Hecate Energy
Cider Solar Farm

Exhibit 13: Water Resources and Aquatic Ecology

Cider Solar Farm
Towns of Oakfield and Elba
Genesee County, New York

Matter No. 21-1108

EXHIBIT 13: WATER RESOURCES AND AQUATIC ECOLOGY

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Abbreviations

BMP	best management practice
EPA	Environmental Protection Agency
GIS	Geographic Information System
HDD	horizontal directional drilling
HUC	hydrologic unit code
NRCS	Natural Resources Conservation Service
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Conservation
ORES	Office of Renewable Energy Siting
SPDES	New York State Pollution Discharge Elimination System
SPCC	Spill Prevention, Control and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

Glossary of Terms

Applicant	Hecate Energy Cider Solar LLC
Project	Refers to the proposed Cider Solar Farm, an up to 500-megawatt utility scale solar project that will be comprised of photovoltaic panels, inverters, access driveways, electrical collection lines, point of interconnection/substation, construction staging areas, fencing and plantings, located on private land in the towns of Elba and Oakfield, Genesee County, New York.
Project Area	Refers to the Project Site and surrounding/adjacent land totaling approximately 7,518 acres.
Project Footprint	Refers to the limit of temporary and disturbance within the Project Site caused by the construction and operation of all components of the Project totaling approximately 2,452 acres.
Project Site	Refers to those privately owned parcels under option to lease, purchase, easement or other real property interests with the Applicant in which all Project components will be sited totaling approximately 4,650 acres.
Study Area	Refers to the area evaluated for specific resource identification and/or resource impact assessment. The size of this area is appropriate for the target resource and takes into account the project setting, the significance of resource or impact being identified or evaluated, and the specific survey distances included in Chapter XVIII, Title 19 of NYCRR Part 900. As appropriate, the Study Area for each type of survey or resource impact assessment is provided in the respective sections within the Application.

EXHIBIT 13: WATER RESOURCES AND AQUATIC ECOLOGY

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The content of Exhibit 13 is provided in conformance with Chapter XVIII, Title 19 of the New York Codes, Rules, and Regulations (NYCRR) § 900-2.14, as follows.

a) Groundwater

1) Hydrologic Information

Figure 13-1a *Depth to Groundwater* identifies hydrologic information for the Project Site including depths to high groundwater based on Soil Surveys of Genesee County and the Project's preliminary geotechnical investigation(*Preliminary Geotechnical Engineering Report* [Appendix 10-A of this Application]). Based on data available through the Natural Resources Conservation Service (NRCS) Soil Survey Geographic digital data, annual minimum water table depth around the Project Site ranges from 0 to 6.5 feet (0 to 2 meters) below ground surface (NRCS 2019). Groundwater depth based on New York State Department of Environmental Conservation (NYSDEC) water well records range from 11 to 79 feet below ground surface (NYSDEC 2014). During the geotechnical investigation, groundwater was observed at depths ranging from approximately 0 to 15 feet below the ground surface (Terracon 2020; Appendix 10-A). Based on topography of the Project Area, groundwater and surface waters flow to the northwest. Groundwater conditions vary seasonally, and groundwater level variability is indicated in some surface water features in the Project Site. Surface water features are largely avoided as described in Section (b)(5) below and Exhibit 14: *Wetlands*, Section (e) of this Application. See Exhibit 10: *Geology, Seismology and Soils* of this Application for a summary of groundwater depths observed in the Project Site during the geotechnical investigation.

According to the mapped geology, Project component locations are underlain by clastic sedimentary bedrock. The bedrock units in this region are known as the Upper Silurian Camillus Shale Formation, which are comprised of fine-grained materials such as shale and siltstone (see Appendix 10-A). In Figure 13-1b *Depth to Bedrock*, publicly available data from NRCS shows that the depth to bedrock is greater than 6.6 feet below ground surface throughout the entire Project Site. Water well data for 14 wells in the vicinity of the Project Site, obtained from NYSDEC, shows that depth to bedrock depth ranges from 16 to 79 feet below ground surface (NYSDEC 2014). Based on the results of the Project's preliminary geotechnical investigation, bedrock throughout the site is generally well below the surface, with the shallowest and only bedrock encountered at soil boring location CSSB-2, which was at a depth of approximately 40 feet below the existing surface (Terracon 2020). In no location is bedrock presumed to be exposed at the Project Site.

At the depths estimated by the NRCS soil survey, and as encountered by the geotechnical survey, most construction is not expected to affect groundwater on site. Posts will be embedded to depths between 6 feet and 12 feet. Temporary dewatering may be required during construction if perched groundwater, or inundation is encountered.

2) Groundwater Aquifers and Active Groundwater Supply Wells

In November 2020, the Applicant conducted a private well survey of all residences (both participating and non-participating) within 1,000 feet of the Project Site. This effort involved a direct mailing questionnaire to 502 residences. The questionnaire includes an inquiry into well water location, depth and characteristics of the well, approximate well yield, and water quality. Figure 13-1a shows the location of

identified active groundwater supply wells within 1,000 feet of proposed Project components based on the results the survey. The questionnaire is provided in Appendix 13-A: *Well Survey* of this Application. Of the 502 well surveys mailed, 56 responses (11%) were received as of March 17, 2021. Based upon the results of the survey, there are 33 private groundwater wells within 1,000 feet of the Project Site, as illustrated in Figure 13-1a. Of the 33 private groundwater wells identified by landowners, 3 wells were categorized as not currently in use or abandoned because public water is now available or is in use.

Based on the results within each response, the depths of private wells ranged from approximately 30 feet to 80 feet below grade. Amongst survey responses in which landowners indicated the presence of a well on their property, 94% indicated that water quality was good and clear, while 6% of surveys indicated that water quality was poor due to cloudy conditions. All respondents reported hard water conditions in their well water. Landowners primarily utilized well water for a combination of household uses, as well as outdoor activities such as gardening. The Project components have been sited in a manner that will avoid or minimize impacts to private wells. Further, construction activities are relatively shallow, and activities that would impact groundwater flows are not proposed. Therefore, impacts are not anticipated to occur due to Project construction or operation.

Primary aquifers are defined by the United States Geological Survey (USGS) as “highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems” (NYSDEC 1990). The nearest primary aquifer is a glacial outwash aquifer, associated with Tonawanda Creek in the Batavia Area, approximately 3.8 miles south of the Project (Terry et al. 1984). Principal aquifers, according to NYSDEC, are aquifers known to be highly productive, or whose geology suggests abundant potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time. The Project Area does not overlay any NYSDEC-listed primary or principal aquifers (USGS 2000, 2008). The Project lies between two known carbonate rock principal aquifers; 1.34 acres to the north, and 1.43 to the south of the Project Area.

Under the Sole Source Aquifer Program authorized by Section 1424(e) of the Safe Drinking Water Act of 1974, the Environmental Protection Agency (EPA) defines a sole source aquifer as one that supplies at least 50% of the drinking water consumed in an area overlying the aquifer. EPA guidelines further require that these areas have no reasonable alternative drinking water sources that could physically, legally, and economically supply all those that depend on the aquifer for drinking water. According to the EPA, the nearest sole source aquifer, Cattaraugus Creek basin Aquifer, is located approximately 29 miles south of the project (EPA 2020).

The Applicant proposes to utilize trenchless technologies, including horizontal directional drilling (HDD) in up to 23 locations. This construction method will be used where the Project electrical collection lines would cross selected public roadways or certain wetland or stream resources (see Figure 13-1a). Based on the results of the private well survey, there are two private water supply wells located within 500 feet of proposed HDD locations. One of these wells, located on the north side of Lockport Road, just to the west of the intersection of Lockport Road and Snyder Road, is approximately 380 feet to the west of the proposed HDD operation. The second well, located on the south side of Lockport Rd, just to the east of the intersection of Lockport Road and Graham Road, is approximately 70 feet to the east of the proposed

trenchless/HDD operation. These two private wells are owned by landowners participating in the Project who have entered into lease agreements with the Applicant.

Figure 13-2: *Drinking Water Intakes* shows the locations of drinking water intakes (NYSDEC 2016). None of these water supply intakes are located within 500 feet of HDD operations.

During HDD activities, bore depths at proposed locations will be determined on a case-by-case basis depending on soil types, bedrock composition and the presence of sensitive resources (e.g., water supply wells, surface water resources). Drilling pressure will be monitored continuously for any increase, resulting from tight turns or loss of pressure, which might indicate presence of a seep. Entry and exit bore pits will be enclosed by erosion and sediment control measures to prevent slurry from leaving the designated bore site. The Applicant has prepared an *Inadvertent Return Plan for Horizontal Directional Drilling (HDD)* (Appendix 10-B of this Application).

Solar panels are distributed evenly throughout the Project Footprint. Based on the results of the private well survey, two private water supply wells are located within 200 feet of proposed solar pile-driving locations (see Figure 13-1a). The first well is located approximately 190 feet east from a proposed solar pile-driving location on the north side of Lockport Road, between Fisher Road and Graham Road. The second well is located approximately 170 feet west of a proposed solar pile-driving location on the south side of Lockport Road, between Graham Road and Quaker Hill Road. There are no water supply intakes within 200 feet of solar pile-driving locations (Figure 13-2).

Blasting is not anticipated as part of the Project; therefore, there would be no impact on active water supply wells or water supply intakes located within 1,000 feet of the Project due to blasting.

3) Analysis and Evaluation of Potential Impacts

Permanent impacts to groundwater resources are not anticipated to result from the construction and/or operation of the Project. The potential for minor and or temporary impacts to local water resources will be minimized through the use of best management practices (BMPs), including measures outlined in the *Stormwater Pollution Prevention Plan* (SWPPP) (Appendix 13-C of this Application). Construction of most Project components, including installation of buried electrical collection lines, will typically involve relatively shallow excavations and should not intercept and/or affect groundwater supplies. Solar arrays were sited to avoid known locations of private wells, thereby minimizing the potential for impacts.

On a landscape level, the Project will add a relatively small amount of impervious surface (67 acres of built facilities), resulting from access roads, inverter pads, and at the substation/point-of-interconnection facilities. Beneath the solar arrays and within the overall majority of the Project Site will be pervious land cover (herbaceous/grass) that will allow for similar or improved infiltration of stormwater runoff as occurs under existing site conditions.

During construction, temporary impacts to groundwater could potentially occur through the introduction of pollutants from inadvertent discharges of petroleum or other chemicals used during the construction, operation, or maintenance phases of the Project. These discharges could result from mechanical failures and through spills during the refueling of equipment. To avoid impacts to groundwater from such inadvertent events, the Applicant will implement avoidance and minimization measures outlined in the

Project's *Spill Prevention, Control and Countermeasure Plan* (SPCC) (Appendix 13-D of this Application). Operation of the Project will have a relatively low demand for groundwater.

Publicly available mapping from the USGS delineates an east-west band of carbonate rocks with karst potential across New York State (NYS) and Genesee County, where the Project Site is located (Kappel et al. 2020). The preliminary geotechnical investigation did not identify any karst features within the Project Site. Therefore, impacts related to karst topography are not anticipated. The potential presence of karst topography can be a concern with ground disturbance because these systems are very vulnerable to groundwater pollution. Karst is a distinctive topography that develops in rock capable of being dissolved by surface water or groundwater. This landform is often associated with carbonate rocks (limestone and dolomite) although it can occur in the presence of other highly soluble rocks such as evaporates (gypsum and rock salt). Karst systems have relatively rapid rates of water flow and lack a natural filtration system, which makes them particularly susceptible to groundwater pollution. Ground subsidence (i.e., sinkholes) is a potential geologic hazard associated with karst terrain or where underground mining has occurred. Such hazards are not anticipated to affect the Project or the Project Site.

Little information is readily available about known groundwater contamination in the area surrounding the Project Area. According to the NYSDEC Environmental Site Remediation Database, there are 26 identified environmental remediation sites in Genesee County, primarily clustered around the cities of Batavia and LeRoy (NYSDEC 2020a). The nearest environmental remediation sites to the Project are approximately 2.4 miles to the northeast (Byron Barrel Site), and approximately 1.2 miles to the northwest (RGE – Pavilion) of the Project Site. The groundwater at the Byron Barrel Site was previously contaminated with chlorinated organic compounds. Based on topography, the groundwater flow from the Byron Barrel Site would be northwest, away from the Project Site. The soils at the Byron Barrel site were remediated from 2002 to 2003, and post-remediation samples indicated no detections for contaminants of concern; however, the site remains listed on the State Superfund Program. Historical operations at the RGE – Pavilion site involved using a mixture of coke, oil, and steam to produce gas, and there were three 500-gallon tanks stored on site, which are no longer there. There is no evidence or data on groundwater contamination at the RGE – Pavilion site; however, based on topography, the groundwater flows from that site would be northwest, away from the Project.

Groundwater flow for the 13 sites located within the City of Batavia is generally to the west or northwest following the flow of Tonawanda Creek. Based upon the distance of these remediation sites from the Project and available information concerning groundwater flow direction, groundwater contamination associated with these sites, if any, will not impact groundwater in the Project Footprint as a result of the construction and operation of the Project.

b) Surface Water

1) Maps Identifying Surface Waters

The Study Area for the delineated boundaries of all federal, state, and locally regulated surface waters included an area of 100 feet from the limits of disturbance around all Project components, including solar arrays, inverters, access roads, buried collection lines, fences, the substation and associated Project component clearing activities. Some portions of the Study Area extended onto non-participating

properties that the Applicant did not have permission to access. In those areas, the approximate locations of wetlands and streams were identified through the use of aerial photography and publicly available data, including, but not limited to the United States Fish and Wildlife Service National Wetland Inventory, NYSDEC Geographic Information System (GIS) files available from the NYS GIS Clearing House, USGS topographic GIS files, and the National Hydrography dataset. The Study Area comprised approximately 4,278 acres. Seventy-six streams were field delineated within the Study Area. Field delineated streams included those with perennial, intermittent, and ephemeral flow regimes. The identified streams are all unnamed tributaries, including unnamed tributaries to Oak Orchard Creek. Of the 119 wetlands field delineated within the Study Area, 7 included an open water component. In addition, 10 potential vernal pools were identified within the Study Area. No lakes were identified within the Study Area during delineations. A detailed discussion of wetland and stream delineations for the Project is provided in the *Wetland and Steam Delineation Report and Function and Value Assessment* (Appendix 13-B of this Application).

Figure 13-3: *Delineated Surface Waters* provides the locations of surface waters, including intermittent and ephemeral streams, as well as those wetlands with an open water component, which were identified during field delineations. Figure 13-3 also provides the USGS hydrologic unit code (HUC) names and boundaries for the watersheds where the Project is located and the National Hydrography dataset for this area. The Applicant has provided the NYSDEC and ORES with maps and shapefiles of the delineated streams and wetlands identified within the Study Area and with a tabular cross reference to this data.

2) Waterbody Disturbance and Crossing

The Project Site is located entirely within the Oak Orchard Creek watershed (HUC 0413000104). Based on field delineations, most of the streams in the Study Area have an ephemeral flow regime or intermittent flow that transitions to perennial flow. The ordinary high water mark width of field delineated streams is variable ranging from an estimated 4 to 40 feet for perennial streams to as little as 1 foot for the smallest ephemeral streams. Channel substrates are variable and include silt, sand, gravel, cobble, and boulder. Many of the streams located in agricultural areas within the Project Site have been altered by historic land use activities.

Characteristics of field delineated streams are summarized in Appendix 13-B. No aquatic invasive species regulated by the NYSDEC pursuant to 6 NYCRR Part 575 were documented during baseline invasive species surveys conducted for the Project Site (see Appendix 13-E: *Invasive Species Baseline Report* of this Application). Information on flow rate, information on biological aquatic resource characteristics (such as species of vertebrates and invertebrates), and information on other characteristics of the surface waters (besides those identified in Appendix 13-B) was not identified in publicly available data.

Stream field delineations have been conducted within the Project Site (Stantec 2021; Appendix 13-B) and supplemented by observations and secondary source review in the area 100 feet from the Project Footprint (the Study Area). A full description of the wetland and waterbody delineation methodology and the results of the surveys can be reviewed in the Wetland and Stream Delineation Report (Appendix 13-B). Available resources, such as the United States Fish and Wildlife Service National Wetland Inventory, NYSDEC data, topographic maps, aerial imagery, and other desktop assessment tools, were reviewed

prior to conducting field surveys. This effort included identification of mapped and unmapped water bodies. Data recorded included Resource ID, top-of-bank width and depth, ordinary high water mark, width and depth, substrate, flow regime, state and federal jurisdiction, NYSDEC class, Waterbody Index Name, stream order (using the Strahler method), and stream name. Table 13-1: *Streams Identified in the Delineation Study Area* summarizes key information for the identified stream segments while the full data collection set may be viewed in Appendix 13-B; the stream locations are shown on both Figures 13-4 and 14-1 (see Exhibit 14).

3) Water Quality Standards

Table 13-1 summarizes the streams identified in the Study Area during on-site stream delineations. In addition to the data collected below, no aquatic invasive species were observed on site during invasive species surveys.

Table 13-1: Streams Identified in the Delineation Study Area

Stream ID	Flow Type[1]	Stream Name	Bankfull Width (feet)	Mapped Length (linear feet)	State Protected Stream	NYSDEC Stream Class[2]	NYSDEC Stream Standard
ST01	EPH	N/A	15	893	No	Class D	None
ST02	EPH	N/A	10	818	No	Class D	None
ST03	EPH	N/A	18	783	No	Class D	None
ST04	PER	UNT to Oak Orchard Creek	35	2256	No	Class C	C
ST05	EPH	UNT to Oak Orchard Creek	12	2014	No	Class C	C
ST06	INT	N/A	8	379	No	Class D	None
ST07	INT	UNT to Oak Orchard Creek	30	3460	No	Class C	C
ST08	PER	UNT to Oak Orchard Creek	40	1523	No	Class C	C
ST09	EPH	UNT to Oak Orchard Creek	12	2236	No	Class D	None
ST10	EPH	UNT to Oak Orchard Creek	6	948	No	Class D	None
ST11	EPH	UNT to Oak Orchard Creek	5	844	No	Class D	None
ST12	EPH	UNT to Oak Orchard Creek	15	1472	No	Class C	C
ST13	EPH	UNT to Oak Orchard Creek	6	660	No	Class D	None
ST14	EPH	UNT to Oak Orchard Creek	10	365	No	Class C	C
ST15	EPH	UNT to Oak Orchard Creek	7	867	No	Class D	None

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Stream ID	Flow Type[1]	Stream Name	Bankfull Width (feet)	Mapped Length (linear feet)	State Protected Stream	NYSDEC Stream Class[2]	NYSDEC Stream Standard
ST16	EPH	UNT to Oak Orchard Creek	8	1192	No	Class C	C
ST17	EPH	N/A	5	499	No	Class D	None
ST18	EPH	N/A	5	187	No	Class D	None
ST19	EPH	N/A	5	453	No	Class D	None
ST20	EPH	N/A	8	87	No	Class D	None
ST21	EPH	N/A	5	540	No	Class D	None
ST22	PER	UNT to Oak Orchard Creek	25	3565	No	Class C	C
ST23	EPH	UNT to Oak Orchard Creek	5	201	No	Class C	C
ST24	PER	UNT to Oak Orchard Creek	25	2417	No	Class C	C
ST25	EPH	UNT to Oak Orchard Creek	5	143	No	Class D	None
ST26	PER	UNT to Oak Orchard Creek	12	265	No	Class C	C
ST27	PER	UNT to Oak Orchard Creek	15	732	No	Class C	C
ST28	EPH	N/A	5	384	No	Class D	None
ST29	EPH	N/A	15	1565	No	Class D	None
ST30	EPH	UNT to Oak Orchard Creek	12	186	No	Class D	None
ST31	EPH	UNT to Oak Orchard Creek	10	2272	No	Class D	None
ST32	INT	UNT to Oak Orchard Creek	25	2483	No	Class C	C
ST33	EPH	UNT to Oak Orchard Creek	5	44	No	Class D	None
ST34	EPH	UNT to Oak Orchard Creek	10	772	No	Class C	C
ST35	INT	N/A	20	1487	No	Class D	None
ST36	PER	UNT to Oak Orchard Creek	12	2132	No	Class C	C
ST37	INT	UNT to Oak Orchard Creek	5	2355	No	Class C	C
ST38	INT	N/A	15	695	No	Class D	None
ST39	PER	UNT to Oak Orchard Creek	9	1141	No	Class C	C
ST40	PER	UNT to Oak Orchard Creek	8	352	No	Class C	C

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Stream ID	Flow Type[1]	Stream Name	Bankfull Width (feet)	Mapped Length (linear feet)	State Protected Stream	NYSDEC Stream Class[2]	NYSDEC Stream Standard
ST41	EPH	UNT to Oak Orchard Creek	6	30	No	Class D	None
ST42	PER	UNT to Oak Orchard Creek	9	608	No	Class C	C
ST43	PER	UNT to Oak Orchard Creek	8	62	No	Class C	C
ST44	EPH	UNT to Oak Orchard Creek	4	1609	No	Class C	C
ST45	EPH	UNT to Oak Orchard Creek	6.5	2167	No	Class C	C
ST46	EPH	UNT to Oak Orchard Creek	4	521	No	Class D	None
ST47	PER	UNT to Oak Orchard Creek	6	826	No	Class C	C
ST48	INT	UNT to Oak Orchard Creek	20	990	No	Class C	C
ST49	PER	UNT to Oak Orchard Creek	6	1162	No	Class C	C
ST50	EPH	UNT to Oak Orchard Creek	3	32	No	Class D	None
ST51	INT	UNT to Oak Orchard Creek	6	35	No	Class D	None
ST52	EPH	N/A	5	282	No	Class D	None
ST53	EPH	UNT to Oak Orchard Creek	4	755	No	Class C	C
ST54	PER	UNT to Oak Orchard Creek	8	849	No	Class C	C
ST55	PER	UNT to Oak Orchard Creek	7	35	No	Class C	C
ST56	EPH	UNT to Oak Orchard Creek	5	269	No	Class C	C
ST57	PER	N/A	6	780	No	Class C	C
ST58	EPH	N/A	5	965	No	Class D	None
ST59	PER	UNT to Oak Orchard Creek	4	869	No	Class C	C
ST60	EPH	UNT to Oak Orchard Creek	4	377	No	Class D	None
ST61	EPH	UNT to Oak Orchard Creek	5	1256	No	Class C	C
ST62	EPH	UNT to Oak Orchard Creek	4	184	No	Class D	None

Stream ID	Flow Type[1]	Stream Name	Bankfull Width (feet)	Mapped Length (linear feet)	State Protected Stream	NYSDEC Stream Class[2]	NYSDEC Stream Standard
ST63	INT	UNT to Oak Orchard Creek	15	1767	No	Class C	C
ST64	PER	UNT to Oak Orchard Creek	15	648	No	Class C	C
ST65	EPH	UNT to Oak Orchard Creek	12	457	No	Class D	None
ST66	EPH	N/A	10	580	No	Class D	None
ST67	EPH	N/A	10	1375	No	Class D	None
ST68	EPH	UNT to Oak Orchard Creek	7	1135	No	Class C	C
ST69	EPH	UNT to Oak Orchard Creek	20	166	No	Class C	C
ST70	EPH	UNT to Oak Orchard Creek	10	1968	No	Class D	None
ST71	EPH	UNT to Oak Orchard Creek	10	808	No	Class C	C
ST72	EPH	N/A	5	173	No	Class D	None
ST73	EPH	N/A	1	43	No	Class D	None
ST74	EPH	N/A	2	99	No	Class D	None
ST75	PER	UNT to Oak Orchard Creek	40	1,315	No	Class C	C
ST76	INT	N/A	2	31	No	Class D	None

Source: NYSDEC. 2020b. NYSDEC Environmental Resource Mapper. http://www.dec.ny.gov/gis/erm/

[1]Flow regimes were preliminarily classified as perennial (PER), intermittent (INT), or ephemeral (EPH) based on qualitative observations of instream hydrology indicators at the time of observation and geomorphic traits.

[2]Per NYSDEC regulations (6 NYCRR § 811.4), perennial streams not appearing on NYSDEC stream maps take on the classification into which they directly flow. Intermittent and ephemeral streams not appearing on NYSDEC stream maps are assigned to class D.

Key: UNT = unnamed tributary

4) Surface Water Drinking-Water Supply

There are five drinking water intakes within 1 mile of the Project Site (NYSDEC 2016). Four of these are groundwater intakes associated with agricultural operations (Lamb Farms, Torrey Farms, Oak Orchard Dairy, and Patsy Vigneri and Sons). The Village of Elba also has a groundwater drinking water intake within 1 mile of the Project Site (see Figure 13-3). The Oak Orchard Dairy drinking water intake is located just to the north of the Project Site. The other four drinking water intakes are to the south, and upstream, of the Project Site.

As outlined in Section(b)(5), below, the Applicant has identified practicable measures to avoid, minimize, and mitigate potential impacts to surface waters, which will protect downstream surface water drinking supply intakes.

5) Identification and Evaluation of Avoidance Measures

Pursuant to 19 NYCRR § 1.3(f), ORES determined that there are no NYS protected streams within the Study Area; therefore, the Project will not impact NYS protected waterbodies. Project components will be sited to avoid temporary or permanent impacts to non-jurisdictional and unprotected waterbodies to the maximum extent practicable. Certain construction activities have potential to result in direct and/or indirect impacts to surface waters. These activities include the installation of access roads, upgrading of existing farm lanes, and the installation of buried electrical collection lines. Impacts related to the construction of access road and electrical collection line crossings will be minimized by utilizing existing crossings and by crossing at narrow wetland and waterbody locations where feasible. In addition, implementation of the BMPs in the SPCC Plan and SWPPP will avoid or minimize sedimentation and pollution related impacts to the maximum extent practicable.

Indirect impacts to surface waters can result from the removal of existing vegetation buffers or changes in the volume and quality of surface water runoff. These types of impacts can affect surface water quality. Removal of woody vegetation that shades surface waters can cause a temporary or permanent change in the water temperature, which can influence both water quality and aquatic habitat. Surface water runoff that carries sediment or pollutants also can affect water quality and aquatic habitats.

The Applicant evaluated potential temporary and permanent impacts to surface waters resulting from the construction and operation of the Project based on the Project design as shown in Appendix 5-A: Civil Design Drawings (Exhibit 5: *Design Drawings* of this Application). Construction of the Project is anticipated to result in approximately 543 linear feet of temporary disturbance and 196 linear feet of permanent disturbance to waterbodies identified during on-site wetland and stream delineation. Impacts to wetlands and streams have been largely avoided to the maximum extent practicable through the siting of components away from wetlands and waterbodies. In select locations, the Applicant is proposing the use of trenchless crossing methods, including HDD, to avoid impacts to wetlands and streams and to reduce the need to clear trees. No solar panels have been sited in streams. Finally, where a proposed access road crossing could impact a delineated stream, the Applicant sited stream crossings in locations of existing access ways, or along narrow sections of stream channels to reduce the impact. Table 13-2 lists a summary of the identified potential impacts to waterbodies.

Project components will cross 32 delineated streams resulting in temporary and permanent impacts. Stream impacts and construction methods for each type of impact are outlined in Table 13-2: *Impacts to Streams Crossed by Project Components*. Figure 13-2 shows the location of each stream crossing. There are no NYS protected streams within the Study Area; therefore, there will be no impacts to NYS protected streams. Nevertheless, the Applicant assessed the impacts to non-jurisdictional stream crossings and evaluated minimization efforts for each component of the Project:

Buried electrical collection lines – Stream crossings via open trenching are proposed across seven unprotected streams as outlined below in Table 13-2. Due to existing hydrological and vegetative conditions of the identified streams, trenching has been selected as the preferred construction measure. Protection of waters BMPs to maintain flows (e.g., coffer dam/pump around) will be used upstream and downstream of crossing locations, if water is flowing. Trenching buried electrical collection across streams could result in minor, short-term impacts such as temporary localized increase in turbidity levels and

downstream sediment deposition. Suspended sediments also would alter the chemical and physical characteristics of the water column (e.g., color and clarity) on a short-term basis. However, no foreign sediments would be introduced as all dredged or fill material would consist of onsite sediments. Motile organisms may avoid these areas, but sessile and planktonic organisms may be adversely affected. Overall, these impacts are short-term in nature and stormwater and erosion control measures will be implemented, as appropriate, as outlined in the SWPPP. Typical details of BMPs associated with proposed trenching techniques are provided in Appendix 5-A and Appendix 13-C, and reflect such measures as silt fencing, check dams, erosion control blankets, and geotextile filter bags.

Streams ST04, ST32, ST39, ST45, ST46, ST61, ST74, and ST75 are proposed to be crossed using HDD; therefore, these features would not be directly impacted by construction. An *Inadvertent Return Plan for Horizontal Directional Drilling (HDD)* (Appendix 10-B) has been prepared to address the procedures for the prevention, containment, and cleanup of drilling slurry that is associated with the HDD process.

Access road culverts – Five stream segments (ST05, ST09, ST31, ST37, and ST45) are proposed to be impacted for access road crossings, as shown in Table 13-2. As noted above, ST05, ST09, ST31, ST45 are regularly maintained and/or disturbed by land management activities. These crossings have been sited so they are perpendicular to water flow and at the narrowest points on these streams, where design allowed. Grading around streams has been minimized to the extent that the impacts will be limited to the work directly involved in installing road crossings. Culvert sizing has been carefully designed to allow for water flow that will prevent upstream flooding; sizing calculations are provided in Appendix 5-A. Details on the culverts are provided in Appendix 5-A. BMPs potentially associated with proposed culvert installations are discussed in Appendix 13-C and Appendix 5-A, including such control measures as silt fencing, check dams, riprap outlet protection, and geotextile filter bags.

Fence installation – Impacts resulting from fence installation are indicated to 16 stream segments (ST01, ST02, ST03, ST06, ST07, ST12, ST09, ST16, ST22, ST24, ST25, ST35, ST36, ST37, ST45, ST50), as shown in Table 13-2. Impacts resulting from fence installation will include clearing of vegetation for fence installation, and potential placement of fence posts in waterways. Fences will span over the stream segments, to the maximum extent practicable, with ground disturbance reserved to those areas outside of the bed and bank. Sediment control measures, such as silt fencing, check dams, erosion control blankets, and geotextile filter bags will be utilized to reduce or prevent sediment from entering stream segments during fence installation.

Wherever work will occur in proximity to wetlands or streams, sediment control barriers will be used and maintained to prevent indirect impact from occurring to such resources. Typical details of BMPs are provided in Appendix 5-A and Appendix 13-C, and would include such control measures as silt fencing, check dams, erosion control blankets, geotextile filter bags, and vegetative filter strips. Care will be taken to prevent changes to in-stream morphology and structure. Stabilization measures and seeding will be used to ensure stability prior to removing controls. The sediment barriers used around work areas, and the stabilization of disturbed areas prior to removal, will also reduce the potential for downstream turbidity and temporary habitat degradation. The overall potential for downstream turbidity and temporary habitat degradation is low due to the Project's design, which avoided the majority of delineated streams.

Table 13-2 outlines the quantity and types of impacts proposed at each delineated stream resource identified within the Project Footprint. There are no NYS protected streams within the Study Area; therefore, there will be no impacts to NYS protected waterbodies. To the extent practicable, directs and indirect impacts to non-protected surface waters have been avoided. The Project has been designed to avoid impacts to known and mapped surface waters, as well as unmapped surface waters, to the extent practicable. Most Project components, particularly structures such as solar piles, the substation, and fence lines have been sited to avoid direct filling of surface waters.

EXHIBIT 13: WATER RESOURCES AND AQUATIC ECOLOGY

Matter No. 21-1108

Table 13-2: Impacts to Streams Crossed by Project Components

Stream ID	Bank Width (feet)	Stream Class & Standard	Temporary Impacts[1]		Permanent Impacts[2]		Facilities Crossing Resource	Crossing/Avoidance Methodology
			Square Feet	Linear Feet	Square Feet	Linear Feet		
ST01	15	D	51.76	3.45	15.01	1.00	Fence	Span if possible
ST02	10	D	156.59	15.66	10.00	1.00	Fence	Span if possible
ST03	18	D			18.01	1.00	Fence	Span if possible
ST04	35	C					Collection	HDD
ST05	12	C			362.15	30.18	Road/Collection	Open trench for collection/culvert for road
ST06	8	D			8.35	1.04	Fence	Span if possible
ST07	30	C	451.20	15.04	60.00	2.00	Fence	Span if possible
ST09	12	D	235.20	19.60	372.00	31.00	Fence/Road/Collection	Open Trench for collection/Culvert for road/Span for fence
ST12	15	C	225.09	15.01	15.00	1.00	Fence	Span if possible
ST15	7	D	108.14	15.45	7.21	1.03	Fence	Span if possible
ST16	8	C	125.62	15.70	8.40	1.05	Fence	Span if possible
ST22	25	D			35.00	1.40	Fence	Open trench for gen-tie/Span for fence, if possible
ST24	25	C			25.00	1.00	Fence	Span if possible
ST25	5	D					Fence	Span if possible
ST29	15	D			15.60	1.04	Fence	Fence
ST31	10	D			400.85	40.09	Road	Culvert
ST32	25	C	557.11	22.28			Collection	HDD for one crossing/open trench for other crossing
ST34	10	C	973.72	97.37			Collection	Trench
ST35	20	D	675.46	33.77	45.00	2.25	Fence	Span if possible
ST36	12	C	180.00	15.00	24.24	2.02	Fence	Span if possible
ST37	5	C	153.00	30.60	164.16	32.83	Fence/Road/Collection	Span fence/Open trench collection/culvert for road
ST38	15	D	150.04	10.00			Collection	Open trench
ST39	9	D					Collection	HDD
ST45	6.5	C	966.07	148.63	271.33	41.74	Fence/Road/Collection	Open trench for collection/Span for fence/Culvert for road
ST46	4	D					Collection	HDD
ST48	20	C	350.37	17.52	20.20	1.01	Fence	Span if possible
ST50	3	D	84.90	28.30	6.60	2.20	Fence	Span if possible
ST61	5	C					Collection	HDD
ST67	10	D	400.30	40.03			Collection	Open trench
ST74	2	D					Collection	HDD
ST75	40	C					Collection	HDD
		Total	5844.58	543.42	1884.10	195.88		

[1] Temporary impacts include electrical collection trenches and workspaces: approximately 10 feet wide per feeder line; 15-foot-wide temporary fencing workspace

[2] Permanent impacts include road installation (including culverts): 30-foot-wide corridor across streams; fencing – 1-foot- wide permanent impact

6) Explanation of Minimization Efforts

There are no NYS protected waterbodies in the Study Area; therefore, there will be no impacts to NYS protected streams due to construction or operation of the Project. Measures to minimize impacts to unprotected waterbodies and all delineated streams in the Study Area are described in Part 13(b)(5), above.

7) Stream Restoration and Mitigation Plan

There are no NYS protected waterbodies in the Study Area; therefore, there will be no impacts to NYS protected streams due to construction or operation of the Project. Accordingly, pursuant to 19 NYCRR § 900-10.2(f)(3), the Applicant need not prepare a mitigation plan.

c) Stormwater

1) Stormwater Pollution Prevention Plan

A SWPPP has been prepared in accordance with the applicable State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity and the NYS Standards and Specifications for Erosion and Sediment Control. A SWPPP is included in Appendix 13-C. Prior to commencement of construction activities, the Applicant will submit to NYSDEC a Notice of Intent for Stormwater Discharges from Construction Activity and will seek coverage under the SPDES General Permit issued in January 2020 and effective on January 29, 2020, as modified (GP-0-20-001). This authorization is subject to review by NYSDEC and is independent of the 94-c Application Process. The SWPPP has been prepared in accordance with the NYS Standards and Specifications for Erosion and Sediment Control and the New York State Stormwater Management Design Manual (NYSDEC 2015). The SWPPP describes in general terms the sediment control practices that will be implemented during construction activities, and the stormwater management practices that will be used to reduce pollutants in stormwater discharges after Facility construction has been completed. The SWPPP includes:

- Anticipated stormwater management practices, including temporary and permanent erosion and sediment control measures (vegetative and structural).
- Anticipated construction activities, including a preliminary construction phasing schedule and preliminary definition of disturbance areas.
- Site waste management and spill control measures.
- Proposed site inspection and maintenance measures, including construction site inspection and construction site record keeping.
- Conditions that will allow for the termination of the permit coverage.

The total estimated land disturbance area reflected in the SWPPP is 2,452 acres (the total limit of disturbance, which includes both the permanent development area plus temporary workspace for the Project Footprint).

The goal of the measures outlined in the SWPPP are to maintain existing drainage patterns as much as possible, control increases in the rate of stormwater runoff so as not to adversely alter downstream

conditions and minimize stormwater quality affects. Typical erosion and drainage practices anticipated to be used during construction of the Facility include perimeter silt fencing, storage of the minimal necessary chemicals in central location(s) with appropriate controls and containment, storm pipe, silt fence, temporary check dams, dry swales, slope protection, inlet/outlet protection, timber mats, vegetation protection, stabilized construction entrances, and vegetation filter strips. Due to the minimal grading required, the risk of erosion and sedimentation is expected to be limited. Temporary measures will remain in place until areas are permanently stabilized. Once construction is complete and verified, a Notice of Termination will be filed for the General Permit coverage.

The Applicant intends to request written authorization from the NYSDEC to allow the disturbance of greater than 5 acres at one time. Accordingly, construction-phase SWPPP inspections will be required at least twice every 7 calendar days.

The proposed Project is not located with a Municipal Separate Storm Sewer System (MS4). Therefore, the Project is not subject to state or federal regulations regarding MS4s.

2) Post-Construction Stormwater Management

This Project will have a negligible hydrologic effect on the existing overall watershed and sub-watersheds. In fact, by converting the land from row crop to meadow, the project will create a substantial benefit in reducing peak discharge rates across all design storm events. The Applicant will utilize post-construction stormwater management practices prepared in accordance with the New York State Design Manual (NYSDEC 2015). Specifically, the ground surface will be restored mainly to pervious surface conditions. The earth-grading work associated with the Project will be performed with the intention of retaining the current general surface drainage patterns. The Applicant proposes to use gravel drives for site access and for the substation area. Gravel is considered “impervious area” by the NYSDEC (NYSDEC 2015). The proposed gravel drives could result in potentially higher runoff flow rates under construction that currently exist at the Project Site. The SWPPP utilizes dry swales and vegetated filter strips to accommodate stormwater quality volumes generated by gravel drives and the substation area.

The proposed dry swales are considered a green infrastructure technique, which can provide water quality, quantity, and runoff reduction treatment through infiltration, evapotranspiration, and/or reuse. The dry swales are vegetated channels explicitly designed and constructed to capture and treat stormwater runoff within dry cells formed by check dams. Pollutants carried by surface runoff can degrade the water quality of downstream receiving waters. Runoff percolates through the soil layer, which filters out sediment particles.

The dry swales will be sized to completely capture and infiltrate runoff from the proposed facility gravel drives up to and including the 100-year storm event. The proposed drives will be pitched to a roadside vegetated ditch. The downstream end of the ditch will have the permeable soil layer in the bottom for the length required to provide the necessary water quality and quantity treatment volume. A stone lined emergency overflow weir will be provided at the downstream end of each swale. Therefore, runoff from these new impervious areas will be treated for water quality and runoff reduction, as well as reducing downstream flow rates for the 1-year, 10-year, and 100-year storm events.

The substation area will also be covered by gravel. Water quality for runoff from the proposed substation area will be treated by a 50-foot-wide vegetated filter strip. Runoff will sheet flow from the gravel pad to the filter strip where vegetation will remove pollutants prior to downstream discharge off-site. There will potentially be greater than a 75-foot length of the stone pad draining to the filter strip, but the surface is relatively flat gravel (instead of asphalt) and the strip will be able to accommodate the contributing area. In addition, the area downstream of the filter strip will also be vegetated.

Additional details and analysis are provided in the SWPPP (Appendix 13-C).

d) Chemical and Petroleum Bulk Storage

1) Spill Prevention, Control and Countermeasure Plan

The SPCC Plan was prepared in accordance with the requirements of USEPA regulations contained in Title 40 Code of Federal Regulations Part 112. The SPCC Plan includes information about oil storage and handling, spill prevention, spill response procedures, spill reporting, facility inspection and record keeping, personnel training, testing requirements, and security.

Spill containment will be located at the substation transformers. The volume of oil in the larger power transformers located at the substations is expected to trigger the requirement for an SPCC and spill containment plan. The only other large storage on site is at the location of the inverter-transformers. The quantities of oil in these smaller, medium-voltage transformers are typically insufficient to trigger spill containment requirements. Due to the large physical space between the substation and inverter transformers, a spill or fire at one would not cause a spill or fire at another. As such, in accordance with industry practice for solar projects in NYS, the inverter transformers are considered to be separate sites and analyzed separately for purposes of an SPCC.

2) Hazardous Substance Compliance

It is not anticipated that the Facility will require on-site storage or disposal of large volumes of any substances in tanks subject to regulation under NYS chemical and petroleum bulk storage programs (e.g., fuel oil, petroleum) set forth at 6 NYCRR Parts 596-599 and 613. If circumstances change and construction, operation, or maintenance activities at the Facility require petroleum or other hazardous chemicals to be stored on-site in tanks, the Applicant will comply with all applicable state laws and guidelines.

3) Chemical Compliance with Local Regulations

There are no substantive provisions of local law applicable to the storage of ammonia, fuel oil, wastewater, other chemicals, petroleum, or hazardous substances on the Project Site. Outside of established temporary laydown areas, no construction, operational, or maintenance activities at the Project are anticipated to require petroleum or other hazardous chemicals to be stored permanently on-site. Should any be required, the Applicant will handle, store, and dispose of any such substances in compliance with all applicable state and federal regulations and guidelines. During construction and operations, small quantities of fuel and solvents may be on site for vehicles and cleaning. All fuel will be stored within the fuel tanks of the vehicles, or in centralized temporary storage location. No separate

permanent fuel storage is anticipated. If solvents or paints are required for maintenance, they will be in containers of less than 10 gallons and stored inside the existing building planned for spare parts.

e) Aquatic Species and Invasive Species

1) Potential Impacts to Critical and Sensitive Habitats and Aquatic Resources

No threatened, endangered, or otherwise protected aquatic species were identified or expected to occur within the Project Area. Therefore, no impacts to threatened or endangered aquatic species are anticipated to result from construction or operation of the Project.

Potential impacts to wetlands are addressed in Exhibit 14 and impacts to surface waters are provided in Table 13-2. Because biological aquatic resources require aquatic habitats, impacts to surface water will impact biological aquatic resources associated with these surface waters. However, the Project will impact a relatively small percentage (739 linear feet of permanent and temporary impact, less than 0.01%) of the nearly 14 miles of stream resources delineated within the Study Area and will have little impact on those few wetlands with a surface water component. There will be no direct impact to potential vernal pools identified within the Study Area and, therefore, the Project will not impact breeding habitat for vernal pool-associated amphibians or habitat for aquatic species that may require vernal pools. Exhibit 12: *NYS Threatened or Endangered Species* of this Application addresses species listed as Threatened and Endangered, state listed species of special concern as described in 6 NYCRR Part 182, and species of greatest conservation need.

2) Avoidance Measures

Exhibit 14 provides a discussion and evaluation of avoidance and minimization measures related to impacts on aquatic biological resources associated with wetlands. To avoid temporary impacts due to collection line installation and permanent impacts due to Palustrine Forested wetland conversion, HDD construction method will be used at the following seven proposed wetland crossings: ST04, ST32, ST39, ST46, ST61, ST74, and ST75. Access roads and collection line crossing have been collocated to the extent feasible, to reduce impacts. Vegetation clearing and grading has also been minimized to the maximum extent practicable. The Applicant is also implementing “Restricted Activity Areas” and “No Equipment Access Areas” to prohibit unpermitted vehicle access in wetlands, and to prohibit storage of petroleum products and refueling near wetlands and streams.

Part 13(b)(5) above includes methods to avoid and minimize impacts to surface waters and associated biological aquatic species. Section (c) discusses measures designed to minimize the impact of stormwater discharges on surface water bodies and, by extension, the aquatic species they contain.

Stantec conducted an invasive species baseline survey in July and September 2020 and January 2021 and documented 510 occurrences of 14 different invasive species (Appendix 13-E). Table 13-3: *Invasive Species Observed During Baseline Surveys in 2020 and 2021* provides a summary of invasive species observed on site during surveys. Invasive species were found throughout the Study Area but were especially common along edge habitat, including hedge rows, public roads, existing woods roads, and/or farm roads. No aquatic invasive species were observed during surveys. A project-specific Invasive Species Control and Management Plan (Appendix B of Appendix 13-E of this Application) has been

prepared to prevent the spread of invasive species during construction and to control invasive populations following construction and during operation of the Project (see Appendix 13-E).

Table 13-3: Invasive Species Observed During Baseline Surveys in 2020 and 2021

Common Name	Scientific Name
garlic mustard	*Alliaria petiolata*
mugwort	*Artemisia vulgaris*
Japanese barberry	*Berberis thunbergii*
Canada thistle	*Cirsium arvense*
cut-leaf teasel	*Dipsacus laciniatus*
autumn olive	*Eleagnus umbellata*
Morrow's honeysuckle	*Lonicera morrowii*
Tatarian honeysuckle	*Lonicera tatarica*
purple loosestrife	*Lythrum salicaria*
Japanese stilt-grass	*Microstegium vimineum*
Japanese knotweed	*Reynoutria japonica*
reed canary grass	*Phalaris arundinacea*
common reed	*Phragmites australis*
kudzu	*Pueraria montana*
common buckthorn	*Rhamnus cathartica*
black locust	*Robinia pseudoacacia*
multiflora rose	*Rosa multiflora*

The NYSDEC water quality classification of the streams proposed to be impacted is C or D, with no trout designation. Using BMPs outlined in the SWPPP prepared for the Project, it is unlikely that construction of the Project will have measurable significant effect on the water quality standards of the streams affected. These measures collectively will result in compliance with applicable water quality standards pursuant to 6 NYCRR Part 703.

f) Water Quality Certification

1) Water Quality Certification Request

In accordance with Section 401 of the Clean Water Act, if construction or operation of a proposed major renewable energy facility would result in any discharge into the navigable water of the United States and require a federal license or permit, the Applicant shall request and, prior to commencing construction, obtain a Water Quality Certification indicating that the proposed activity will be in compliance with water quality standards, as set forth in 6 NYCRR § 608.9. Construction and operation of the Project shall at all times be in conformance with New York State Water Quality Standards (6 NYCRR § 608.9) necessary and appropriate for compliance with Section 401 Water Quality Certification.

As of the submittal of this Application, the Applicant has not yet filed the Joint Application for Permit to the United States Army Corps of Engineers (USACE). Pursuant to 19 NYCRR §§ 900-2.14(f), 1.4(b)(1), the Applicant will provide ORES a copy of the Joint Application for Permit upon completion, currently anticipated on or about June 15, 2021, and request coverage for Water Quality Certification from ORES at that time. The request for a Water Quality Certification will be filed and served and notice of it will be given in the same manner as this Application pursuant to 19 NYCRR § 900-1.6.

2) Copies of Federal Permit Applications Related to the Water Quality Certification

The Project will seek coverage for jurisdictional activities in Waters of the United States authorized by a Nationwide Permit from the USACE pursuant to Section 404 of the Clean Water Act. It is anticipated the Applicant will file a Joint Application for Permit on or around June 15, 2021. The Applicant will provide ORES a copy of the Joint Application for Permit upon completion. Once issued, the Applicant will provide an issued WQC to the USACE.

3) Demonstration of Compliance with 6 NYCRR § 608.9

The Applicant will seek a Water Quality Certificate required by Section 401 of the Federal Water Pollution Control Act. The Applicant will comply with Sections 301-303, 306 and 307 of the Federal Pollution Control Act, as implemented through NYSDEC regulations, to the extent applicable. No in-water construction will commence until such time that a WQC is obtained.

4) United States Army Corps of Engineers Contact Information

The Applicant intends to file a Pre-Construction Notice or otherwise make application to the USACE to seek authorization for regulated activities within Waters of the United States on or around July 15, 2021. The Application will be filed with the Buffalo District of the USACE located at 1776 Niagara Street, Buffalo, New York, 14207, and/or the appropriate field office as directed by the USACE.

5) Plan for Request

The Applicant’s plan for making a request to the USACE is described in Section (f)(4).

EXHIBIT 13: WATER RESOURCES AND AQUATIC ECOLOGY

Matter No. 21-1108

References

Kappel, William M., James E. Reddy, Jonathon C. Root. 2020. Statewide Assessment of Karst Aquifers in New York with an Inventory of Closed-Depression and Focused-Recharge Features

New York State Department of Environmental Conservation (NYSDEC). 2016. NYS Water Withdrawals. Published by 11/28/2016, by Bureau of Water Resource Management. Available at: https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1265#:~:text=NYS%20ITS%20GIS%20Program%20Office&text=ECL%2015%2D1501%20requires%20a,day%20of%20surface%20or%20groundwater. Accessed April 1, 2021.

NYSDEC. 2015. New York State Stormwater Management Design Manual. January. Prepared by: Center for Watershed Protection. Available at: https://www.dec.ny.gov/chemical/29072.html. Accessed November 19, 2020.

NYSDEC. 2014. Water Well Information. Available at: https://www.dec.ny.gov/cfmx/extapps/WaterWell/index.cfm. Accessed November 19, 2020.

NYSDEC. 1990. Division of Water Technical and Operational Guidance Series: Primary and Principal Aquifer Determinations. Available at https://www.dec.ny.gov/docs/water_pdf/togs213.pdf. Accessed November 2020.

NYSDEC. 2020a. Environmental Remediation Database. Available at https://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=1. Accessed November 2020.

NYSDEC. 2020b. Environmental Resources Mapper. Available at: http://www.dec.ny.gov/gis/erm/. Accessed November 2020.

Stantec Consulting Services Inc. (Stantec). 2021. Wetland and Stream Delineation Report and Function and Values Assessment. Submitted November 2020.

Terry. D.B, T.S. Pagano, and A.W. Ingram. 1984. Geohydrology of the glacial-outwash aquifer in the Batavia Area, Tonawanda Creek, Genesee County, New York. Available at: https://pubs.er.usgs.gov/publication/wri854096. Accessed November 19, 2020.

Terracon Consultants-NY, Inc (Terracon). 2020. Preliminary Geotechnical Engineering Report, Cider Solar Site, Genesee County, New York. Prepared December 24, 2020, for Stantec.

United Stated Department of Agriculture Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. Last Modified 7/31/2019. Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed November 19, 2020.

United States Environmental Protection Agency (EPA). 2020. Sole Source Aquifers Interactive Web Viewer. Available at: https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b. Accessed November 19, 2020.

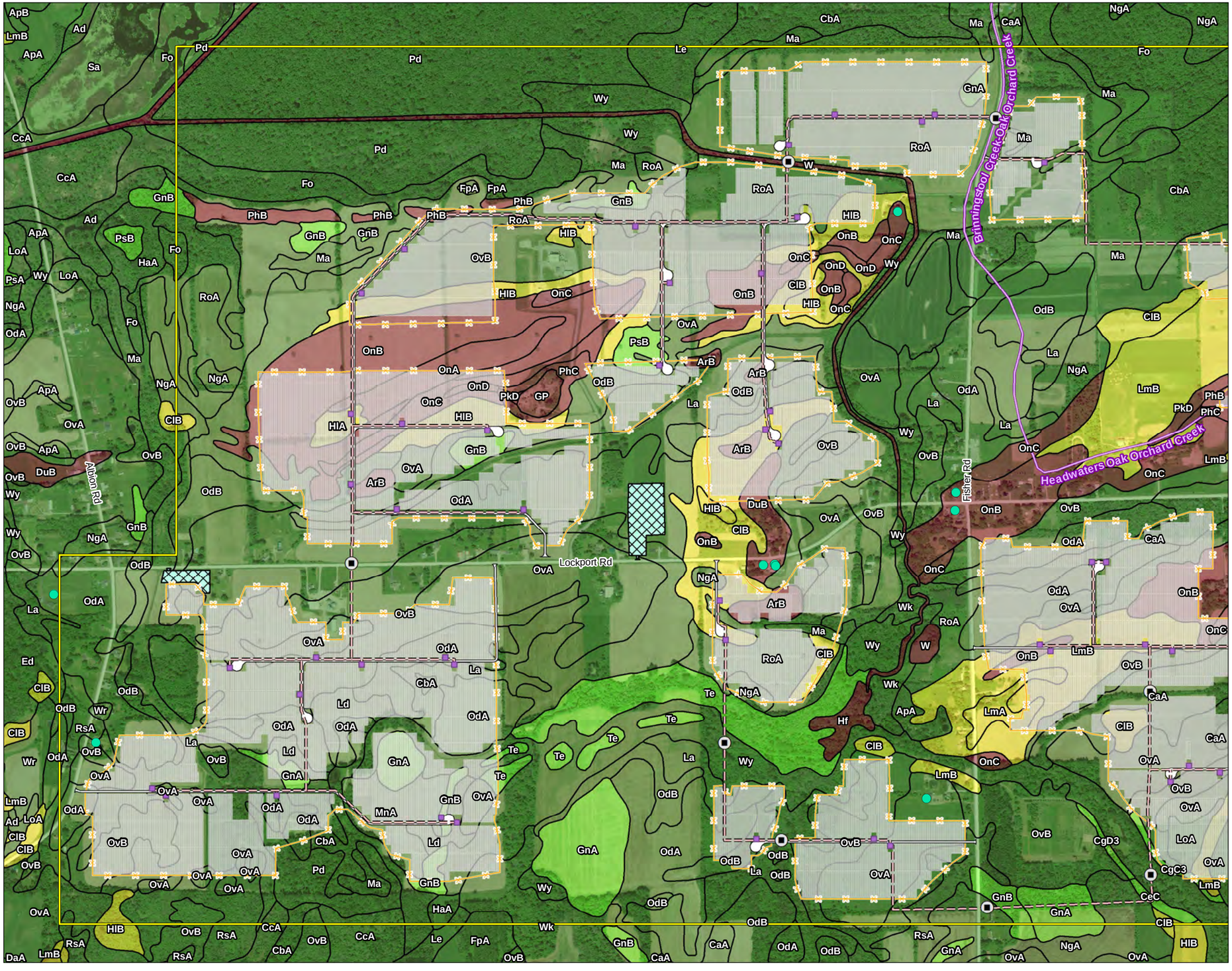
United States Geological Survey (USGS). 2000. Principal Aquifers of the 48 Conterminous United States, Hawaii, Puerto Rico, and the U.S. Virgin Islands. Available at: https://water.usgs.gov/GIS/metadata/usgswrd/XML/aquifers_us.xml#stdorder. Accessed April 1, 2020.

USGS. 2008. Upstate New York Surficial Aquifer Mapping Program. Publication Date: February 8, 2008. Available at: http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1275. Accessed April 1, 2020.

EXHIBIT 13: WATER RESOURCES AND AQUATIC ECOLOGY

Matter No. 21-1108

FIGURES



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Water Table (in)

- 0 - 10 in
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- > 50

*There are no Aquifers within map extent.

N

0 1,000 2,000 Feet

(At original document size of 11x17)
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Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.

Project Location
Town of Oakfield
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REVC

Figure No.
13-1a

Title
Depth to Groundwater
Map 1 of 5

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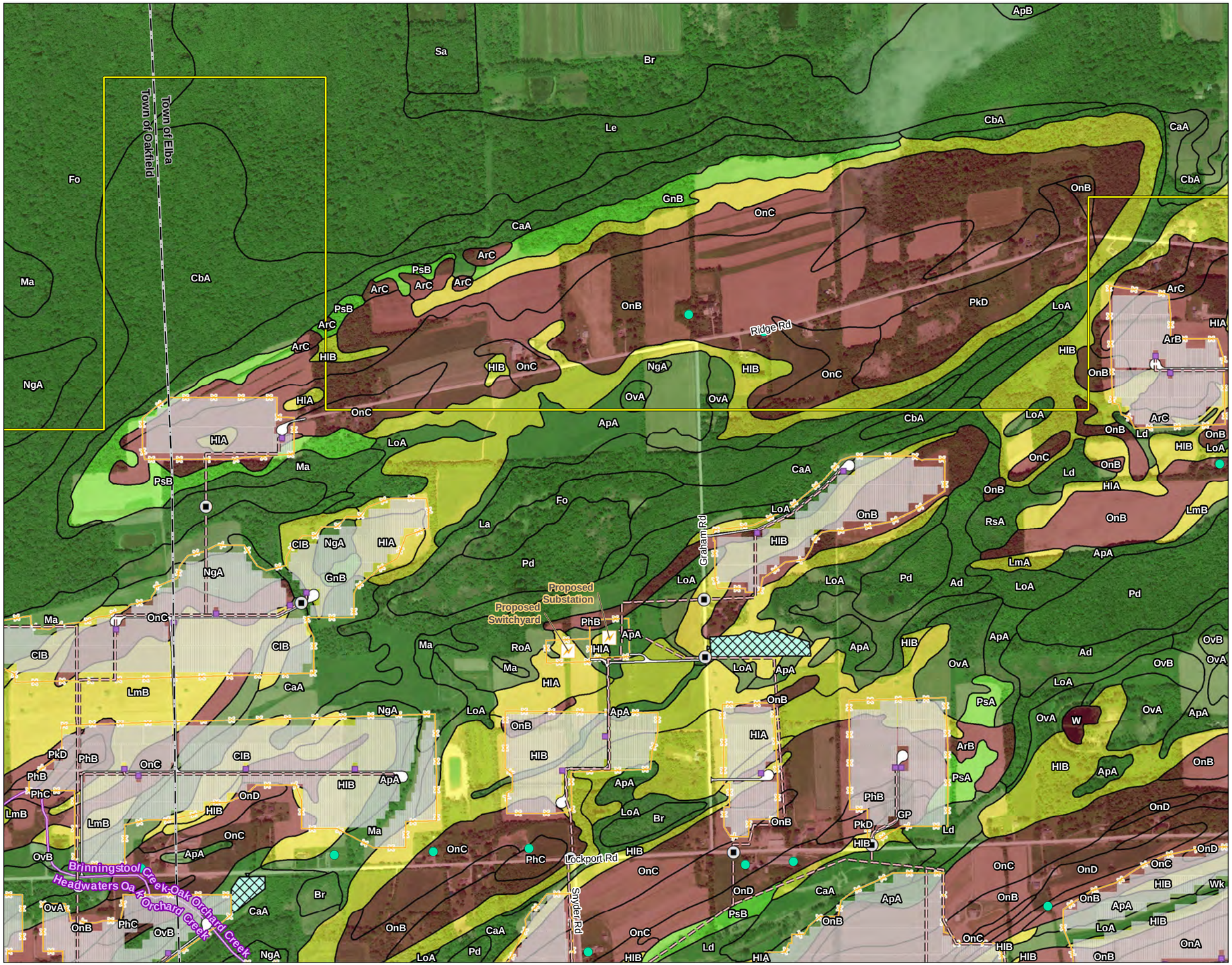

Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
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N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
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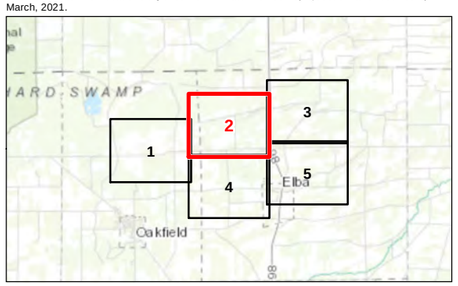

Project Location
Towns of Oakfield & Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

Client/Project
190502038 REVC
Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1a

Title
Depth to Groundwater
Map 2 of 5

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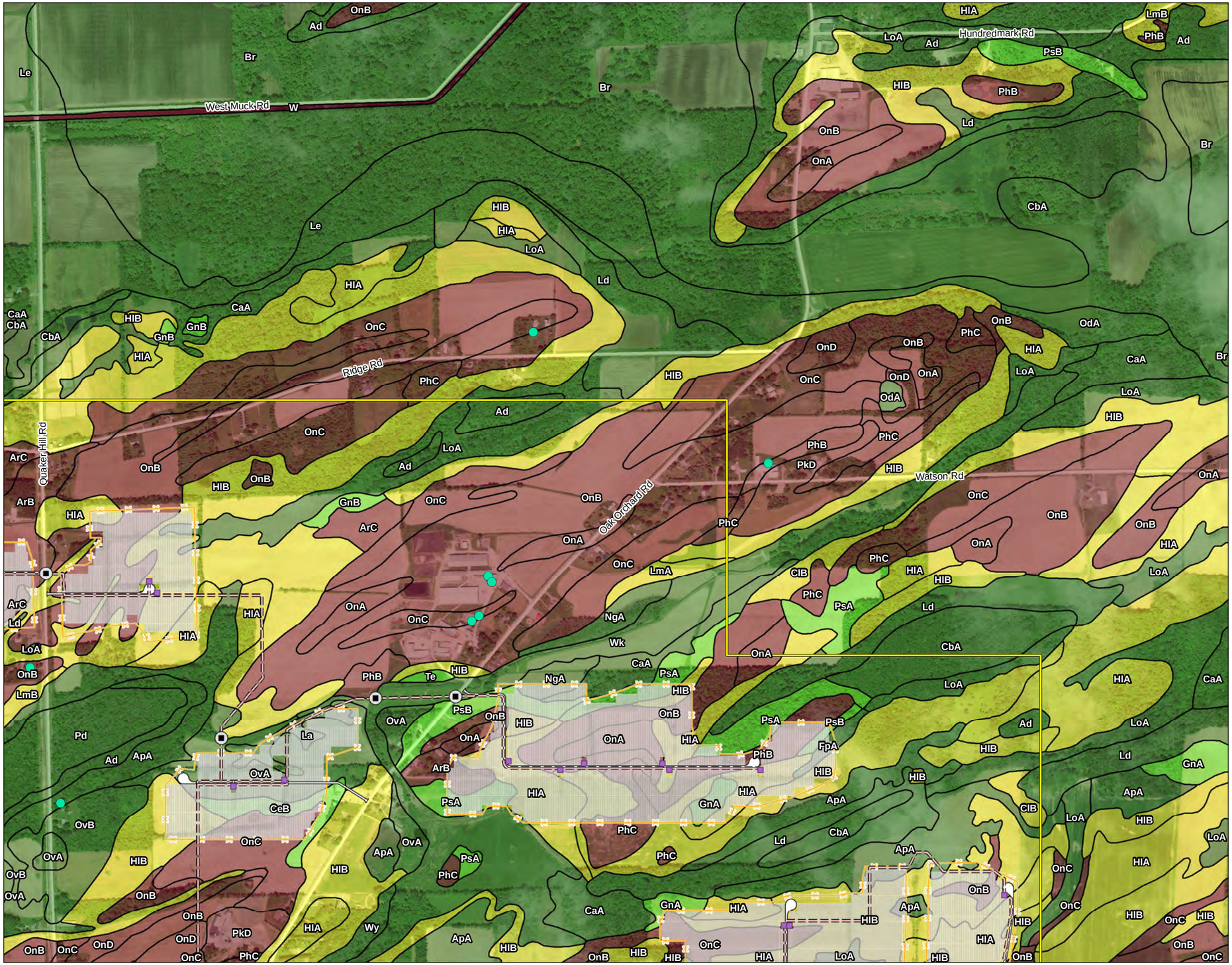


Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Water Table (in)

- 0 - 10 in
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- > 50

*There are no Aquifers within map extent.

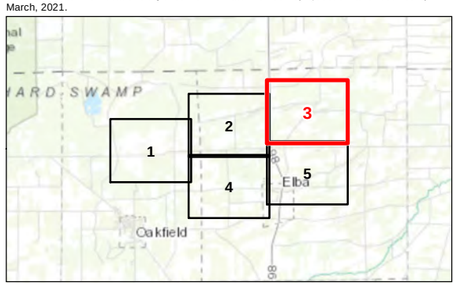
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Town of Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

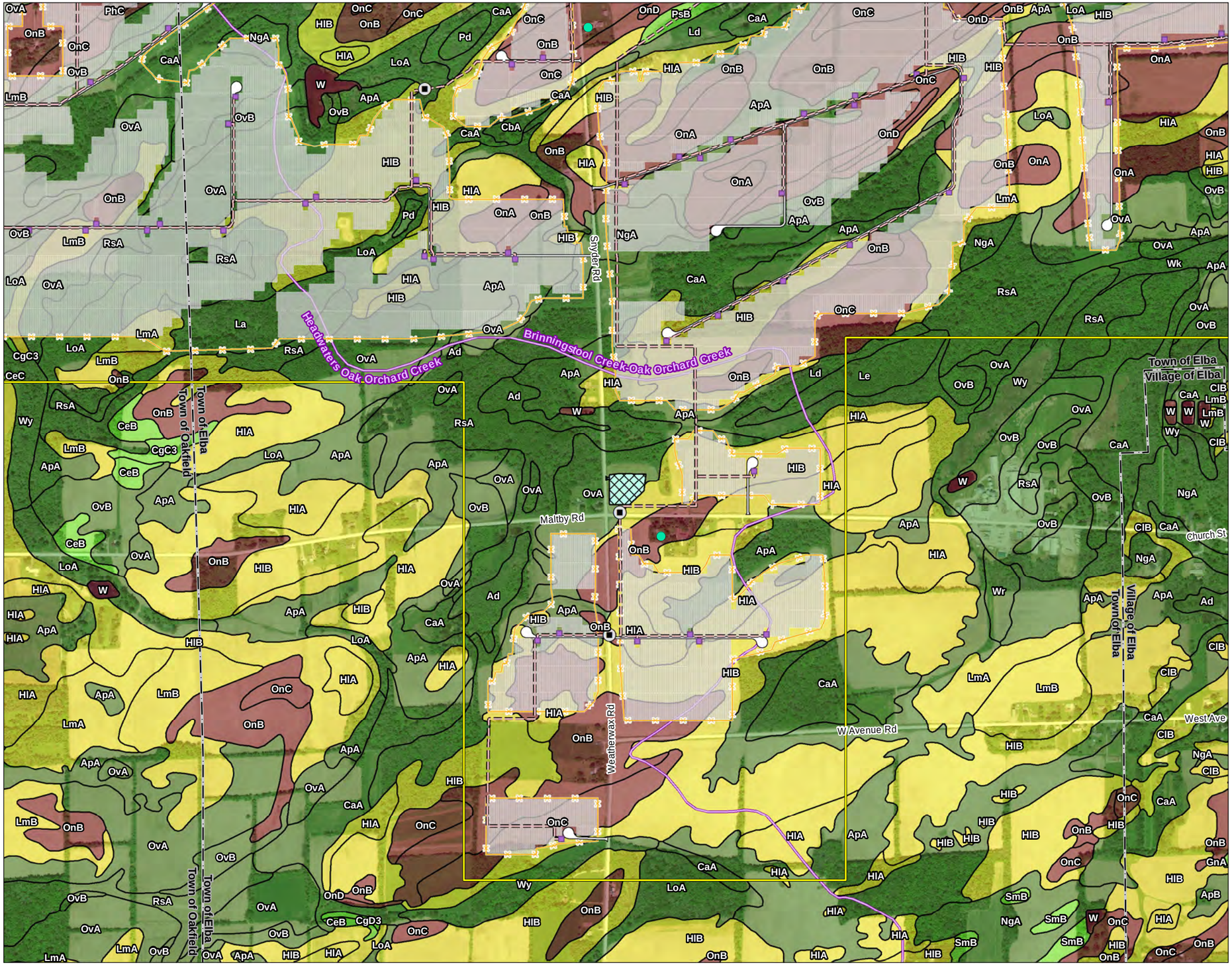
Client/Project
190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1a

Title
Depth to Groundwater
Map 3 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1a_Depth_to_Groundwater_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Water Table (in)

- 0 - 10 in
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- > 50

*There are no Aquifers within map extent.

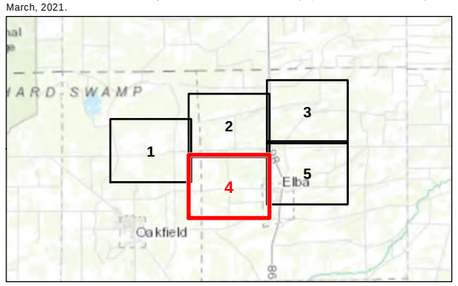
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Towns of Oakfield & Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

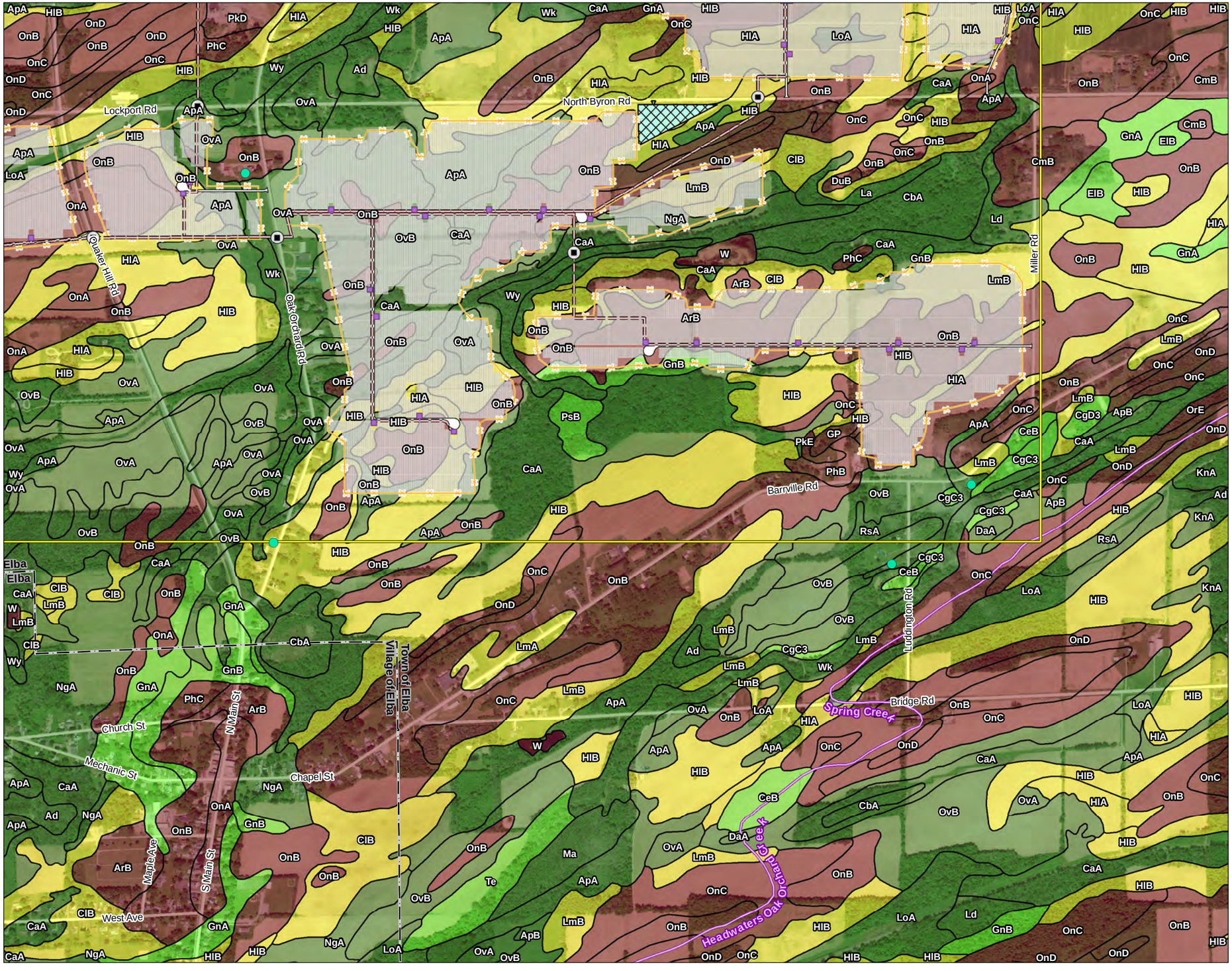
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REVC

Figure No.
13-1a

Title
Depth to Groundwater
Map 4 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit 3\Fig_13-1a_Depth_to_Groundwater_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Water Table (in)

- 0 - 10 in
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- > 50

*There are no Aquifers within map extent.

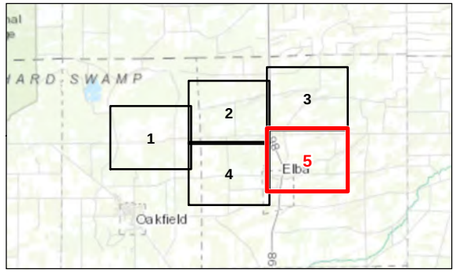
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Town of Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

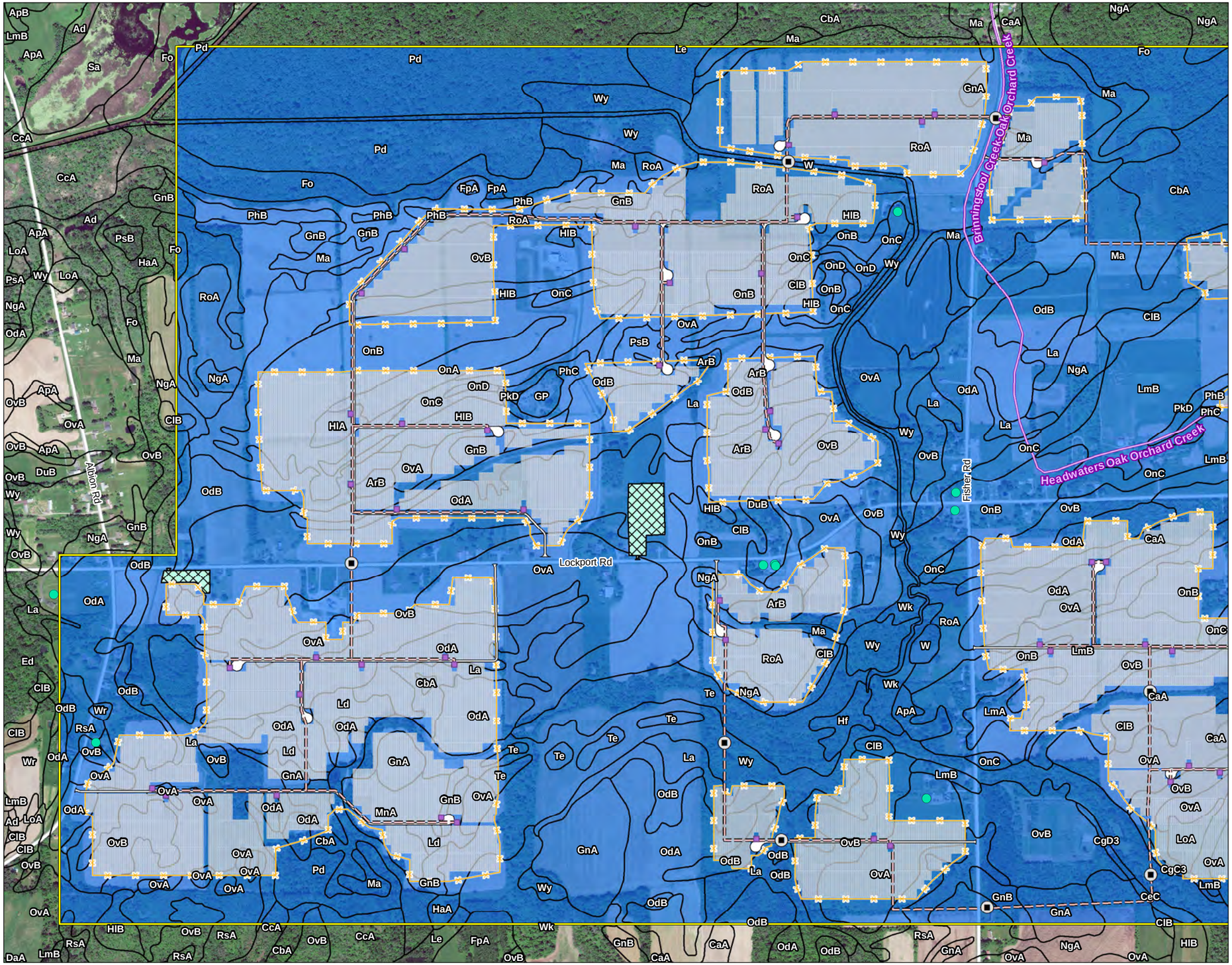
Client/Project
190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1a

Title
Depth to Groundwater
Map 5 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1a_Depth_to_Groundwater_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Bedrock (in)

- 0 - 25 in
- 25 - 50
- 50 - 75
- >75

*There are no Aquifers within map extent.

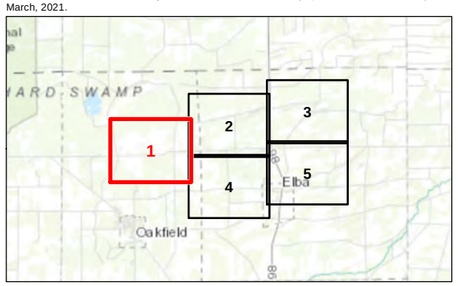
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Town of Oakfield
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

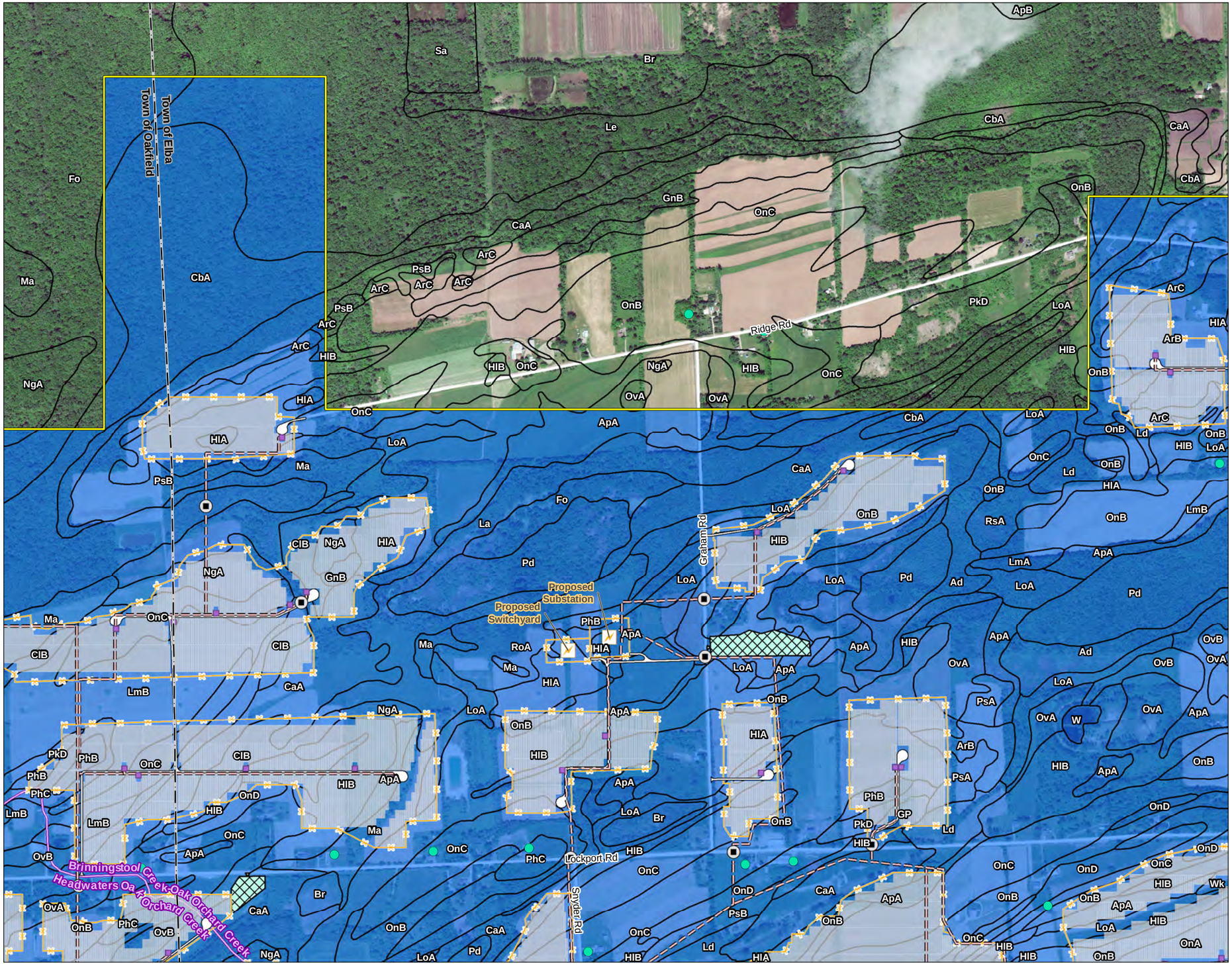
Client/Project
190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1b

Title
Depth to Bedrock
Map 1 of 5

U:\1905\02038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1b_Depth_to_Bedrock_CSF.mxd Revised: 2021-06-29 By: astapleton



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Bedrock (in)

- 0 - 25 in
- 25 - 50
- 50 - 75
- >75

*There are no Aquifers within map extent.

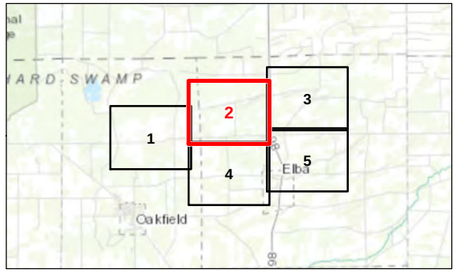
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Towns of Oakfield & Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

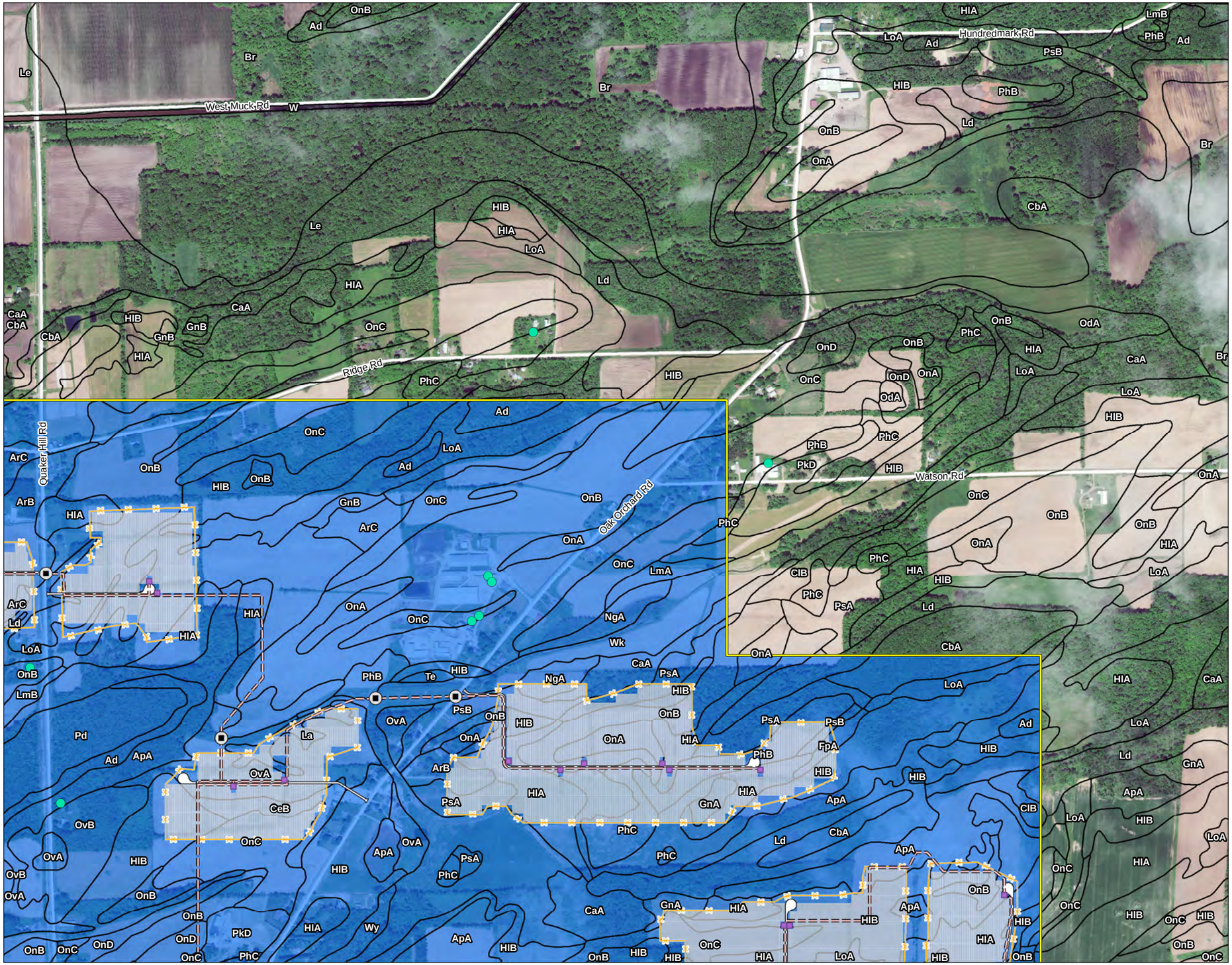
Client/Project
190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1b

Title
Depth to Bedrock
Map 2 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1b_Depth_to_Bedrock_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Bedrock (in)

- 0 - 25 in
- 25 - 50
- 50 - 75
- >75

*There are no Aquifers within map extent.

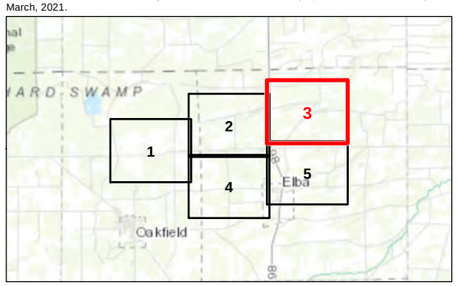
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Town of Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

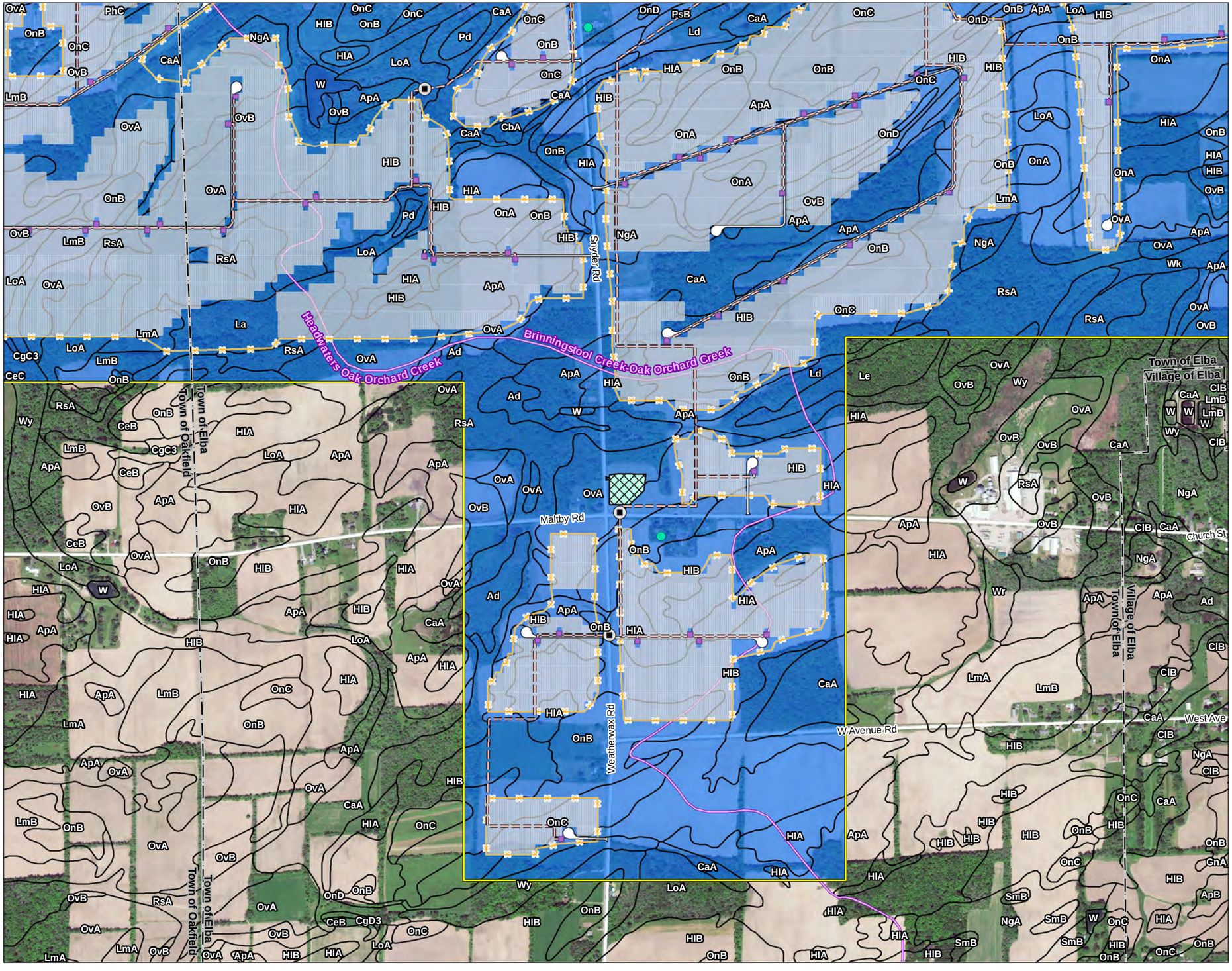
Client/Project 190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1b

Title
Depth to Bedrock
Map 3 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1b_Depth_to_Bedrock_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Groundwater Well
- Watershed Boundary (HUC 12)
- Aquifer*
- Municipal Boundary

Depth to Bedrock (in)

- 0 - 25 in
- 25 - 50
- 50 - 75
- >75

*There are no Aquifers within map extent.

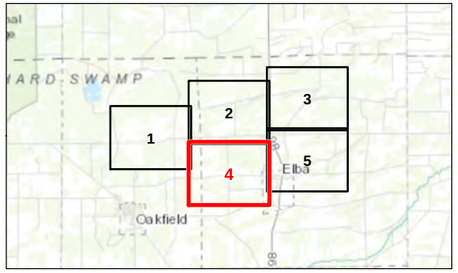
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Towns of Oakfield & Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

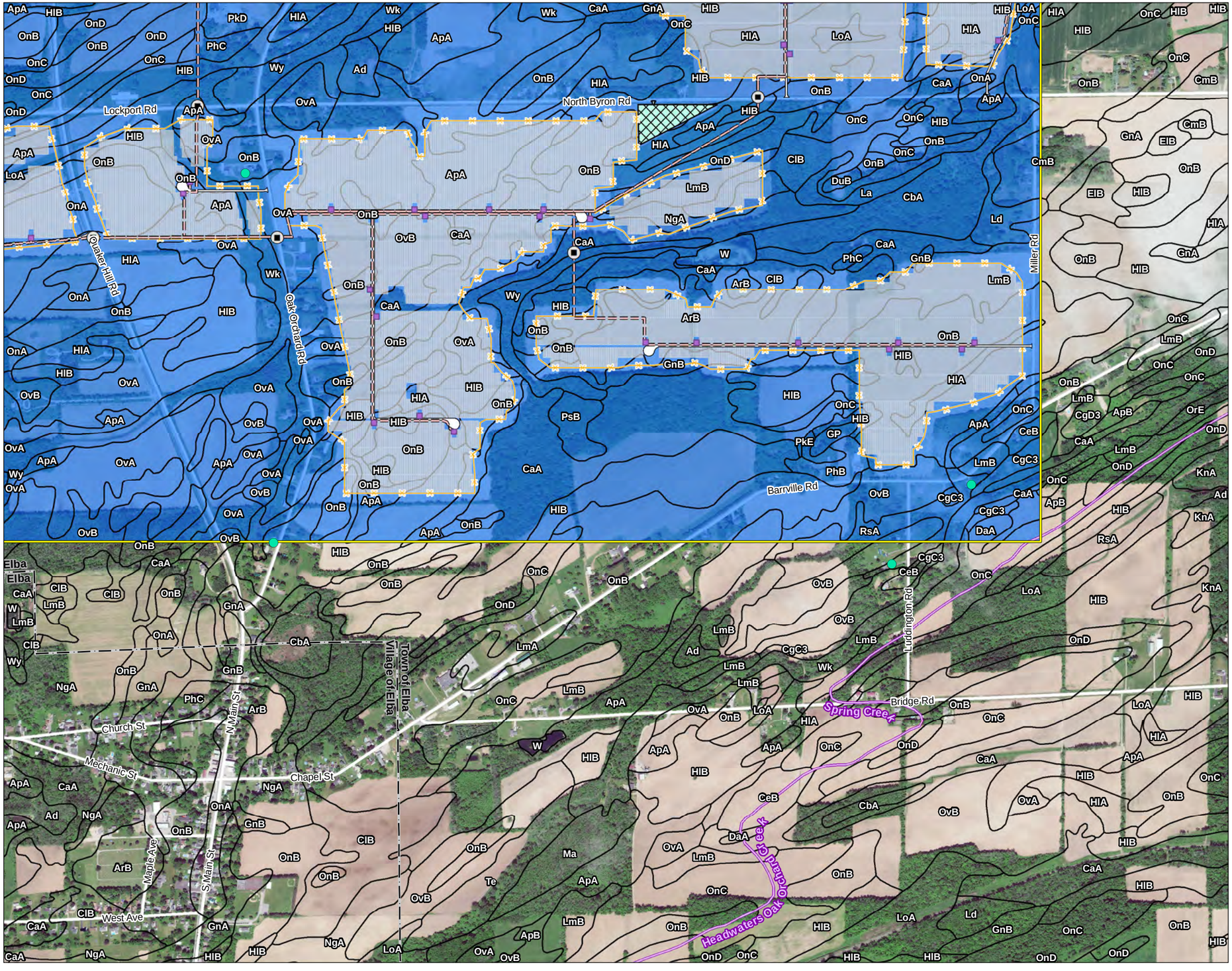
Client/Project
190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1b

Title
Depth to Bedrock
Map 4 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1b_Depth_to_Bedrock_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area
- Proposed Project
  - Substation and Switchyard
  - Inverter
  - HDD
  - PV Panel Array
  - Collection Line
  - Fence Line
  - Access Road
  - Laydown Area
- Existing Features
  - Groundwater Well
  - Watershed Boundary (HUC 12)
  - Aquifer*
  - Municipal Boundary
- Depth to Bedrock (in)
  - 0 - 25 in
  - 25 - 50
  - 50 - 75
  - >75

*There are no Aquifers within map extent.

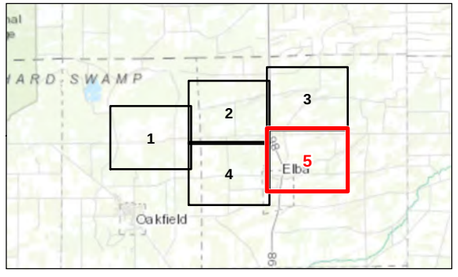
N

0 1,000 2,000 Feet

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NYS GIS Clearinghouse (https://gis.ny.gov), USDA NRCS (http://www.ncgc.nrcs.usda.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020
4. Depth to Water Table aggregation method based on dominant component from gSSURGO data.
5. Groundwater well locations digitized from Private Well Survey Questionnaire received by March, 2021.



Project Location
Town of Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

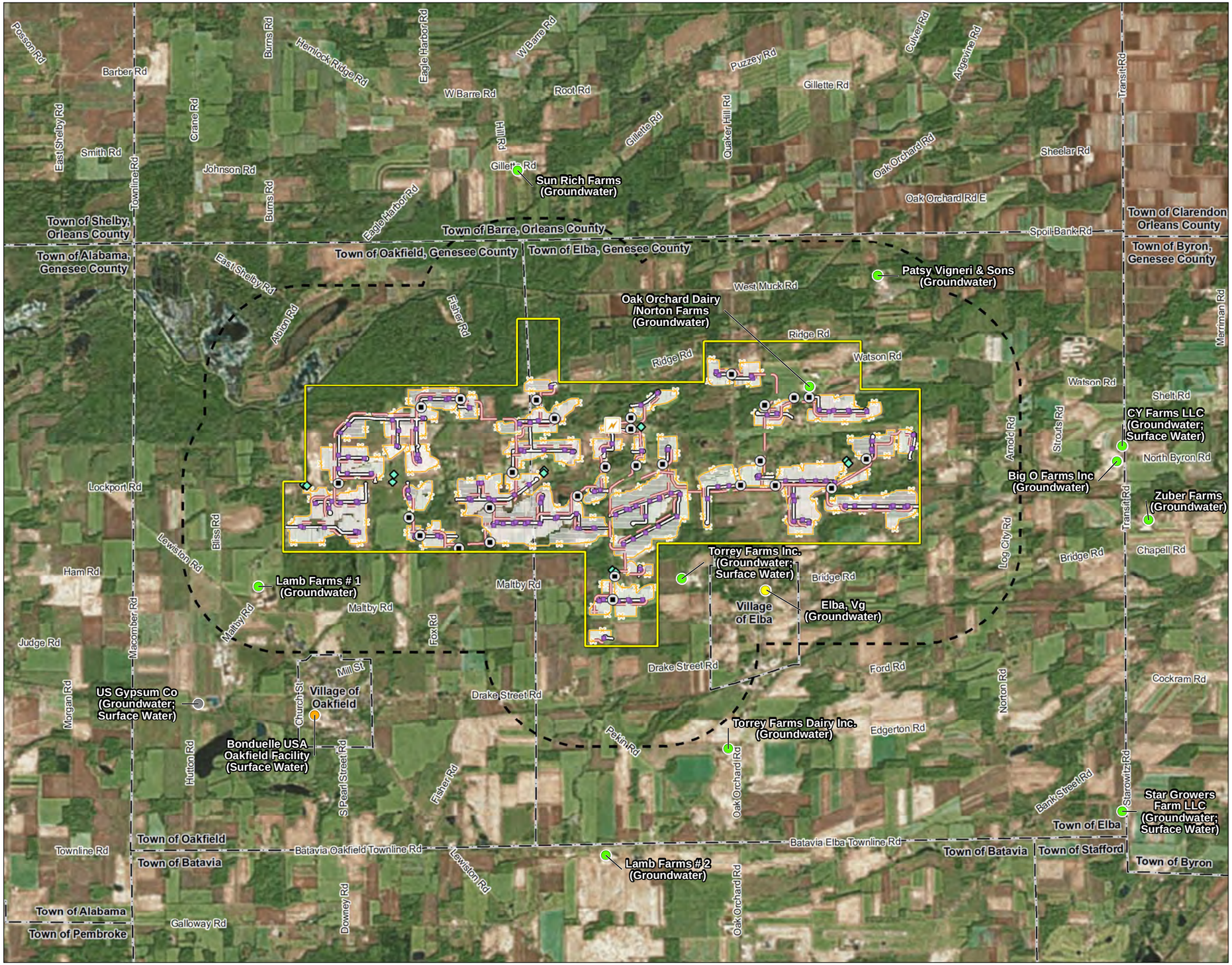
Client/Project
190502038 REVC

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-1b

Title
Depth to Bedrock
Map 5 of 5

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-1b_Depth_to_Bedrock_CSF.mxd Revised: 2021-05-20 By: astapleton



Stantec

Legend

- Project Area
- 1 mile from Project Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- Laydown Area
- PV Panel Array
- Collection Line
- Fence Line
- Access Road

Existing Features

- Municipal Boundary

Water Withdrawal Location

- Agricultural
- Industrial
- Mine Dewatering
- Public Water Supply

N

0 1 2 Miles

(At original document size of 11x17)
1:63,360

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: NCED (https://www.conservationeasement.us); NYS GIS Clearinghouse (https://gis.ny.gov)
3. Background: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Project Location
Towns of Elba and Oakfield
Genesee County, NY

Prepared by AS on 2021-04-01
TR by XX on 2021-04-05
IR by AS on 2021-04-05

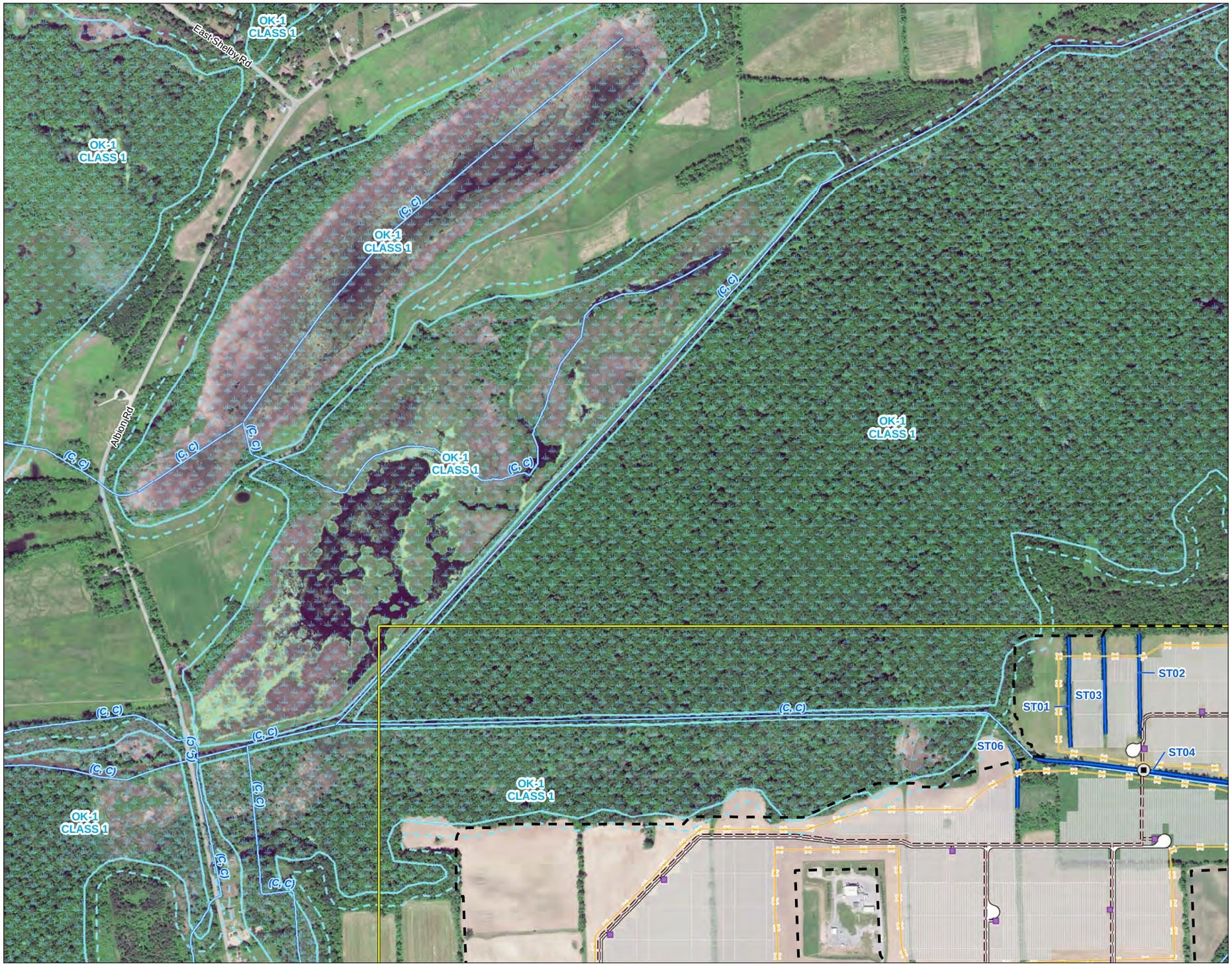
Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REVB

Figure No.
13-2

Title
Drinking Water Intakes
Map 1 of 1

U:\190502038\03_data\gis\mxd\ApplicationExhibit3\Fig_13-2_Drinking_Water_Intakes_CSF.mxd Revised: 2021-04-28 By: astapleton



Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

- Delineated Stream - Linear
- Delineated Stream - Area
- Delineated PUB Wetland

Mapped Wetlands & Streams

- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area

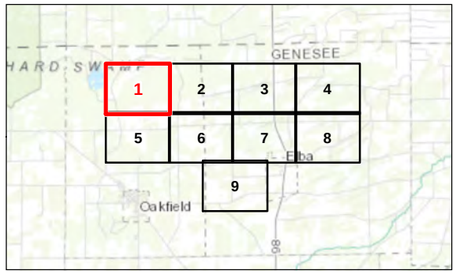
N

0 800 1,600 Feet

(At original document size of 11x17)
1:9,600

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: Cornell University Geospatial Information Repository (https://cugir.library.cornell.edu/), NYS GIS Clearinghouse (https://gis.ny.gov), U.S. Fish & Wildlife Service (https://www.fws.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Town of Oakfield
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

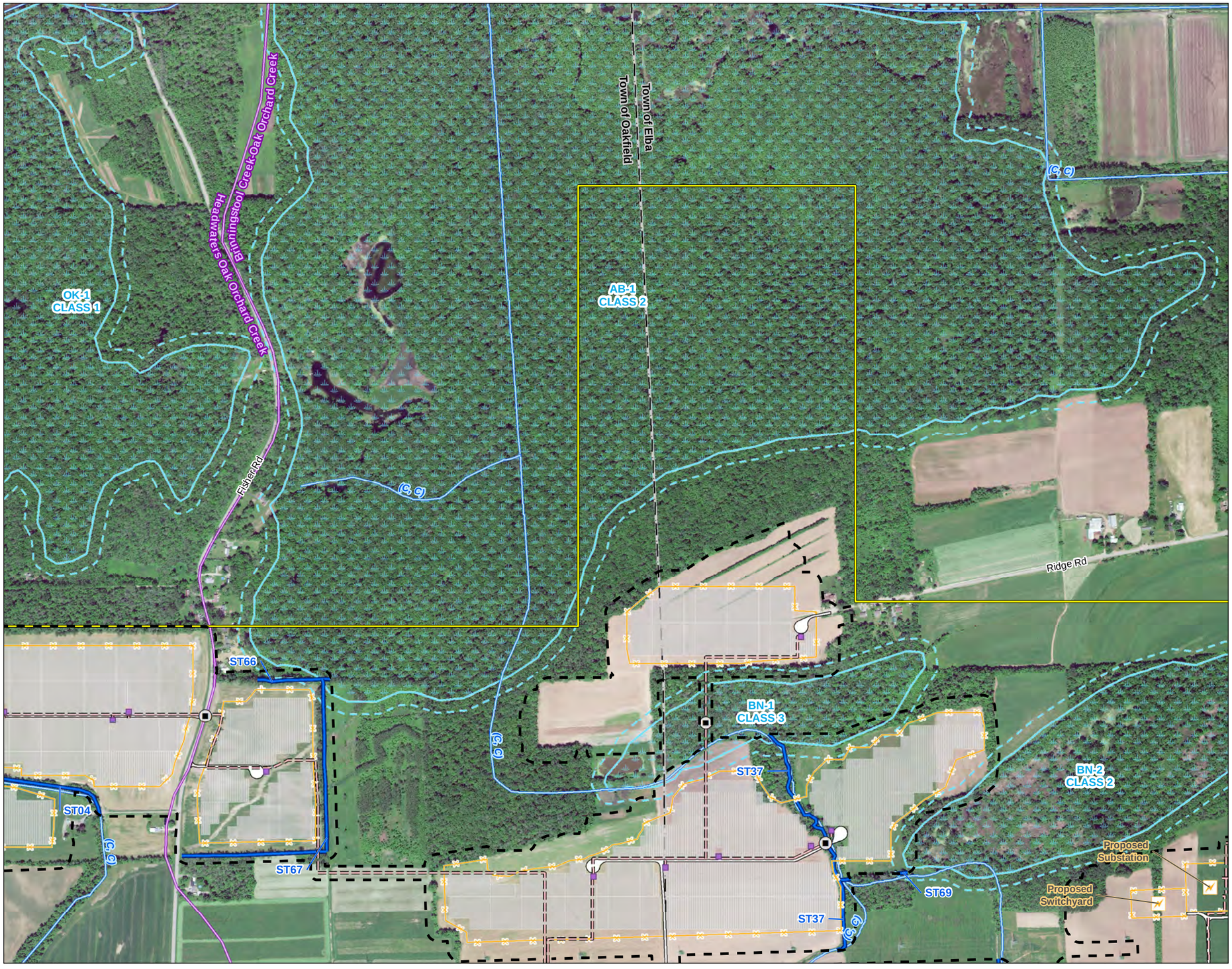
Client/Project
190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 1 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-28 By: astapleton



Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

- Delineated Stream - Linear
- Delineated Stream - Area
- Delineated PUB Wetland

Mapped Wetlands & Streams

- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area

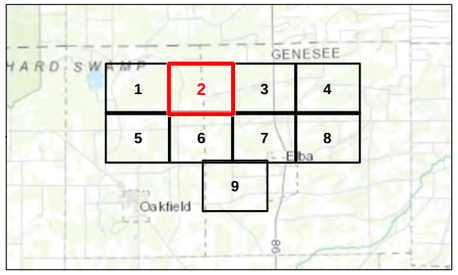
N

0 800 1,600 Feet

(At original document size of 11x17)
1:9,600

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: Cornell University Geospatial Information Repository (https://cugir.library.cornell.edu/), NYS GIS Clearinghouse (https://gis.ny.gov), U.S. Fish & Wildlife Service (https://www.fws.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Towns of Oakfield and Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

Client/Project
190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 2 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-28 By: astapleton

Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

- Delineated Stream - Linear
- Delineated Stream - Area
- Delineated PUB Wetland

Mapped Wetlands & Streams

- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area

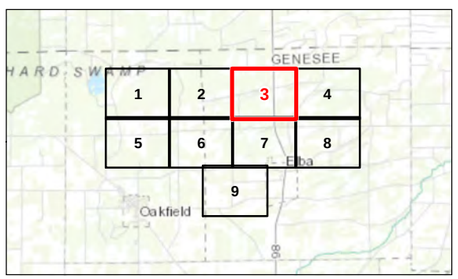
N

0 800 1,600 Feet

(At original document size of 11x17)
1:9,600

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: Cornell University Geospatial Information Repository (https://cugir.library.cornell.edu/), NYS GIS Clearinghouse (https://gis.ny.gov), U.S. Fish & Wildlife Service (https://www.fws.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Town of Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

Client/Project
Hecate Energy Cider Solar LLC
Cider Solar Farm

190502038 REVB

Figure No.
13-3

Title
Delineated Surface Waters
Map 3 of 9

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Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

- Delineated Stream - Linear
- Delineated Stream - Area
- Delineated PUB Wetland

Mapped Wetlands & Streams

- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area

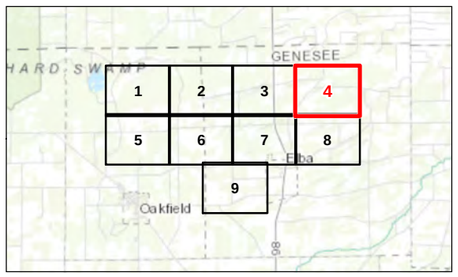
N

0 800 1,600 Feet

(At original document size of 11x17)
1:9,600

Notes

1. Coordinate System: NAD 1983 StatePlane New York West FIPS 3103 Feet
2. Data Sources: Cornell University Geospatial Information Repository (https://cugir.library.cornell.edu/), NYS GIS Clearinghouse (https://gis.ny.gov), U.S. Fish & Wildlife Service (https://www.fws.gov/)
3. Background: WorldView-3 satellite imagery purchased on June 6, 2020



Project Location
Town of Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

Client/Project
190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 4 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-29 By: astapleton

Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

- Delineated Stream - Linear
- Delineated Stream - Area
- Delineated PUB Wetland

Mapped Wetlands & Streams

- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area

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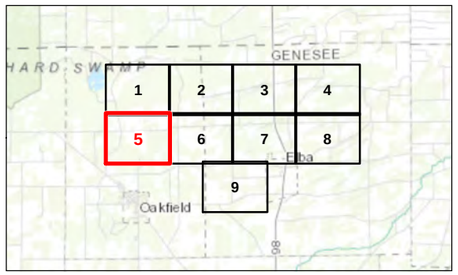


Project Location
Town of Oakfield
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

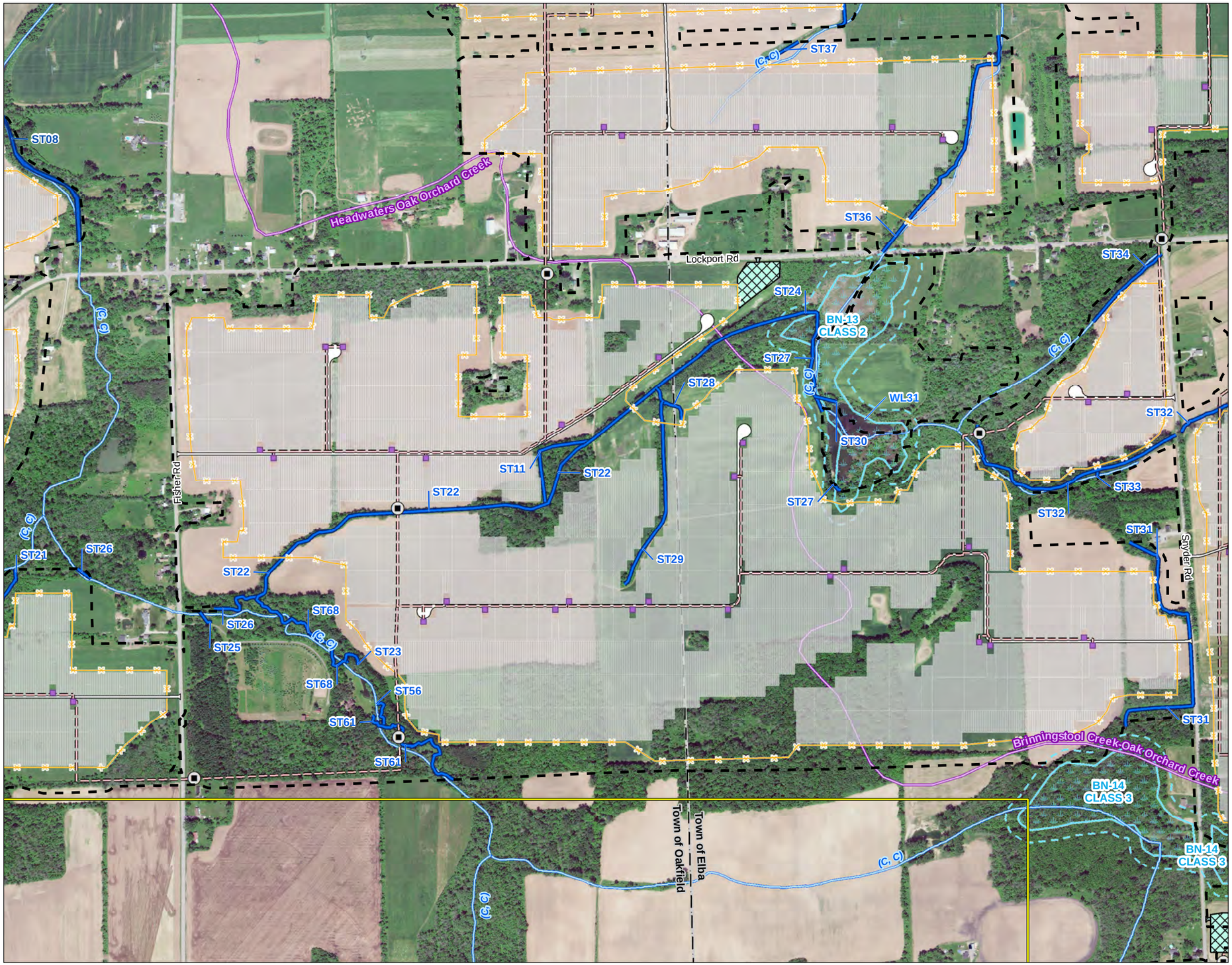
Client/Project
190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 5 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-29 By: astapleton



Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

- Delineated Stream - Linear
- Delineated Stream - Area
- Delineated PUB Wetland

Mapped Wetlands & Streams

- NYSDEC Stream (Class, Standard)
- NYSDEC Freshwater Wetland
- NYSDEC 100ft Adjacent Area

N

0 800 1,600 Feet

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1:9,600

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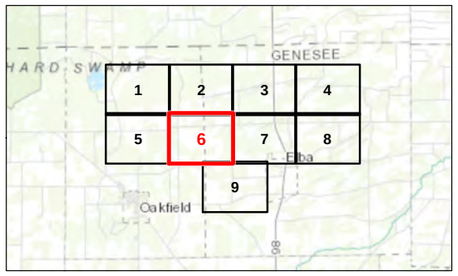


Project Location
Towns of Oakfield and Elba
Genesee County, NY

Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

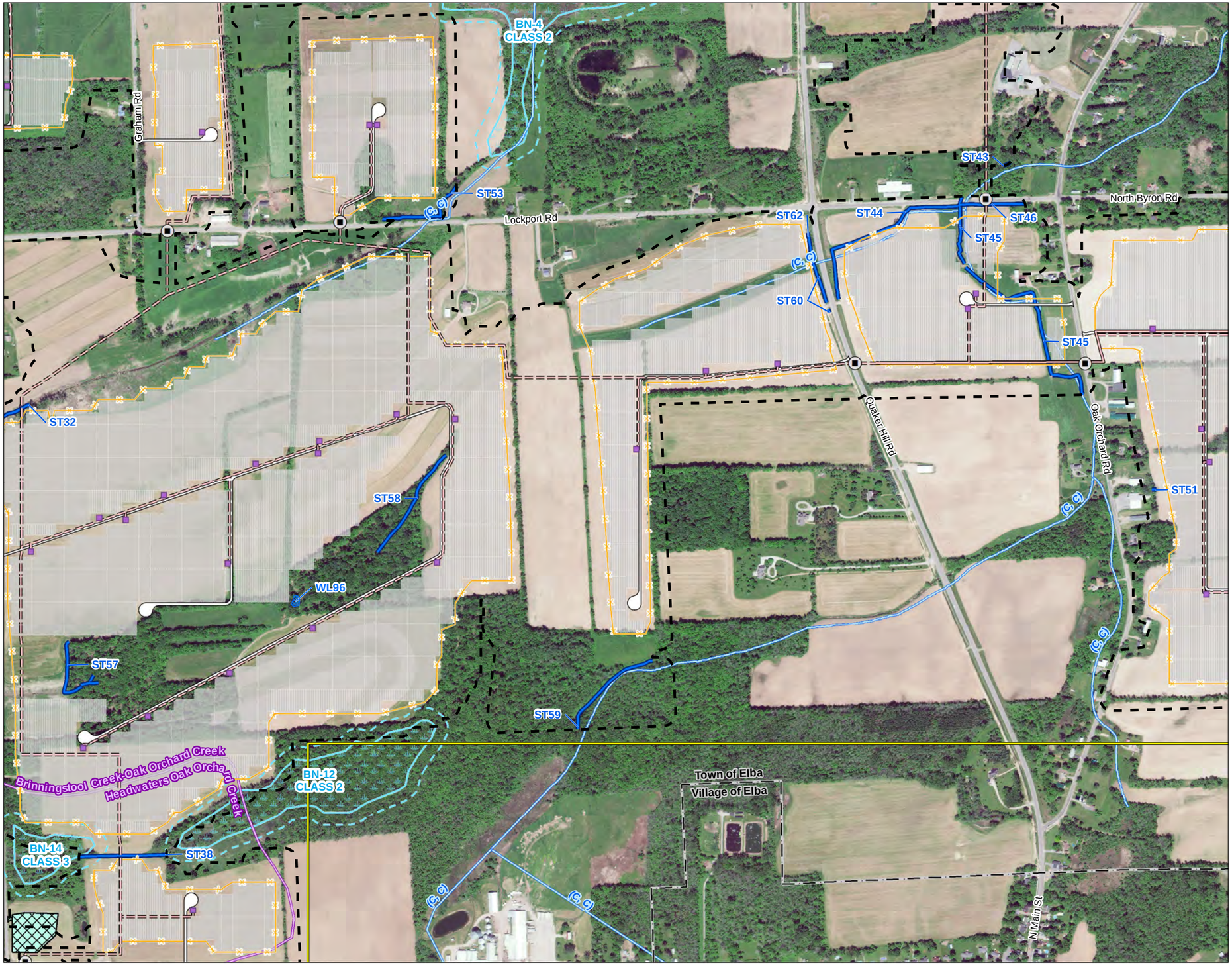
Client/Project 190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 6 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit3\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-29 By: astapleton



Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
- HDD
- PV Panel Array
- Collection Line
- Fence Line
- Access Road
- Laydown Area

Existing Features

- Municipal Boundary

Delineated Features

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Mapped Wetlands & Streams

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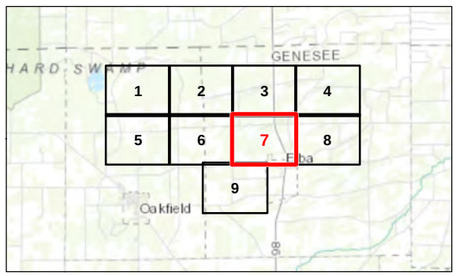


Project Location
Town of Elba
Genesee County, NY

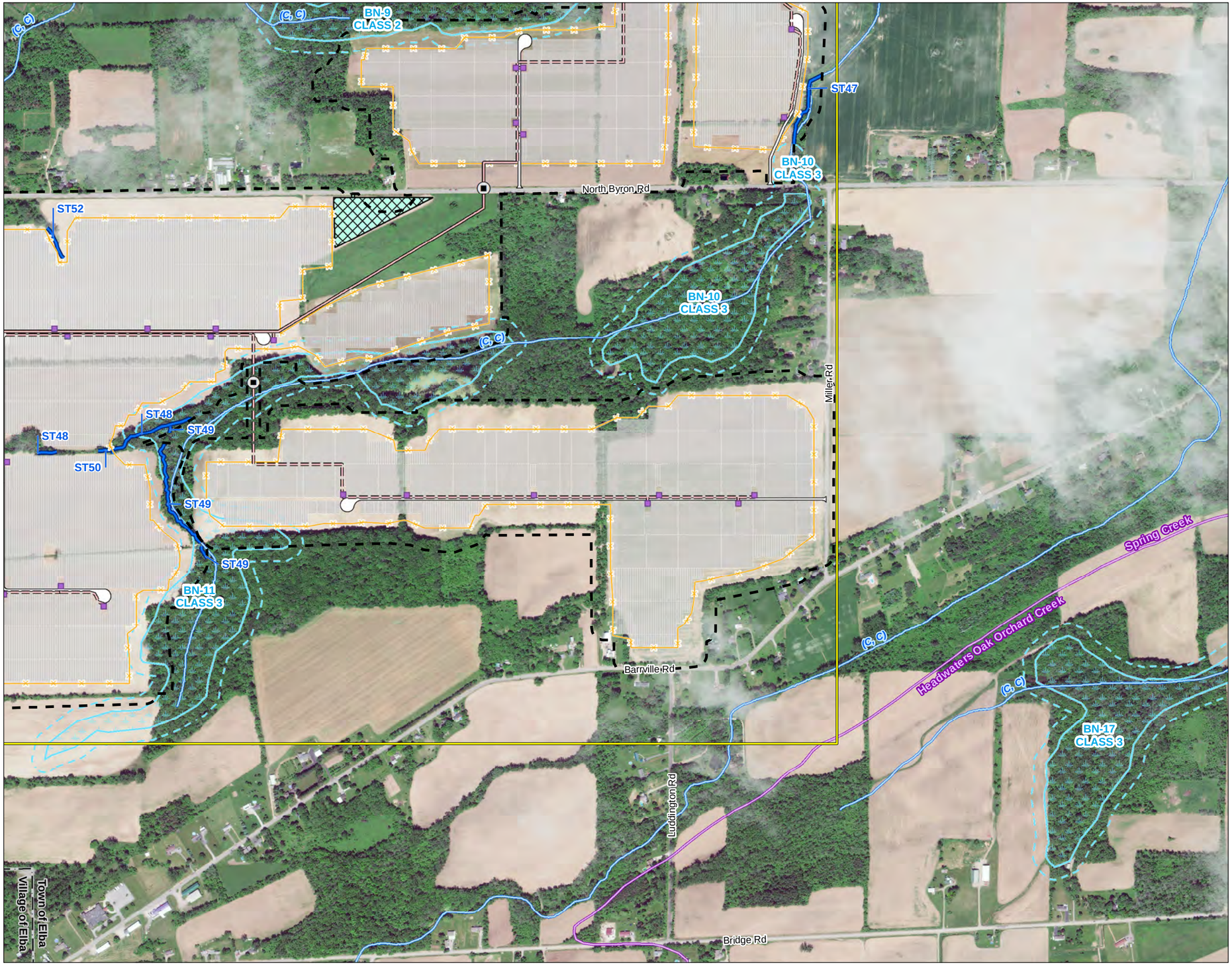
Prepared by AS on 2021-04-01
TR by EE on 2021-04-05
IR by AS on 2021-04-05

Client/Project
190502038 REVB
Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 7 of 9

U:\1905\02038\03_data\gis\mxd\Application\Exhibit 3\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-28 By: astapleton



Stantec

Legend

- Project Area
- Study Area

Proposed Project

- Substation and Switchyard
- Inverter
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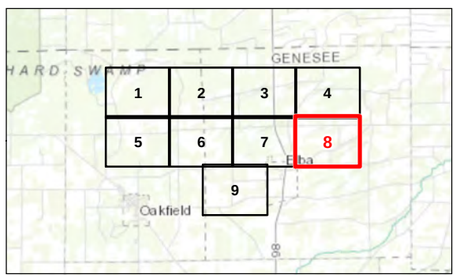

Project Location
Town of Elba
Genesee County, NY

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IR by AS on 2021-04-05

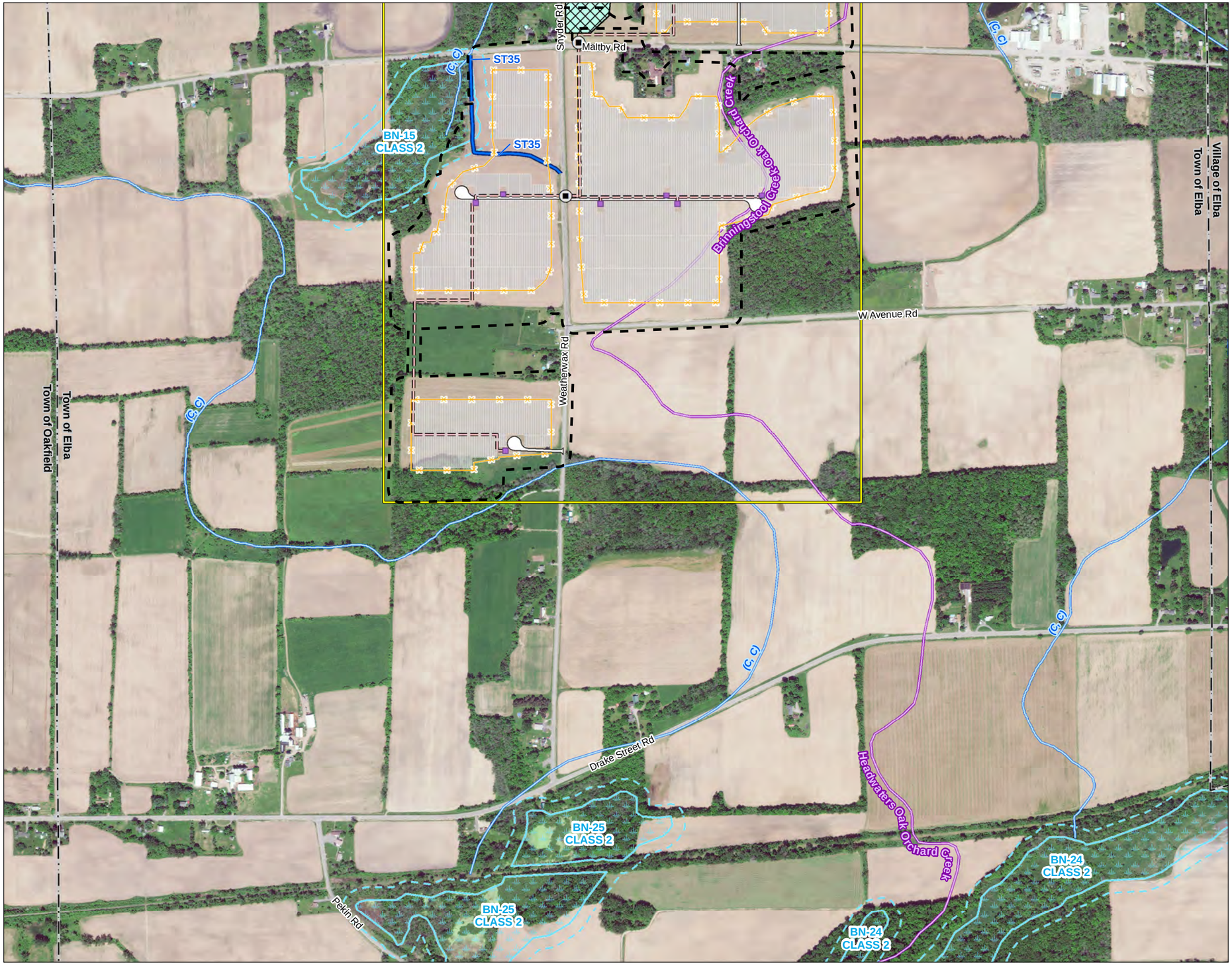
Client/Project
190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 8 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit13\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-28 By: astapleton



Stantec

Legend

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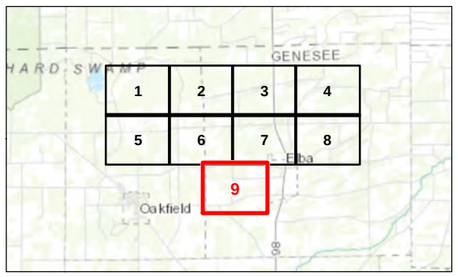

Project Location
Town of Elba
Genesee County, NY

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Client/Project
190502038 REVB

Hecate Energy Cider Solar LLC
Cider Solar Farm

Figure No.
13-3

Title
Delineated Surface Waters
Map 9 of 9

U:\190502038\03_data\gis\mxd\Application\Exhibit3\Fig_13-3_Delineated_Surface_Waters_CSF.mxd Revised: 2021-04-29 By: astapleton