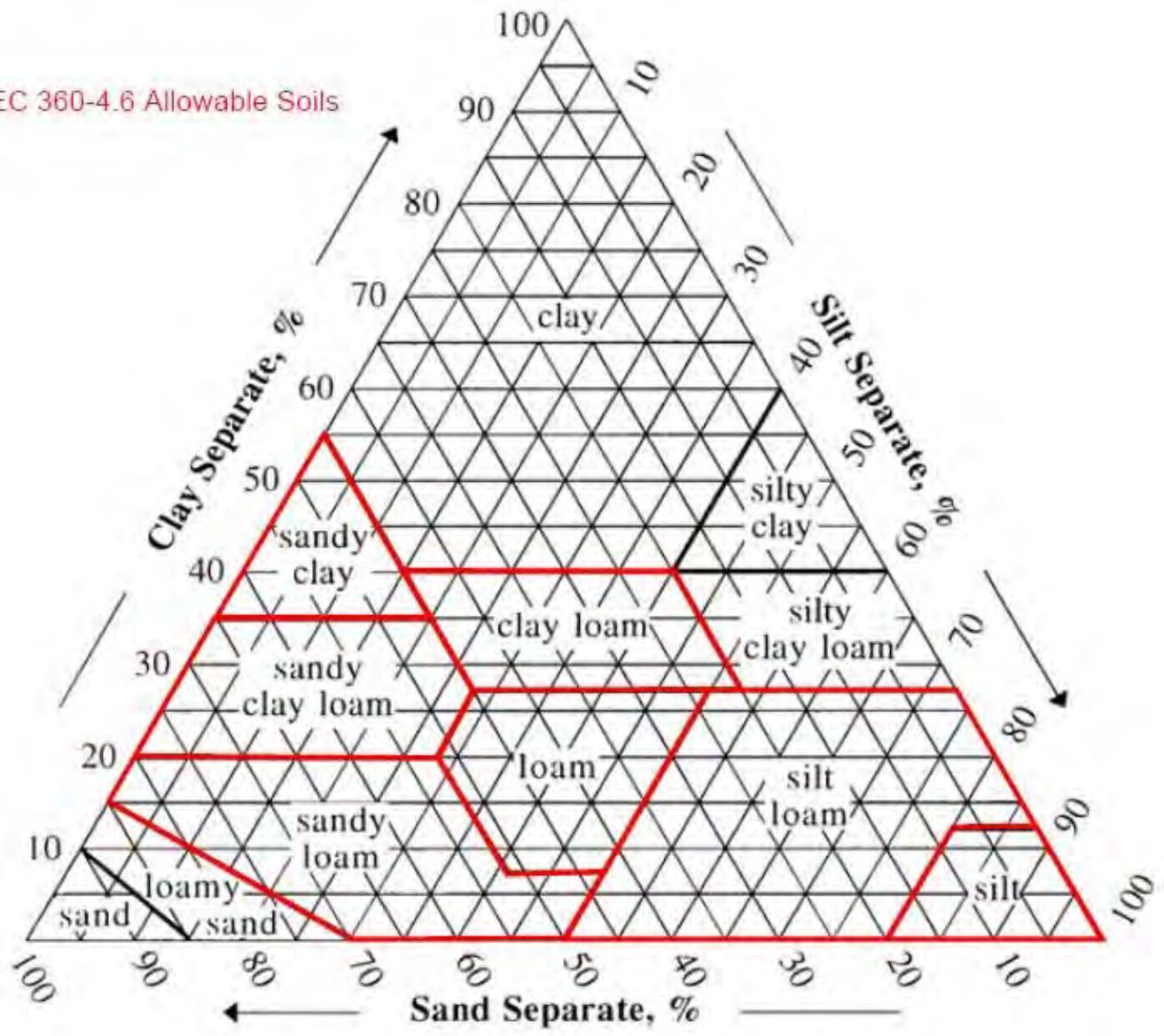
TITLE:
 HOME, BUSINESS, OR PLACE OF PUBLIC CONTACT SETBACK AREAS

DATE:
 MAY 20, 2014

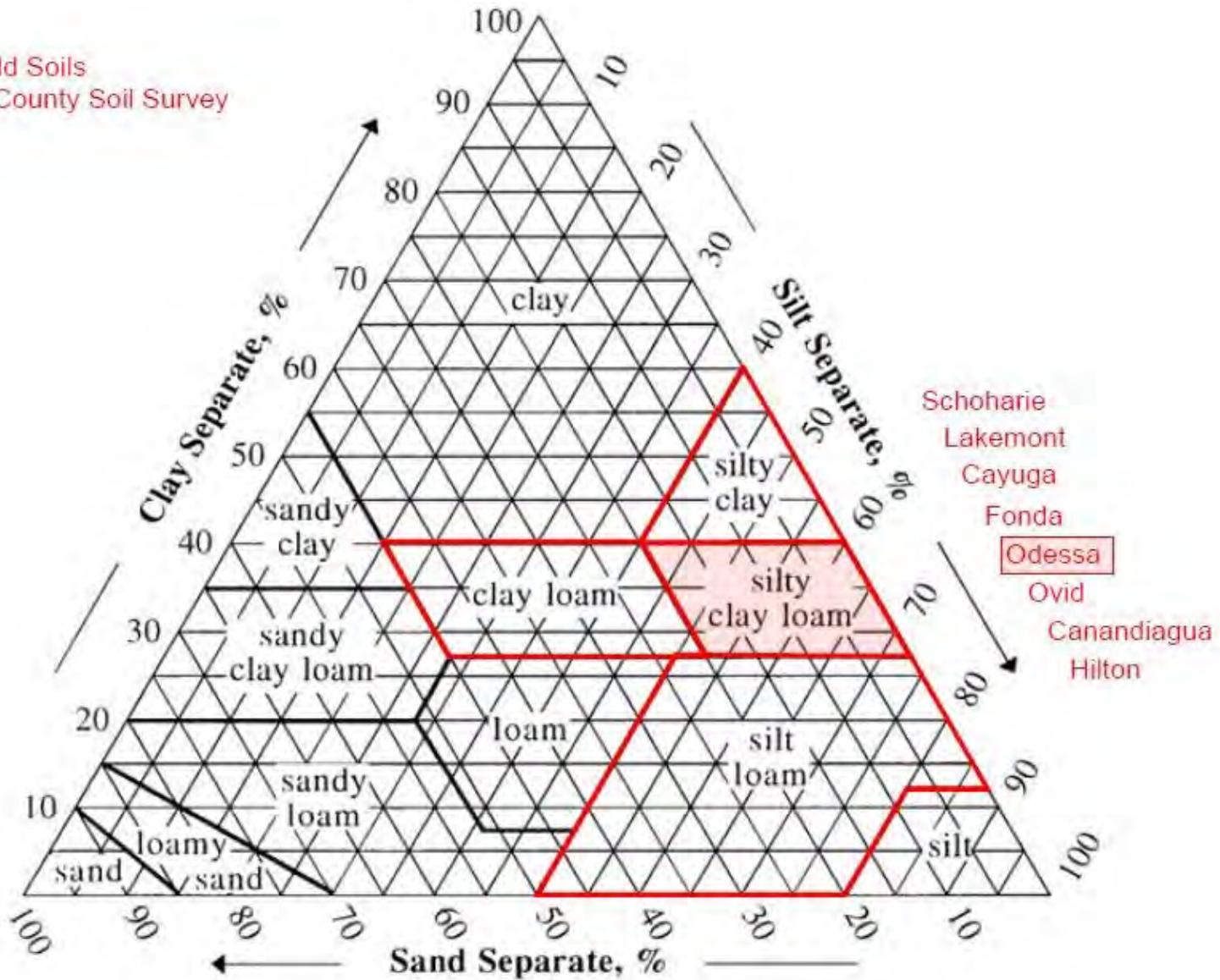
PROJECT NO.:
 14-013

FIGURE:
 4

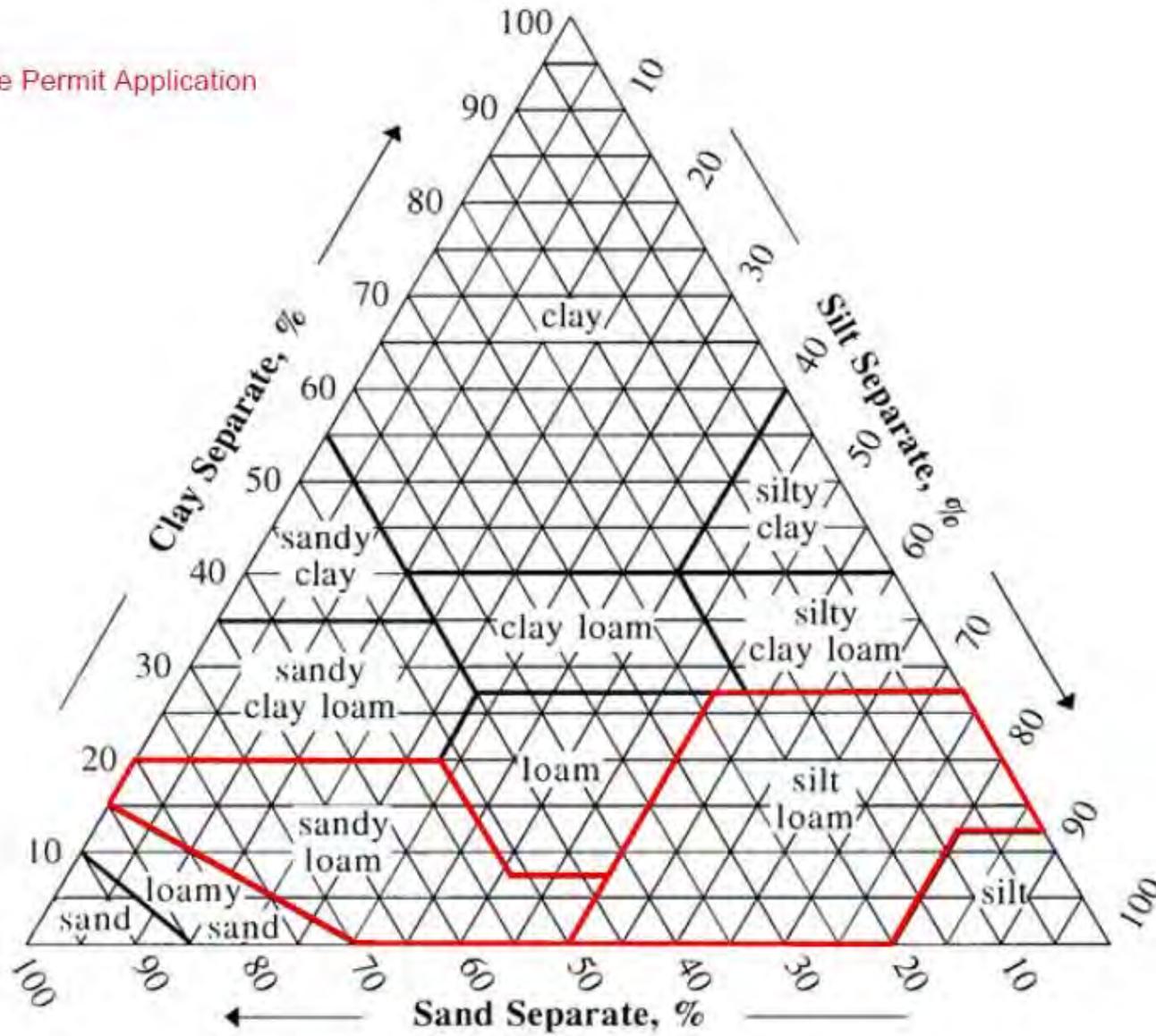
NYSDEC 360-4.6 Allowable Soils



Wheatfield Soils
Niagara County Soil Survey



Milleville Permit Application



Wheatfield Hydrogeology

- Two water tables zones; bedrock and overburden
- Seasonal high water table (perched) at or near ground surface
- Shallow overburden water table at depth of 1-4 feet in low permeability soils above the bedrock aquifer
- Odessa silty clay permeability <0.2 inches per hour is classified as slow to very slow
- Odessa drainage class is somewhat poorly to very poorly drained

Soil Sampling

2626 Lockport Road

Soil Survey: Ovid series; silt loam 0-11 in, silty clay loam to clay loam 11-24 in, loam till 24-50 in

- Agriculture field (previously tilled)
- Water ponded throughout fields
- Algae growth in standing water in non tilled soils suggests high frequency/duration of saturated soils
- 2-28 in: silty clay, water at 14 in
- 28-38 in: silty clay loam with subangular gravel increasing with depth
- 40 in: silty clay with subangular gravel (till)

Field South of 2626 Lockport Road



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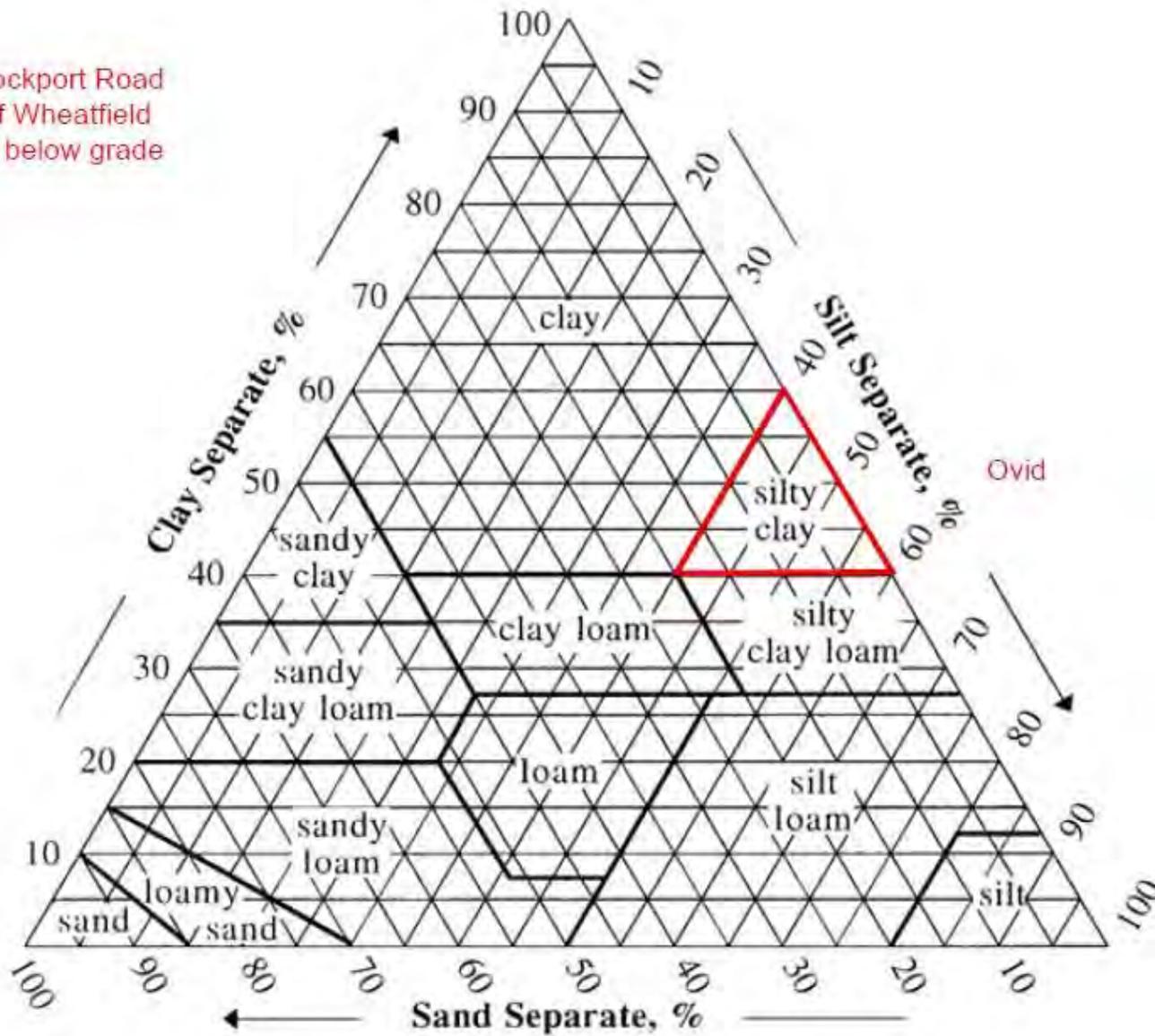
Ponded water at ground surface



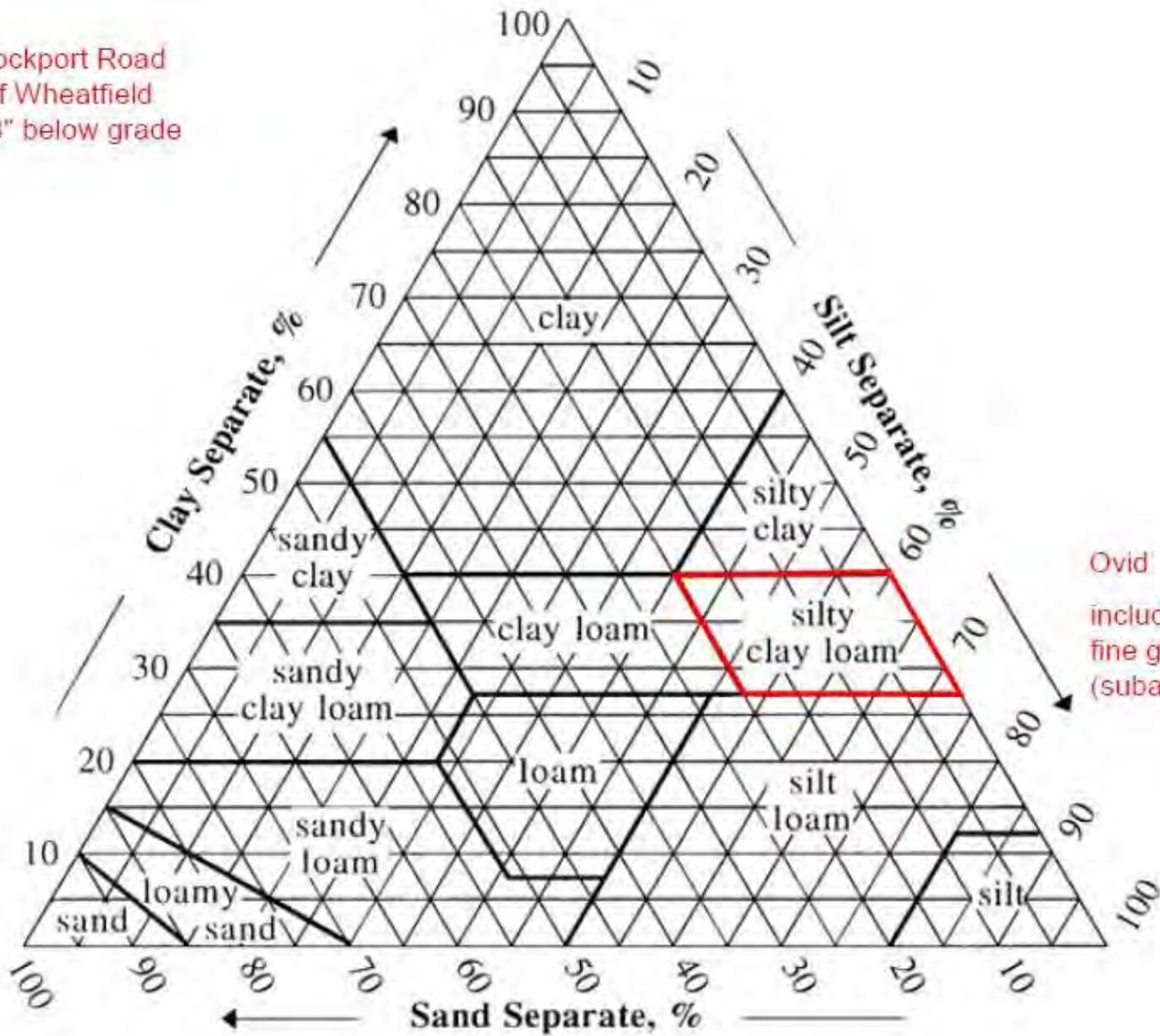
Algae growth



2626 Lockport Road
Town of Wheatfield
2" - 28" below grade

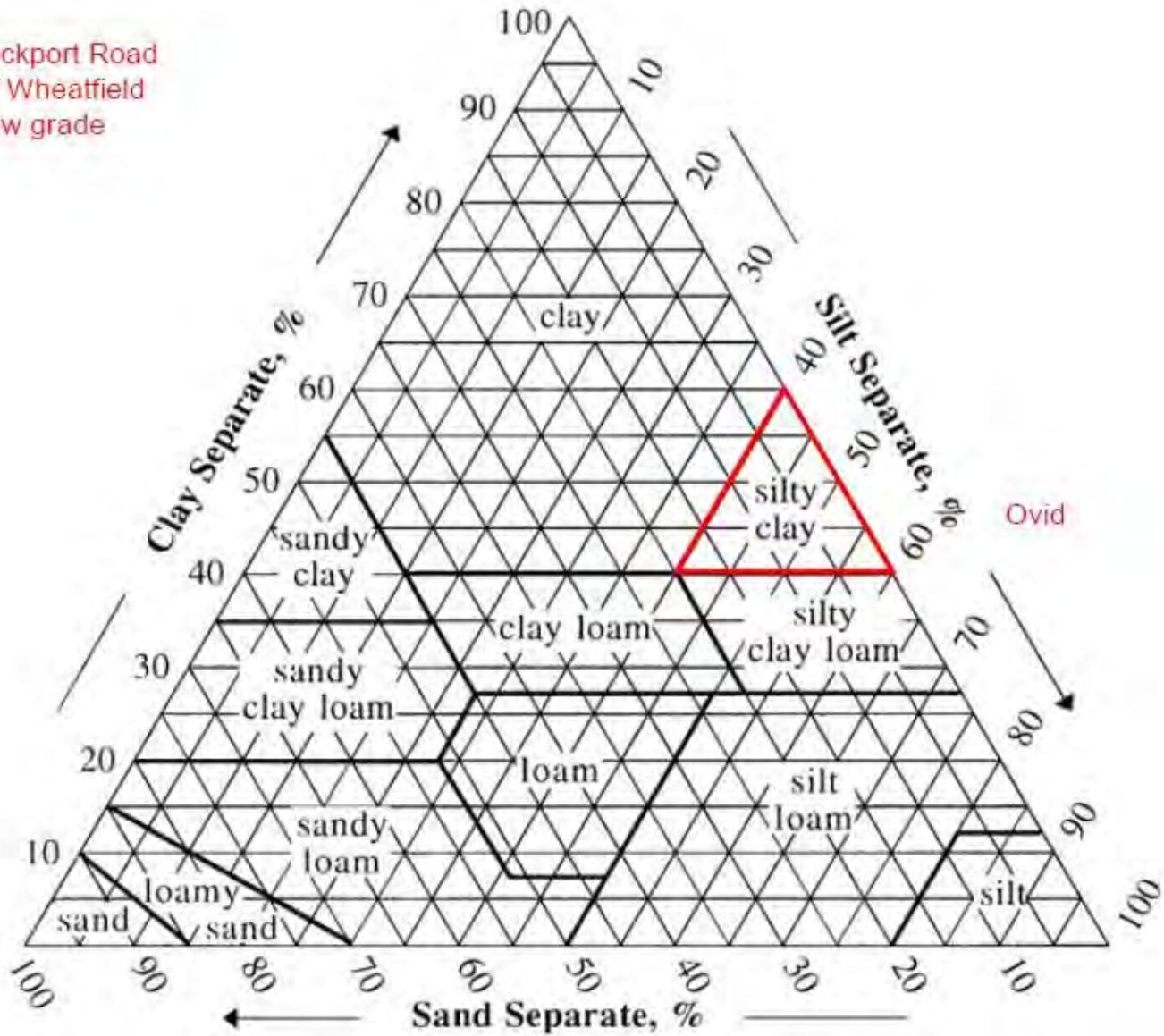


2626 Lockport Road
Town of Wheatfield
28" - 38" below grade



Ovid
includes trace
fine gravel
(subangular)

2626 Lockport Road
Town of Wheatfield
40" below grade



Soil Sampling continued

NW corner of Oppenheim Park

Soil Survey: Canandaigua series; silty clay loam and silt loam 0-35 in, stratified loamy fine sand, silt and clay 35-50 in

- Water ponded on grass covered surface and upper topsoil saturated
- 2-19 in: silt
- 9-25 in: silty clay
- 25-44 in: silt loam

Oppenheim Park



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environmental technologies for a cleaner world

Ponded water at ground surface



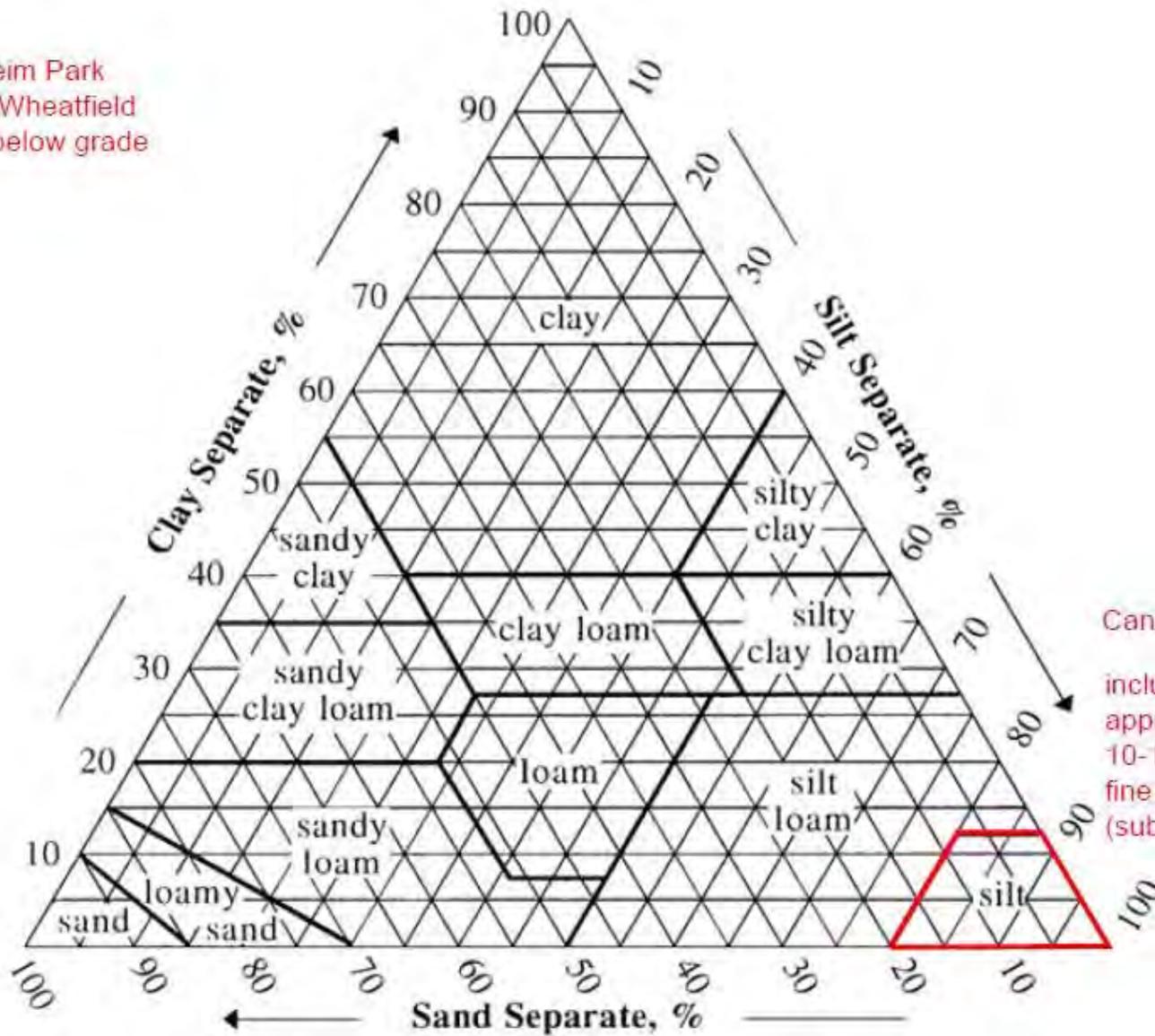
Silty clay soils



Shallow groundwater

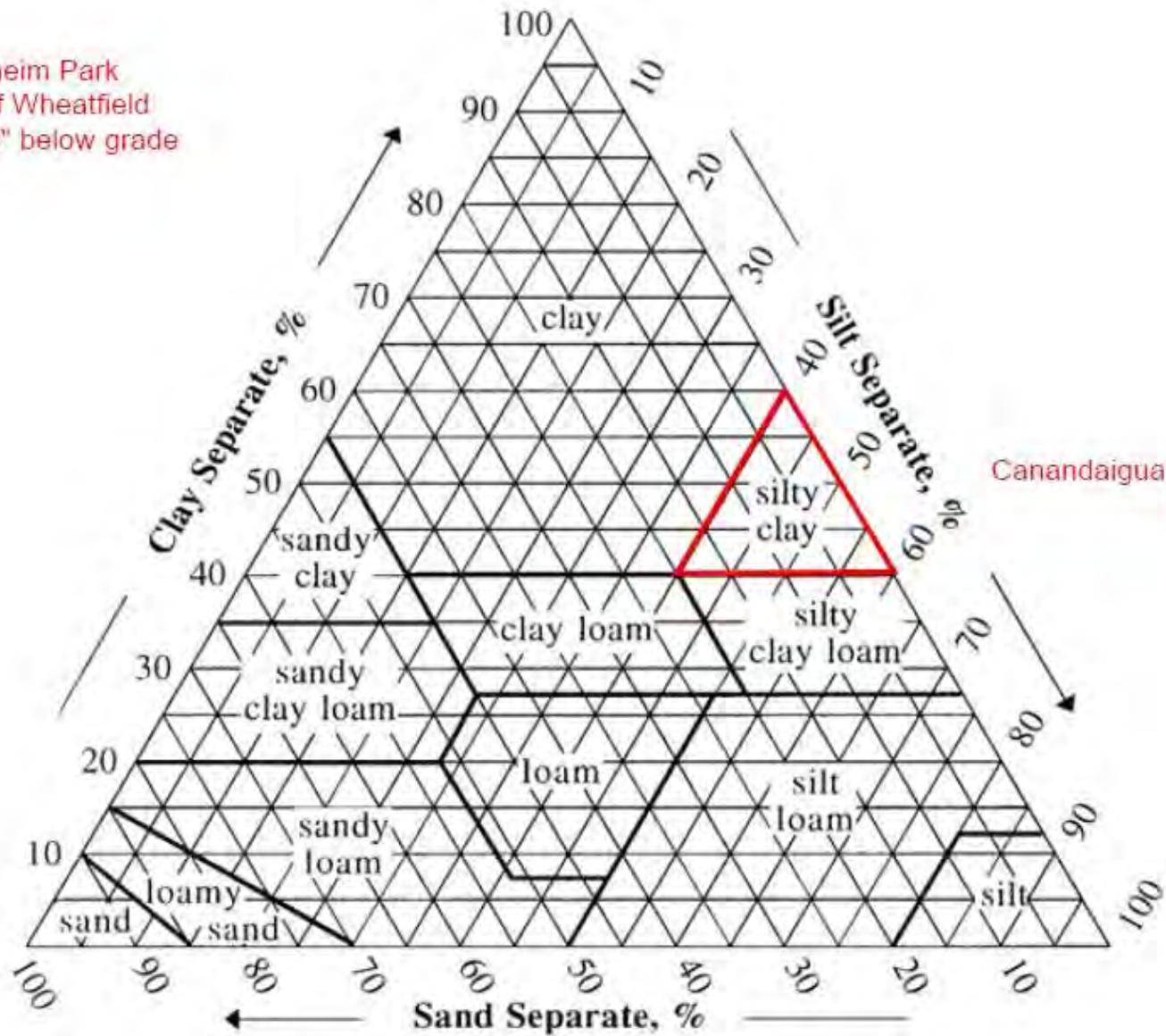


Oppenheim Park
Town of Wheatfield
2" - 19" below grade



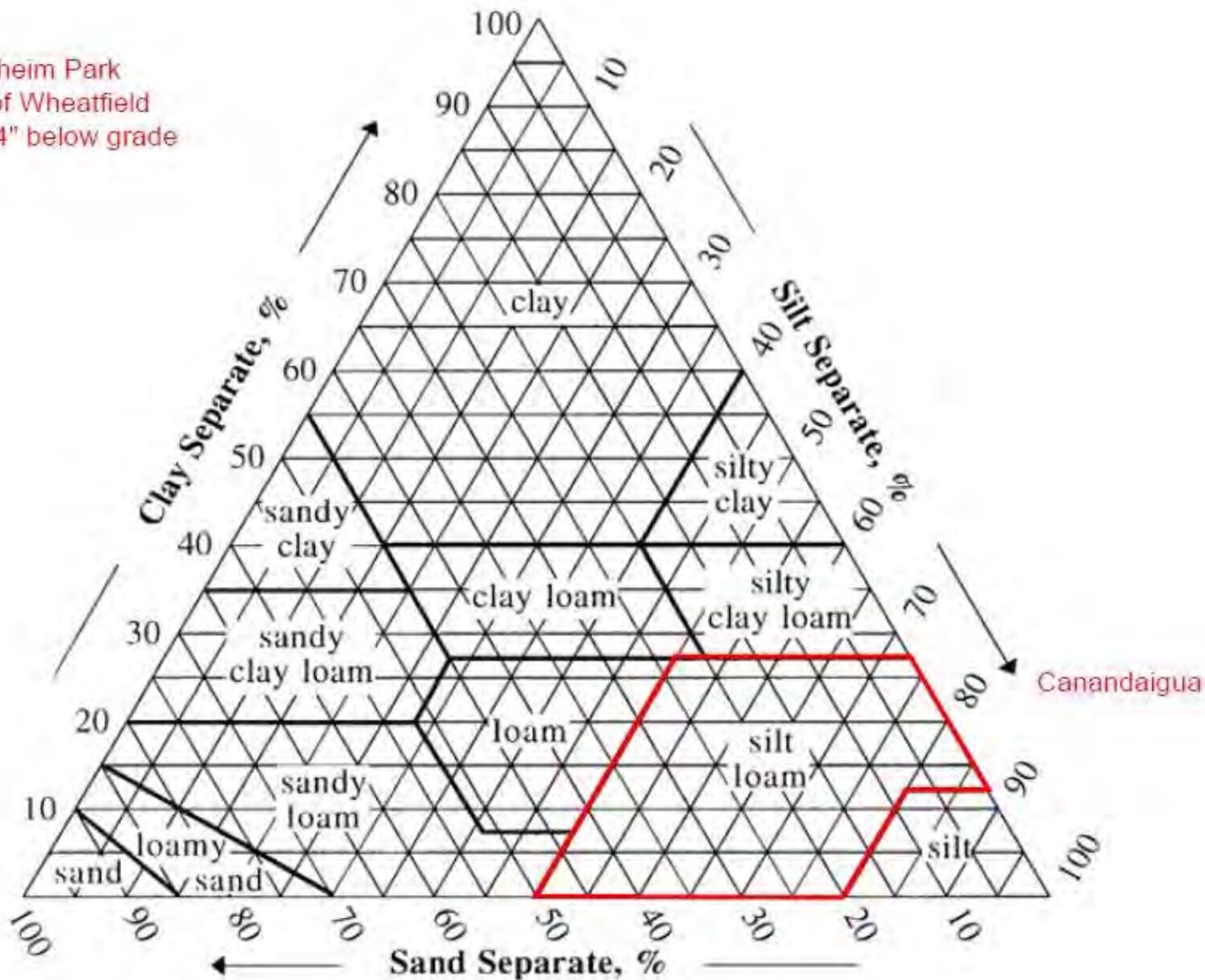
Canandaigua
includes
approximately
10-15%
fine gravel
(subangular)

Oppenheim Park
Town of Wheatfield
19" - 25" below grade



Canandaigua

Oppenheim Park
Town of Wheatfield
25" - 44" below grade



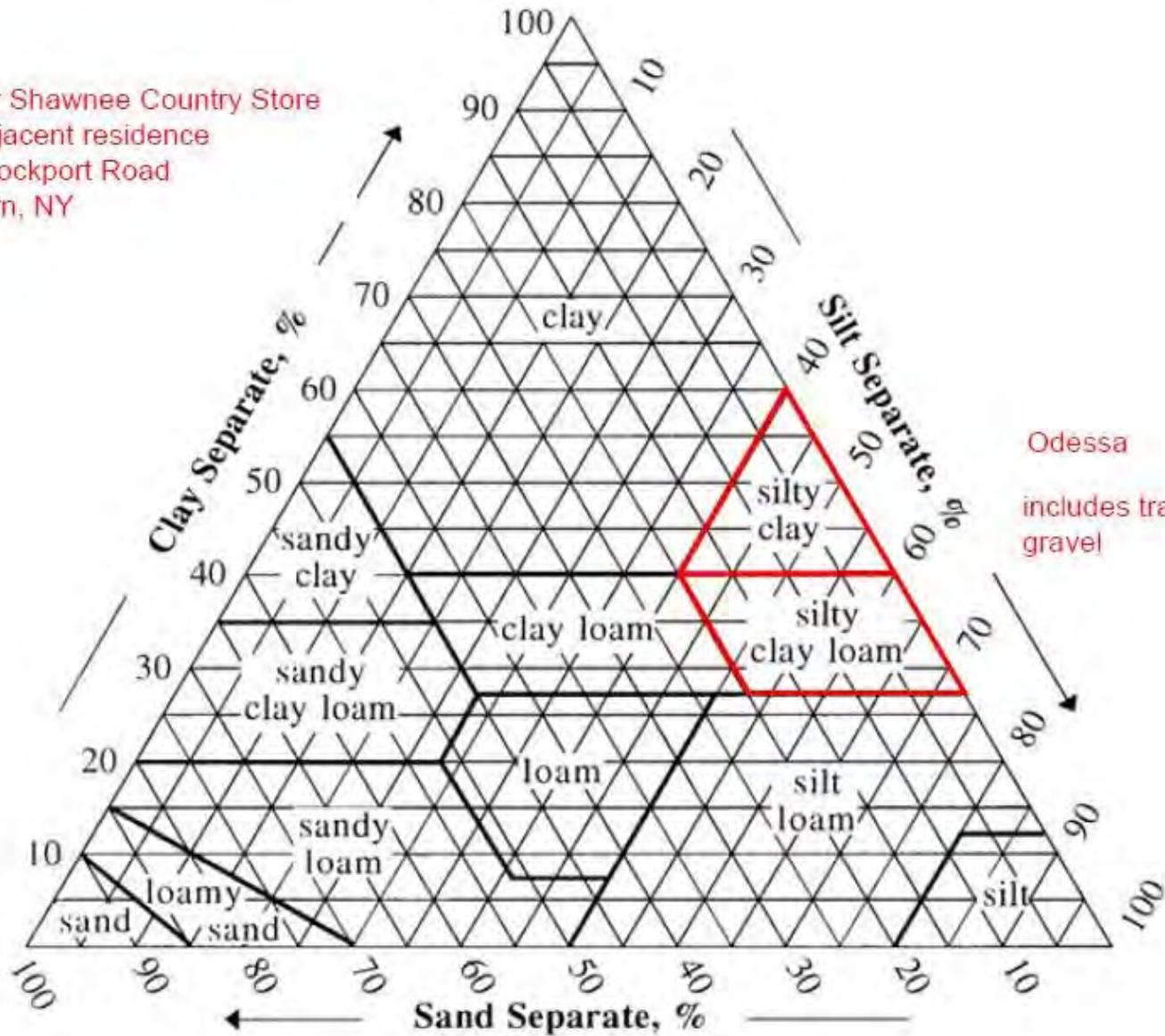
Soil Sampling continued

3820 Lockport Road

Soil Survey: Odessa series; silty clay loam 0-8 in, silty clay to clay 8-56 in

- Boring logs from monitoring well installation indicate silty clay and silty clay loam
- Overburden water table varies from 0.5 to 6.5 feet deep
- Bedrock at 7 to 12 feet below ground surface

Former Shawnee Country Store
and adjacent residence
3820 Lockport Road
Sanborn, NY



Odessa
includes trace fine
gravel

Canandaigua Soils

- Suitable soil texture for land application
- Very shallow water table and frequent flooding
- Silty clay layer restricts infiltration resulting in perched groundwater
- Found in 100 year floodzone between Bergholz Creek and Sawyer Creek
- No allowable agricultural fields in Wheatfield with Canandaigua soils

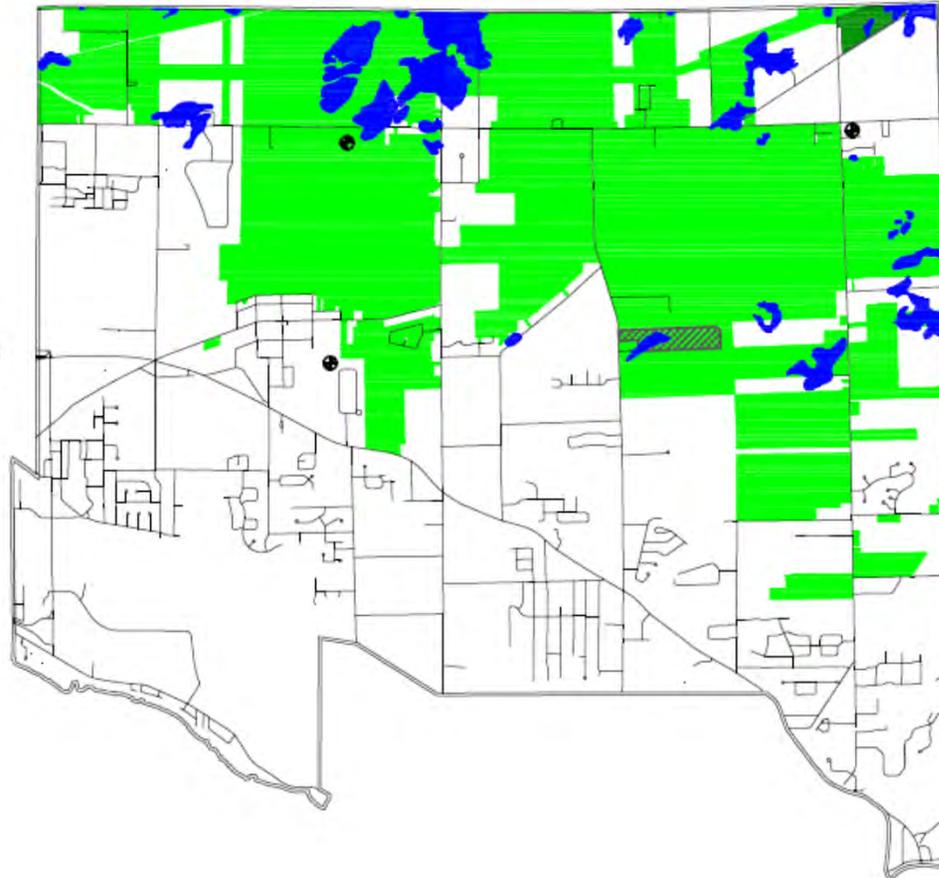
Hilton Soils

- Suitable soil texture for land application
- Mapped in small irregular shapes within Odessa soils in north and east quadrants of Wheatfield
- Once NYSDEC setbacks are applied only 2.8% of the agricultural land (~0.9% of the Town) have a suitable soil type for land application
- This totals about 168 acres that is fragmented across agriculture fields north of Lockport Road and along Nash and Shawnee Roads

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-  RAILROAD

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-  POTENTIALLY ALLOWABLE AREAS FOR LAND APPLICATION
-  AREA PERMITTED FOR LAND APPLICATION
-  SOIL SAMPLE LOCATION



0  7000 feet

PREPARED BY:

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 p: 716.662.0745
 www.matrixtech.com

PREPARED FOR:
 TOWN OF WHEATFIELD

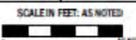
PROJECT MGR:

DESIGNED BY:
 CMC

REVIEWED BY:
 SRC

DRAWN BY:
 WENDEL

REVISION	
BY	DATE
CMC	6/12/14

SCALE IN FEET, AS NOTED


PROJECT NAME / LOCATION:
 TOWN OF WHEATFIELD

TITLE:
 ACCEPTABLE SOILS FOR
 LAND APPLICATION OF
 BIOSOLIDS

DATE:
 MAY 20, 2014

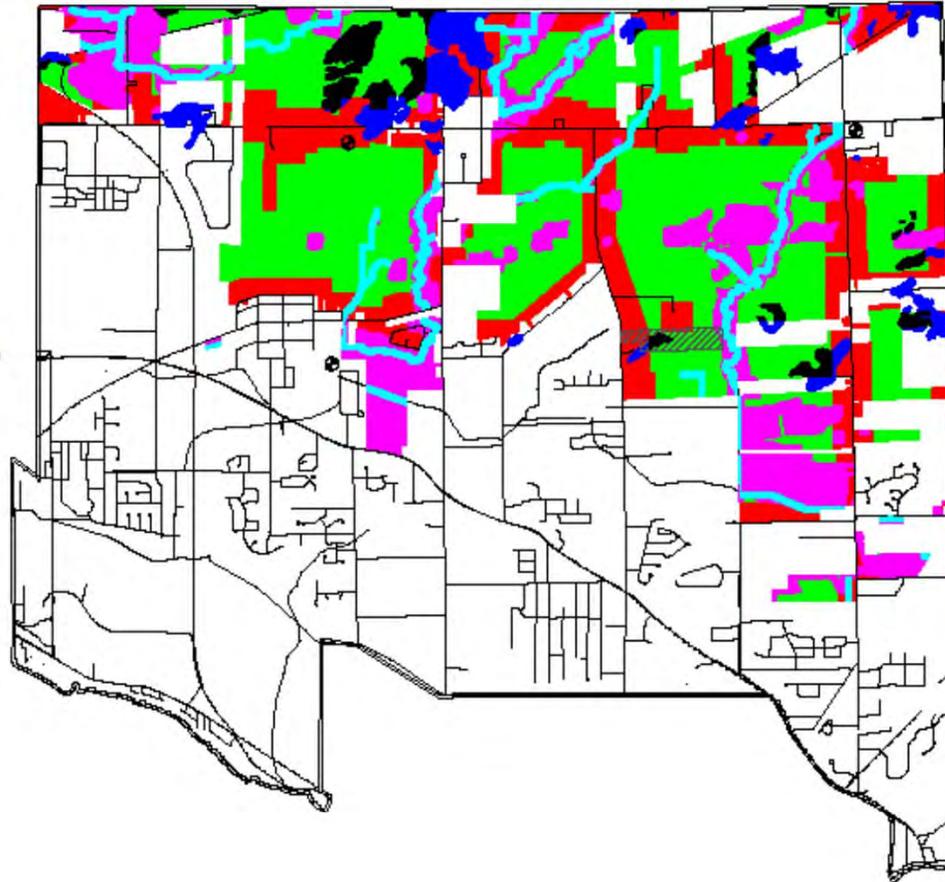
PROJECT NO.:
 14-013

FIGURE:
 5

- AGRICULTURAL DISTRICT #6
- AGRICULTURAL DISTRICT #7
- FEDERAL WETLAND
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0 7000 feet

PREPARED BY:
MATRIX
 ENVIRONMENTAL TECHNOLOGIES INC.
 3750 California Road
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 Orchard Park, NY 14127-0427
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 www.matrixtech.com

PREPARED FOR:
TOWN OF WHEATFIELD

PROJECT NAME:

DESIGNED BY:
CMC

REVIEWED BY:
SRC

DRAWN BY:
WENDEL

REVISION	
BY	DATE
CMC	9/12/14

SCALE IN FEET: AS NOTED

PROJECT NAME / LOCATION:
TOWN OF WHEATFIELD

TITLE:
POTENTIALLY ALLOWABLE AREAS FOR LAND APPLICATION OF BIOSOLIDS

DATE:
MAY 20, 2014

PROJECT NO.:
14-013

FIGURE:
6

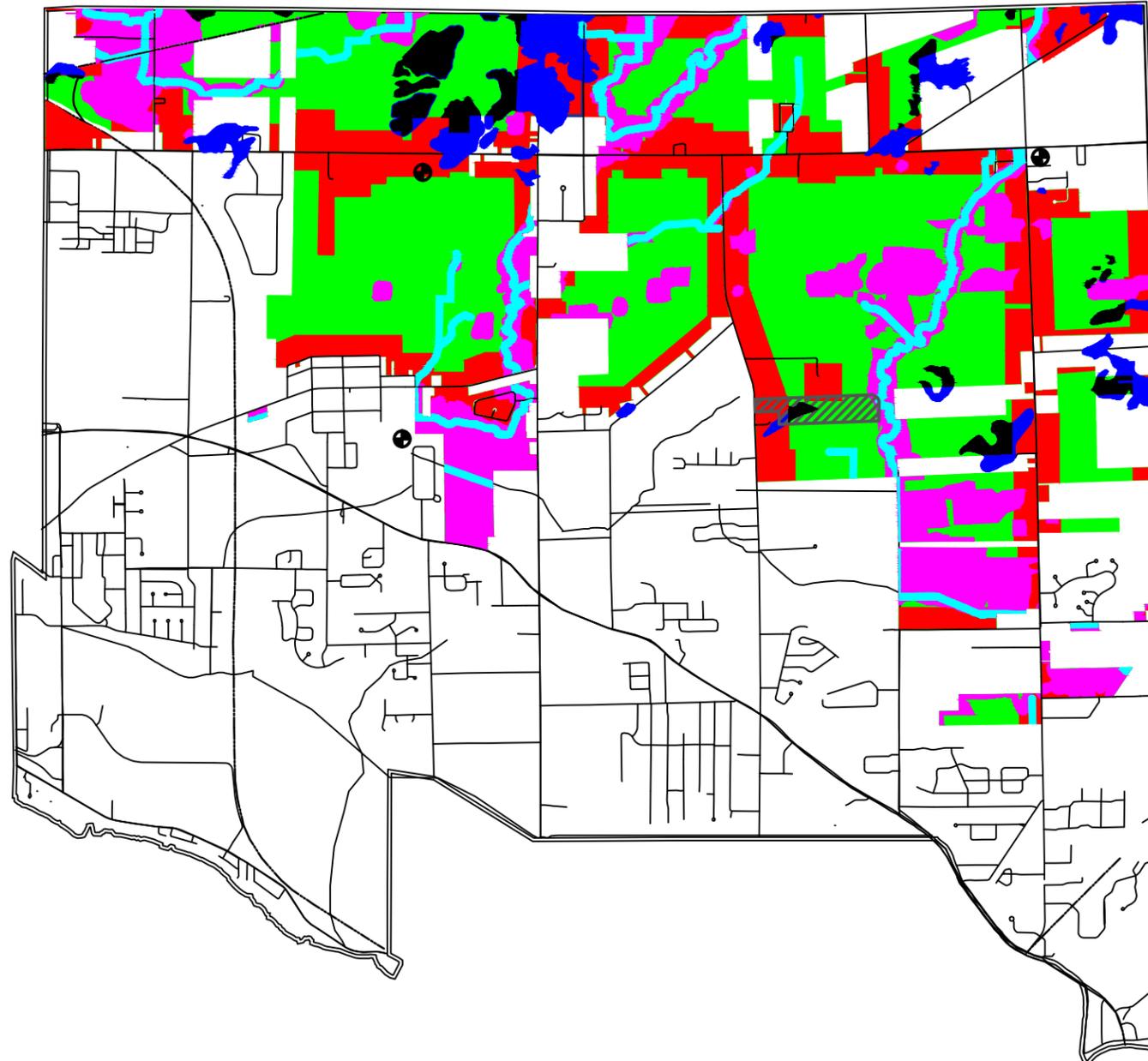
Summary

Over 99% of the land in Wheatfield is not suitable for land application of Class B biosolids based on zoning and EPA and NYSDEC criteria. 168 fragmented acres of agricultural land are potentially suitable for land application. Soil characterization and installation of groundwater monitoring wells are recommended for site specific evaluation to determine if the soil texture, drainage and depth to groundwater meet NYSDEC criteria.

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0  7000 feet

PREPARED BY:	
 ENVIRONMENTAL TECHNOLOGIES INC. 3730 California Road P.O. Box 427 Orchard Park, NY 14127-0427 p:716.662.0745 www.matrixbiotech.com	
PREPARED FOR:	
TOWN OF WHEATFIELD	
PROJECT MGR:	
DESIGNED BY:	CMC
REVIEWED BY:	SRC
DRAWN BY:	WENDEL
REVISION	
BY	DATE
CMC	6/12/14
SCALE IN FEET: AS NOTED	
 AS NOTED	
PROJECT NAME / LOCATION:	
TOWN OF WHEATFIELD	
TITLE:	
POTENTIALLY ALLOWABLE AREAS FOR LAND APPLICATION OF BIOSOLIDS	
DATE:	MAY 20, 2014
PROJECT NO.:	14-013
FIGURE:	6