



**SOMERSET SOLAR, LLC**

**MATTER NO. 22-00026**

**§900-2.14 Exhibit 13 Revised**

**Water Resources and Aquatic Ecology**

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**ACRONYM LIST**

§	Section
bgs	below ground surface
BMPs	Best management practices
CWA	Clean Water Act
Facility	Somerset Solar Facility
HDD	horizontal directional drill
HUC	Hydrologic Unit Code
NWP	Nationwide Permit
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
ORES	Office of Renewable Energy Siting
PCBs	polychlorinated biphenyls
Project Site	The approximately 1,396-acre property on which the Facility is proposed
SPCC	Spill Prevention, Control and Countermeasures
SSURGO	Soil Survey Geographic
SWDA	Solid Waste Disposal Area
SWPPP	Stormwater Pollution Prevention Plan
TDS	total dissolved solids
USACE	United States Army Corps of Engineers
USCs	Uniform Standards and Conditions
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WOTUS	Waters of the United States
WQC	Water Quality Certification

## Glossary Terms

<b>Applicant</b>	Somerset Solar, LLC, a subsidiary of The AES Corporation, Inc. (AES), the entity seeking a siting permit for the Facility Site from the Office of Renewable Energy Siting (ORES) under Section (§) 94-c of the New York State Executive Law.
<b>Application</b>	Application under §94-c of the New York State Executive Law for review by the ORES for a Siting Permit.
<b>Facility</b>	The proposed components to be constructed for the collection and distribution of energy for the Somerset Solar Facility, which includes solar arrays, inverters, electric collection lines, and the collection substation.
<b>Facility Site</b>	The limit of disturbance (LOD) that will be utilized for construction and operation of the Facility, which totals about 700 acres on the Project Parcels in the Town of Somerset, Niagara County, New York (Figure 2-1).
<b>Project Parcels</b>	The parcels that are currently under agreement with the Applicant and Landowner, totaling about 1,784 acres in the Town of Somerset, Niagara County, New York, on which the Facility Site will be sited (Figure 3-1).
<b>Project Site</b>	The acreage of the Project Parcels under agreement between the Applicant and the Landowner, consisting of approximately 1,396 acres, in which the Applicant has performed diligence, surveys and assessments in support of Facility design and layout.

## **EXHIBIT 13            Water Resources and Aquatic Ecology**

This exhibit addresses the requirements specified in 19 New York Codes, Rules and Regulations (NYCRR) § 900-2.14 regarding water resources and aquatic ecology.

Eighteen (18) streams were delineated within the approximately 1,396-acre Project Site. New York State- (NYS-) regulated waterbodies will not be impacted as part of the construction and operation of the Somerset Solar Facility (Facility). The Applicant has received a Preliminary and Approved Jurisdictional Determination for regulated Waters of the United States (WOTUS) located on the Project Site from the United States Army Corps of Engineers (USACE). The Facility Site has been designed to avoid impacts to jurisdictional surface waters, and no compensatory mitigation is required.

Segments of Fish Creek delineated within the Project Site were identified by the Office of Renewable Energy Siting (ORES) as an unprotected (per Environmental Conservation Law 05-0501) navigable (per Environmental Conservation Law 15-505) waterbody in their jurisdictional determination letter received for the Facility on January 25, 2022 (Appendix 13-C). According to Article 15 of the New York State Department of Environmental Conservation (NYSDEC) Environmental Conservation Law, unprotected, navigable streams are regulated up to the mean high-water line. NYSDEC protected streams are protected to the top of their banks, which are considered to extend no more than 50 feet horizontally from the mean high-water line. There is no setback or adjacent area associated with unprotected, navigable streams. Fish Creek is delineated within the Project Site as SB-2 through SB-4, with sections SB-2 and SB-3 identified as NYS-regulated as a navigable waterway under ORES' jurisdiction (Appendix 13-C).

Surface waters impacts have been avoided during construction activities by using existing crossings, and through the use of selective tree/shrub cutting techniques within 50 feet of Fish Creek. Selective cutting techniques limit tree/shrub removal to use of hand tools and non-mechanized equipment for removal. Further avoidance and minimization measures are outlined in the Stormwater Pollution Prevention Plan (SWPPP) (Appendix 13-B), including erosion and sedimentation devices selected to avoid the discharge of pollutants and to assist in the prevention of a violation of water quality standard and meet the performance criteria outlined in the 2015 NYS Stormwater Management Design Manual (NYSDEC 2015). In addition to typical erosion and drainage practices and structures including storm pipe, silt fence, temporary check dams, dry swales, slope protection, inlet/outlet protection, vegetation protection, and stabilized construction entrances, vegetation filter strips have been incorporated into the Facility design to protect waters

located adjacent to or downstream from the Facility Site and protect the water quality of any stormwater runoff exiting the Facility site.

Additional avoidance and minimization measures will be included in the Spill Prevention, Control and Countermeasures (SPCC) plan to be prepared for construction.

Well survey questionnaires were sent out to all participating parcel owners and non-participating parcel owners located within 1,000 feet of the Project Site in July 2021, July 2022, and August 2022 (Appendix 13-A). There have been no responses received to date, which could be used to identify the presence of private wells on those properties.

A groundwater monitoring program has been in place for the former coal plant, Somerset Station, since 1983 for the purposes of evaluating potential impacts to ground and surface waters from site operations. The monitoring program includes quarterly groundwater and surface water monitoring for the former coal plant, including Solid Waste Disposal Area (SWDA) II, which was established to comply with a Certificate of Environmental Compatibility and Public Need issued for the Somerset Station in December 1978 (GEI Consultants 2022). A total of 67 groundwater monitoring wells are located within the Facility Site and 500-foot buffer of the Facility Site that are part of the groundwater monitoring network for the former coal plant. Of these, 14 are located within the Facility Site, with 53 are located within the 500-foot buffer of the Facility Site. A total of seven groundwater level monitoring wells are also present, with two located within the Facility Site and five located within the Facility Site 500-foot buffer. Water quality monitoring results for calendar year 2021 are discussed in section 13(a) (groundwater) and section 13(b) (surface water) of this exhibit, with the complete detailed report of results provided in Appendix 13-D. The locations of existing groundwater monitoring wells have been considered and avoided as part of the Facility design and layout process and are noted on the engineering drawings in Appendix 5-A, where relevant to Facility infrastructure. There are no anticipated groundwater impacts associated with any wells located on the Facility Site. The Facility has been designed to comply with the Uniform Standards and Conditions (USCs) and impacts related to water resources and aquatic ecology have been avoided to the maximum extent practicable.

## **13(a) Groundwater**

### ***(1) Hydrologic Character***

A preliminary geotechnical investigation was conducted for the Project Site (Appendix 10-A). Based on a review of the Soil Survey Geographic (SSURGO) database, the Project Site has a depth to bedrock greater than 6.5 feet. During the geotechnical investigation,

39 soil borings were conducted in the proposed array areas to approximately 20 feet below ground surface (bgs), one soil boring was conducted at the soil mound located south of the arrays in Area 8 until practical refusal was encountered at approximately 44.5 feet bgs, and two soil borings were conducted in the proposed substation area until practical refusal was encountered at approximately 25.9 feet and 28.5 feet bgs (ANS Geo 2021). Of the 42 soil borings conducted in the proposed array areas, refusal (i.e., bedrock) was encountered in six locations at depths ranging from 10.5 feet (soil boring B-29) to 17.0 feet (soil boring B-39) bgs. Refusal also was encountered at soil borings B-31 (10.7 feet bgs), B-25 (14.0 feet bgs), B-04 (14.6 feet bgs), and B-32 (14.8 feet bgs) (Appendix 10-A).

Depth to bedrock and depth to groundwater data available for the 67 groundwater monitoring wells that are part of the ongoing groundwater monitoring program for the former coal plant and from soil borings collected for the geotechnical survey investigation for the Project Site are shown on Figure 13-1. It should be noted that multiple wells appear to occupy the same space – the notation of ‘D’ and ‘S’ within the groundwater well identification codes given are to note that within that space there are two wells – one deep well (‘D’) and one shallow well (‘S’) (GEI Consultants 2022). An additional table showing the soil boring data for all locations in the Project Site is included at the end of the Figure 13-1 map set. Groundwater depth for groundwater monitoring wells sampled in October 2021 ranged from 4.2 to 36.0 feet (Appendix 13-D). Within the 14 groundwater monitoring wells located within the Facility Site for which groundwater depth is available, groundwater depth ranges from 8.8 feet to 15.5 feet bgs.

The SSURGO soil database indicated that the Facility Site has a Water Table Depth ranging from 0 feet to greater than 6.5 feet (Appendix 10-A). At the time of the geotechnical investigation, groundwater was encountered at a small portion of 42 soil borings (21%); the field investigation was conducted between March 15 and 23, 2021 and again on November 4, 2021. Groundwater was encountered in eight of the 39 soil borings conducted in the proposed array areas, ranging in depth (of first encounter) from 3.0 feet (soil boring B-26) to 17.0 feet (soil boring B-03) bgs. Groundwater also was encountered at soil borings B-04 (12.2 feet and 14.0 feet), B-14 (8.8 feet and 19.0 feet), B-27 (10.5 feet), B-29 (10.5 feet), B-34 (8.0 feet and 20.0 feet), and B-35 (8.0 feet and 18.0 feet) bgs. At the two soil borings taken at the proposed substation location, groundwater was



encountered at one of the two locations, at 17.2 feet bgs (soil boring B-SS-2) (Appendix 10-A).

Groundwater conditions within the area are ephemeral and fluctuate due to seasonal and climate conditions. While groundwater is affected by precipitation and snowmelt, no specific groundwater recharge areas were identified within the Project Site as a part of the geotechnical investigation. Based on the geotechnical report, the Project Site is underlain by low permeability silts and clays. In this type of environment, it is not uncommon to have temporary perching of a water table that could require dewatering in select locations.

#### i. Groundwater Monitoring Results

The groundwater and surface water monitoring system that is in place for the former coal plant is divided into two monitoring networks areas: a Station Area monitoring network (located around the former power generating area of the former coal plant) and a SWDA monitoring network which is divided into two landfill units, SWDA I and SWDA II (GEI Consultants 2022). The monitoring network for the former coal plant includes groundwater monitoring wells, piezometers (to monitor groundwater elevations), surface water retention basin locations, treatment water settling basins, a sludge stabilization basin location (now closed), and a groundwater suppression system (Appendix 13-D). The monitoring network for the SWDA I and SWDA II portions of the former coal plant site includes groundwater monitoring wells, piezometers, surface water locations, leachate collection system locations, a groundwater suppression system, and storm water runoff basins. The SWDA II monitoring network consists of groundwater monitoring wells around the perimeter of the landfill and three wells (one upgradient and two downgradient) monitoring groundwater quality in the vicinity of a basin that is a lined impoundment temporarily holding collected leachate and stormwater located near the northern boundary of the former coal plant site which is sampled in accordance with a SPDES permit (Appendix 13-D). Groundwater sampling includes routine testing for parameters and concentrations of ammonia, alkalinity, arsenic, boron, calcium, cadmium, chloride, specific conductance, iron, potassium, lithium, magnesium, manganese, molybdenum, pH, sulfate, strontium, total dissolved solids (TDS), temperature, and turbidity. Parameters and concentrations such as silver, aluminum, bromide, chromium, copper, oxidation/reduction potential, fluoride, total hardness, mercury, sodium, lead, selenium, vanadium, and zinc also are collected as a baseline. Due to

the nature of Queenston Shale bedrock that is present bgs throughout the former coal plant site, naturally elevated concentrations of ammonia, chloride, sodium, TDS and several other cations are associated with baseline conditions (GEI Consultants 2022). Results of groundwater monitoring completed in 2021 are provided in Appendix 13-D for the network of groundwater monitoring wells located throughout the Project Site (Figure 13-1). In Figure 13-1, wells associated with the former coal plant have a well identification code that includes 'SO', and those wells that monitor groundwater at the SWDA landfills have a well identification code that includes 'SA'.

Results of the 2021 monitoring effort detected some constituents above water quality standards, which is consistent with historical monitoring results of groundwater quality across the former coal plant (upgradient, down gradient and cross gradient). The results have historically been attributed to elevated concentrations of naturally occurring inorganic constituents. The assessment of potential impacts to groundwater has been established using sample geochemical relationships and intra-well statistical "triggers", which are the limits established for each chemical constituent using the concentration of a parameter greater than three standard deviations above the mean baseline concentrations consistent with 6 NYCRR Part 360-2.11 (c)(5)(ii)(d), where a minimum of 10 quarters of background water quality data exists (GEI Consultants 2022). Although the 2021 results identified levels of a few constituents at levels above the trigger values, when compared to results for the network of wells that are up-gradient from the location, which have similar values above the trigger limits, this indicates similar changes in background conditions.

To protect groundwater in the coal storage pile area located within the railroad track loop (east of Kintigh Substation) and Settling Basin #1 (associated with monitoring wells SO83-04, SO83-05, and SO88-24; Figure 13-1, Sheet 3) a protective liner was historically installed. Elevated concentrations of chloride and sulfate were first detected during 1999 monitoring at these well locations, which was determined to be caused by a separation of the liner system of Settling Basin #1. Basin liner repairs were completed in October 2000 and again in January 2004. Beginning in 2002 a decreasing trend in the levels of chloride and sulfate have been documented in these wells, with some seasonal variability in concentrations (due to seasonal variations in groundwater levels) identified since completion of the mitigative measures (GEI Consultants 2022). Higher concentrations are detected during sampling events that

occur during low groundwater conditions. Following repairs to the liner both sulfate and chloride concentrations have exhibited overall decreasing or stable concentrations through the 2021 monitoring period; however, concentrations of these constituents have not yet returned to historic lows.

Results for 2021 groundwater monitoring in the Project Site for the former coal plant determined that the existing basins are not impacting groundwater. Dominant anion and cation chemistry concentrations exhibited seasonal variability but stable trends in wells located downgradient of the coal storage pile. Concentrations of several leachate indicator parameters which exhibited an increase throughout 2019 in shallow well SO83-05 adjacent to Settling Basin #1 were attributed to separations in the basin liner material identified and repaired in 2020. Additional repairs to the liner were made in early 2021, which reflected decreasing concentrations of leachate parameters observed throughout the 2021 monitoring period. These decreasing concentrations are anticipated to continue, and the quality of groundwater located downgradient of the Settling Basin #1 was assessed in 2022 to evaluate the effectiveness of the repairs. The 2022 data results and report are pending.

Results for 2021 groundwater monitoring in the Project Site completed for SWDA II identified several inorganic constituents (sulfate and TDS) at concentrations above the assessment trigger values at monitoring locations both upgradient and downgradient of the SWDA II landfill. These results suggest the analytes are intermittently present in background concentrations that are above the established trigger values and are representative of natural variation in constituent concentrations as overburden groundwater levels decrease and groundwater entering the well screen is primarily bedrock groundwater (GEI Consultants 2022). Results from surface water samples collected from Fish Creek and the small pond located northeast of SWDA II also did not reflect any enrichment from leachate-dominant ions, as well as chloride levels were not elevated, which could suggest the enrichment was leachate related. Fish Creek surface water sample results for both upstream and downstream locations from the SWDA II landfill were comparable to the results obtained for SWDA II to indicate no impacts to groundwater is occurring from SWDA II. In summary, although the concentrations of sulfate and TDS observed downgradient and cross-gradient of SWDA II have exhibited an increasing trend or have remained elevated in comparison to historical values; the increasing concentration trends are not observed for leachate

indicator parameters, such as bromide, chloride, and potassium. Therefore, impacts from the SWDA II landfill are not suspected. Monitoring to assess and evaluate the effectiveness of previous corrective actions continued throughout the 2022 monitoring period. The 2022 data results and report are pending.

## ***(2) Private Well Survey Results and Groundwater Aquifers and Groundwater Recharge Areas***

The Applicant conducted a private well survey of property owners within 1,000 feet of the Project Site boundary. A total of 97 different parcels were identified, some of which were owned by the same landowner. Well survey letters were sent to each landowner via certified mail with the United States Postal Service on July 19, 2021, July 28, 2022, August 1, 2022, and August 3, 2022. Copies of the letters and certified mail receipts are provided in Appendix 13-A. No responses were received. Undeliverable receipts and return to sender notices were received for 16 of the private well surveys submitted, and copies of these notices also are provided in Appendix 13-A.

Figure 13-1 provides a map for the location of the active groundwater monitoring and groundwater level wells that were established as part of permit requirements associated with the former coal plant (Part 360 Permit licensed under NYS Department of Public Service Case 80002), as well as the soil boring locations conducted in support of the Facility's Geotechnical Investigation. A total of 67 groundwater monitoring wells and seven groundwater level wells are part of the groundwater monitoring network located within the Facility Site and within the 500-foot area adjacent to the Facility Site (Figure 13-1). Of these, 14 groundwater monitoring wells and two groundwater level monitoring well are located within the Facility Site, with 53 groundwater monitoring wells and five groundwater level monitoring wells located within the 500-foot area adjacent to the Facility Site. The map set in Figure 13-1 shows the general direction of groundwater flow in the northern portion of the Facility, which is north-northwest towards Lake Ontario.

A magnetometer survey was completed for the Project Site in 2022, which identified one of the existing groundwater monitoring wells within the Project Site (Appendix 3-B). The location of this well was confirmed with the landowner to be one of the existing groundwater monitoring wells associated with the monitoring network associated with the former coal plant. The well survey conducted for parcels located within 1,000 feet of the Facility did not identify any other wells in the vicinity of the Project Site.

A review of publicly available data determined there were no active public water supply wells or water supply intakes located within 1,000 feet of the Project Site. According to data available from NYSDEC the nearest public water supply well is located approximately 3.2 miles outside the Facility Site.

Regional groundwater is generally expected to flow in a north-northwest direction towards Fish Creek, and ultimately into Lake Ontario. Non-saline groundwater in NYS is classified as “GA”, which is suitable for use as a source of potable water supply, unless a specific indication of impairment is known.

Blasting is not anticipated to be required and during construction, no blasting is anticipated to occur.

### ***(3) Impacts on Drinking Water Supplies, Groundwater Quality and Groundwater Quantity***

No permanent impacts to aquifers (primary, principal, or SSA) or groundwater are anticipated as a result of the construction and operation of the Facility. As with construction projects of this type, the potential for minor and temporary impacts to groundwater will be avoided and minimized through the implementation of best management practices (BMPs), including measures proposed in the Stormwater Pollution Prevention Plan (SWPPP) provided as Appendix 13-B.

There are no NYSDEC-mapped aquifers extending beneath the Facility Site. That said, and as discussed below, characteristics of the Facility and its construction and operation will preserve groundwater quality and quantity.

Grading and fill will be required, with approximately 264 acres of total grading, and an excess of 25,933 cubic yards of fill is anticipated to be generated during construction of the Facility. Excess fill will be distributed throughout the Facility Site in a manner that does not affect final grading and quality of the cut. Appropriate reuse of the excess cut from grading will be determined during construction when the condition of the soils can be evaluated. The select soil borings completed for the Project Site as part of the geotechnical investigation encounter groundwater at depths ranging from 3.0 to 17.0 feet at approximately 21% of the borings completed; however, this survey did not determine overall groundwater depths across the Project Site. Within the 14 groundwater monitoring wells located in the northern-most portion of the Facility Site, groundwater depth ranges from 8.8 feet to 15.5 feet bgs. It is anticipated that groundwater may be encountered in a

limited portion of the Facility Site during construction, primarily associated with certain support piles that will be used for a majority of the arrays that will have single axis trackers (which are expected to be driven to depths of 10 to 12 feet bgs). In the area where arrays are proposed on top of the coal storage pile and SWDA II landfill, ballast foundations will be used to prevent damage to the protective liner that has been installed beneath these storage areas for groundwater protection (Appendix 5-A, Sheets PV-C.02.08–PV-C.02.09). The support piles will be composed of non-toxic materials that will withstand periodic groundwater inundation, if and when present. Underground installations (e.g., electrical cables and collection systems) are expected to be installed approximately 18 inches to 36 inches bgs (direct current and medium voltage cables) (Appendix 5-B, Sheets PV-E.08.1 and PV-E.08.04). For horizontal direction drilling (HDD), road crossing depth below grade shall be a 6-foot minimum (or as required), and waterway crossing depth below grade shall be calculated in accordance with USACE ERDC/GSL TR-02-9 to minimize inadvertent return risk (Appendix 5-B, Sheet PV-E.08.03). HDD crossings of waterbodies are located in areas 9 and 10 (Appendix 5-B, Sheet PV-E.01.09). HDD crossings of roads and under impermeable lining are located in areas 1, 2, 3, and 8 (Appendix 5-B, Sheet PV-E.01.09).

In addition to avoiding direct work or disruption within the groundwater table, the Applicant will use measures outlined in the SWPPP prepared for the Facility (Appendix 13-B) to further protect groundwater. For example, work areas will be surrounded by perimeter controls to contain individual work areas, only clean wash waters (not including non-toxic soaps, detergents or solvents) will be discharged into stormwater control features located on the Facility Site, secondary containment will be provided for any oil or chemical storage areas, and temporary sanitary facilities will be provided that will be routinely serviced. Therefore, during construction, the Facility is not anticipated to affect drinking water supplies or groundwater quality or quantity. The Facility will have an ORES-approved Complaint Resolution Plan in place that will serve to bring any potential issues related to groundwater to the Applicant's attention for investigation and resolution throughout the construction and operations periods.

Once the Facility is operational, it will reflect limited areas of ground alteration associated with the access roads, and such features as inverters, with the majority of Facility-related features consisting of the solar arrays placed above a ground surface that will be vegetated and maintained with a mix of appropriate native, naturalized, non-invasive

grasses, potentially including pollinator-friendly species. This installation will replace the active agricultural uses that have occurred over many years within the Facility Site, and its associated crop rotation between cultivated row crops and hay fields. While agriculture is an important activity and resource throughout NYS, many agricultural practices of the past 50 to 100 years have resulted in unintended effects on water quality, including groundwater, associated with fertilizers and nutrient (phosphorus and nitrogen) loading.

Some levels of phosphorous and nitrogen are naturally occurring in soils. In naturally vegetated landscapes, there is a balance between uptake (by plants) and release (from decaying vegetation). However, on farmed land, where most of the plant material is removed from the fields during harvest, there is little release of these nutrients back into the soil since vegetation decay is minimal. To combat this loss of nutrients, farmers often practice crop rotation with nitrogen fixing plants, like soybean, and/or apply artificial sources of phosphorous and nitrogen in the form of fertilizer. Phosphorus and nitrogen are essential elements for plant life, but when there is too much of it in surface water, it can speed up eutrophication in nearby waterbodies. Eutrophication occurs when there is an excessive richness of nutrients in a lake or other body of water, frequently due to runoff from the land, which causes dense growth of plant life and, ultimately, death of animal life from lack of oxygen in rivers and lakes. This accelerated eutrophication can have similar undesirable effects to those of harmful algal blooms, including adverse effects on drinking water supplies, recreation, businesses, and property values.

Excess nitrogen in soils can result in long-term effects as well. Some of the nitrogen within fertilizers breaks down into nitrates, which travel easily through the soil, carried by water as it percolates through the soil. Since nitrogen (in the form of nitrates) is water-soluble and can remain in groundwater for decades, the addition of more fertilizer over the years has a cumulative effect. When groundwater from agricultural areas finally reaches a wetland, stream, river, pond, or lake, this also can contribute to excessive concentration of nitrogen.

The Applicant plans the use of low-growing species, such as clovers (nitrogen fixing plants), that support pollinators, which would continue to support agriculture in the vicinity. This type of ground cover would bind nitrogen and phosphorus in the plant material, helping to keep excessive nutrients out of the surface and groundwater. Native vegetation develops a deeper and more diverse root system than hay or row crops and also would eliminate the areas of bare soil associated with plowed fields or row crop agriculture,



further decreasing the potential for sedimentation within runoff that would have the potential to influence surface and groundwaters. Any herbicide use in support of invasive species management on the Facility Site is expected to be limited and infrequent, particularly when compared to existing agricultural practices.

For these reasons, the Facility is not expected to have an adverse effect on drinking water supplies or groundwater quality or quantity, and in fact may contribute to groundwater quality improvements over the life of the Facility. Surface water drinking-water intakes are discussed in section 13(b)(4) of this exhibit.

## **13(b) Surface Water**

### ***(1) Surface Water Map***

Figure 13-2 shows the delineated NYS-regulated surface waters within the Facility Site and within 100 feet of the Facility Site. This figure reflects the jurisdictional status of surface waters on the Project Site approved by ORES (Appendix 13-C) and USACE.

### ***(2) Surface Water Delineation Survey***

As detailed in Exhibit 14, wetland and stream field delineations have been conducted within the Project Site and supplemented by observations and secondary source review in the area 100 feet from the Facility Site as shown on Figures 13-1, 13-2 and 13-3. 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. This effort (documented in Appendix 14-A) included identification of mapped and unmapped waterbodies.

The USACE has provided a Preliminary and Approved Jurisdictional Determination for Project Site wetlands and waterbodies. In the Surface Water Jurisdictional Letter received from the ORES on January 25, 2022 (Appendix 13-C), NYS-regulated surface waters on the Project Site include perennial streams SB-2 and SB-3, both of which are sections of Fish Creek. The SB-2 portion of Fish Creek is located within the Facility Site and the SB-3 portion of Fish Creek is located outside of the Facility Site but are within 100 feet of the Facility Site. Open water feature OW-4 is located within the Facility Site and is NYS-regulated.



### ***(3) Surface Water Characteristics***

The Facility is located within the NYSDEC-defined Lake Ontario and Minor Tributaries Watershed (NYSDEC no date). This major drainage basin drains an area of approximately 2,460 square miles within NYS, excluding the larger/separate watersheds. Elevations within the watershed range from 240 to 1,940 feet above sea level (United States Geological Survey [USGS] 2005). Within this major drainage basin, the Facility is located in the Oak Orchard-Twelve-mile sub-basin (Hydrologic Unit Code [HUC] 04130001). This region receives an average annual precipitation of 38.85 inches (WorldClim 2 2017). Wetlands and open water constitute 11.8% of the sub-basin (USGS 2019). At the watershed level, the Facility Site is located within the Keg Creek-Frontal Lake Ontario sub-basin (HUC 041300010603) (USGS 2022). The United States Environmental Protection Agency (USEPA) identifies the condition of waterbodies in the Keg Creek-Frontal Lake Ontario sub-basin as Condition Unknown. USEPA identifies the Lake Ontario Shoreline, Western (of the Keg Creek-Frontal Lake Ontario sub-basin) as being impaired for swimming and boating and other uses, with algae, bacteria and other microbes, dioxins, nitrogen and/or phosphates, polychlorinated biphenyls (also known as PCBs), and pesticides as the primary identified issues (USEPA no date).

The Lake Ontario and Minor Tributaries Watershed is comprised of the smaller drainage area that lies between the larger rivers (Niagara, Genesee, Oswego and Black rivers) that drain to Lake Ontario (NYSDEC no date). The Lake Ontario Minor Tributaries Watershed is divided into western, central, and eastern sections that extend along 326 miles of the southern shoreline of Lake Ontario in western NYS. The majority of land cover in the Lake Ontario Minor Tributaries Watershed is agriculture (approximately 37 percent [%]) and forest (approximately 33%) (USGS 2019). A smaller portion of land cover is wetlands and waters (approximately 16%), with minimal developed areas (approximately 12%) in the watershed. Sources of impairment for lakes, rivers, and streams due to fish consumption advisories in the Niagara County portion of the watershed and western portion of the Lake Ontario shoreline include PCBs, mirex (an insecticide), and dioxins (environmental pollutants) (NYSDEC 2020). There are no identified impaired waterbodies within the Facility Site. Based on the NYSDEC's list of Prohibited and Regulated Invasive Species of New York, no aquatic invasive species were observed during wetland and waterbody delineations.

The NYSDEC has classified waterbodies state-wide according to their best use, as either AA, AA(T), A, A(T), B, B(T), C, C(T), or D. Class AA or A waterbodies are of the highest water quality. AA or A classes indicate that the best uses of the waterbody are as follows: a source of water supply for drinking, culinary, or food processing purposes, primary and secondary contact recreation, and/or fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival (6 NYCRR-NY 701.7). The best usage of Class C waters is fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes (6 NYCRR-NY 701.8). The best usage of Class D waters is fishing. Due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery, or stream bed conditions, the waters will not support fish propagation. These waters shall be suitable for fish, shellfish, and wildlife survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes (6 NYCRR-NY 701.9). Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning events. Certain waters of NYS are listed as protected due to their classification level.

Waterbodies with a classification of AA, A, or B, or with a classification of C with a standard of (T) or (TS) are collectively referred to as “protected waterbodies,” and are subject to the provisions of the Protection of Waters regulations. Special requirements apply to sustain (T) and (TS) waters that support sensitive fisheries resources. Fish Creek is located within the Lake Ontario and Minor Tributaries Watershed, and USGS HUC 8 Sub-basin Oak Orchard-Twelvemile (HUC 04130001). NYSDEC classification and standard of Fish Creek is C (best usage for fishing). Fish Creek (Regulatory ID 847-707) is a NYSDEC-mapped waterbody within the Facility Site and is the only ORES-jurisdictional waterbody present due to its navigability (Figure 13-2). The other NYSDEC-mapped waterbodies present within the Facility Site are small, unnamed waterbodies or tributaries that are not ORES-jurisdictional. There are several unmapped waterbodies associated with stormwater drainage ditches found within the Facility Site that are not ORES-jurisdictional as well. Waterbodies that are mapped by NYSDEC (Classification C) within Facility Site and within 100 feet of the Facility Site include Streams SA-2, SA-3, SA-9, SA-13, SA-14 (Table 13-1).

**Table 13-1. Streams Identified within the Facility Site and within 100 Feet of Facility Site**

Stream ID <sup>1</sup>	U.S. Geological Survey Name	Bankfull Width <sup>2</sup> (feet)	Flow Regime	New York State Department of Environmental Conservation (NYSDEC) Water Quality	NYSDEC Part ID Number	NYSDEC Waters ID Number	Description
SA-1	UNT	2	Intermittent	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch that is sourced from surface flow from the adjacent field.
SA-2	UNT	5	Intermittent	C	N/A	N/A	A mapped intermittent stream sourced from surface flow from adjacent farm fields and residential yard and pond located outside the Project Site.
SA-3	UNT	4	Intermittent	C	N/A	N/A	A mapped intermittent stream that is sourced from surface flow from adjacent fields.
SA-5	UNT	3	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch that is sourced from the adjacent field and access road drainage.
SA-6	UNT	3	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch that is sourced from the adjacent field and access road drainage.
SA-7	UNT	2.6	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch that is sourced from the adjacent field and access road drainage.

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Stream ID <sup>1</sup>	U.S. Geological Survey Name	Bankfull Width <sup>2</sup> (feet)	Flow Regime	New York State Department of Environmental Conservation (NYSDEC) Water Quality	NYSDEC Part ID Number	NYSDEC Waters ID Number	Description
SA-8	UNT	3	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch that is sourced from the adjacent field and access road drainage. Connects to a retention pond.
SA-9	UNT	4	Perennial	C	847-707	ONT-145	A perennial stream that flows northeast off the Project Site. Sourced from SA-13 and connected through a culvert under an existing access road.
SA-10	UNT	4	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch located adjacent to an existing access road.
SA-11	UNT	4	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage that flows north off the Property Site. Several concrete check dams put in place.
SA-12	UNT	4	Excavated Ditch	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped drainage ditch located on the side of an existing access road.
SA-13	UNT	5	Excavated Ditch	C	847-707	ONT-145	A mapped drainage system that flows east through multiple retention ponds within the former coal plant. Connects to Stream SA-9 through retention pond and culvert.

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Stream ID <sup>1</sup>	U.S. Geological Survey Name	Bankfull Width <sup>2</sup> (feet)	Flow Regime	New York State Department of Environmental Conservation (NYSDEC) Water Quality	NYSDEC Part ID Number	NYSDEC Waters ID Number	Description
SA-14	UNT	5	Excavated Ditch	C	847-707	ONT-145	A mapped drainage system that flows east through multiple retention ponds within the former coal plant.
SB-1	UNT	2	Ephemeral	Not protected, unmapped by NYSDEC	N/A	N/A	An unmapped ephemeral drainage that flows north into Wetland WA-4.
SB-2	Fish Creek	12	Perennial	C <sup>3</sup>	847-707	ONT-145	Upper perennial reach of Fish Creek
SB-3	Fish Creek	12	Perennial	C <sup>3</sup>	847-707	ONT-145	Lower perennial reach of Fish Creek

1 – SA-4 and SB-4 were delineated and are depicted on Figure 13-2; however, they are not located within the Facility Site or the adjacent 100-foot area and therefore are not listed in this table.

2 – Note that widths are averages based on the assessed limits of each feature.

3 - Segments of Fish Creek delineated within the Project Site were identified by the Office of Renewable Energy Siting (ORES) as an unprotected (per Environmental Conservation Law 05-0501) navigable (per Environmental Conservation Law 15-505) waterbody in their jurisdictional determination letter received for the Facility on January 25, 2022. According to Article 15 of the New York State Department of Environmental Conservation Environmental Conservation (NYSDEC) Law, unprotected, navigable streams are regulated up to the mean high-water line. NYSDEC protected streams are protected to the top of their banks, which are considered to extend no more than 50 feet horizontally from the mean high-water line. There is no setback or adjacent area associated with unprotected, navigable streams. Fish Creek is delineated within the Project Site as SB-2 through SB-4, with sections SB-2 and SB-3 identified as New York State-regulated as a navigable waterway under ORES’ jurisdiction (Appendix 13-C).

Data recorded during the wetland and stream delineation described above includes stream name, associated wetlands, flow regime (perennial, intermittent, or ephemeral), direction of flow, water width, bank-to-bank width, bank height and slope, water depth, bottom and bank substrates, observed water quality, channel meander, and adjacent vegetation type. In addition, indicators of aquatic habitat, wildlife use, and soil erosion potential were recorded. Table 13-1 summarizes key information for the identified stream segments found within the Facility Site and within 100 feet of the Facility Site (see also Figure 13-2). The NYSDEC establishes water quality standards criteria for specific substances, which are found in NYS regulation 6 NYCRR Part 703. In the absence of established water quality standards, numeric guidance values are derived and can be found in the guidance document for Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC 1998). In the absence of established water quality standards, numeric guidance values are derived and can be found in the guidance document for Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (available at: Division of Water Technical and Operational Guidance [Series 1.1.1](#)).

Of the 16 stream segments identified within the Facility Site and adjacent 100-foot area there are three perennial streams, three intermittent streams, one ephemeral stream, and nine excavated drainage ditches. The excavated drainage ditches are associated with the former coal plant. Due to careful siting and consideration of potential environmental impacts, the Facility has been designed to avoid any direct impacts to the ORES-jurisdictional stream segments (SB-2 and SB-3), open water feature OW-4, and other stream segments within the Facility Site. The useable space needed to avoid environmental impacts has been maximized, and activities located within 50 feet of stream SB-2 and SB-3 are limited to selective tree/shrub cutting that is necessary to ensure adjacent vegetation does not result in shading of solar panels<sup>1</sup>. Panels are sited within 50

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<sup>1</sup> Selective tree/shrub cutting will be conducted in site-specific locations for the purposes of addressing shading concerns in areas where existing vegetation is located in proximity to photovoltaic arrays, as identified in Appendix 5-A, Sheets PV-C.01.01 - PV-C.01.10. To prevent ground-disturbance in areas proposed for selective tree/shrub cutting, tree and/or shrub stems will be cut above ground level using hand tools (hand saw or chain saw) and the logs and vegetation will be removed from the cutting area by hand (light enough to carry out, or cut into manageable sized pieces that allow for hand carrying and moving). Prior to construction, a site-specific forest stand survey will be conducted to identify and flag individual trees/shrubs or tree/shrub stands that are to be removed using hand-removal techniques. This information will be

feet of open water feature OW-4, which is an allowed use. A summary of open water feature OW-4 is provided in Table 13-2.

**Table 13-2. ORES-Jurisdictional Open Water Features within the Facility Site and within 100 Feet of Facility Site**

Open Water Feature ID	Acreage	Description
OW-4	0.10	An abandoned man-made pond that was potentially used for drainage for surrounding agricultural land.

There is selective tree/shrub cutting proposed within the vicinity of streams SA-9, SA-11, SA-14, SB-1, and within 50 feet of SB-2 and SB-3 (ORES-jurisdictional Fish Creek) that cannot be avoided. These activities will be conducted using hand-removal methods (no mechanized equipment and does not involve grading or grubbing of tree stumps) and will not result in direct impact to the stream bed or bank. The closest selective tree/shrub cutting activity to ORES-jurisdictional Stream SB-3 is at approximately 30 feet from stream bank and the closest selective tree/shrub cutting activity to ORES-jurisdictional Stream SB-2 is at approximately 5 feet from stream bank, resulting in an estimated 2.40 acres of selective tree/shrub cutting. The vegetation cutting at this distance from the stream channel is not anticipated to affect stream shading due to the distance of tree cutting near SB-3 and the observed open canopy around SB-2. Use of hand-removal methods for selective tree/shrub cutting is not anticipated to result in ground disturbance. However, if tree/shrub cutting results in ground disturbance within 50 feet of the stream bank of SB-2 or SB-3, the area will be restored and revegetated with an appropriate native, naturalized, non-invasive seed mix to stabilize soils via generation of fine root biomass to prevent erosion. Only vegetation required to be removed to prevent shading of panels will be cut, with low height vegetation left in place to the extent practicable to provide erosion control. Existing grasses, forbs, and shrubs within the selective tree//shrub cutting area will be allowed to recover during the post-construction period. In areas requiring selective tree/shrub cutting within 50 feet of SB-2 and SB-3 that do not have flat or gentle slopes,

incorporated into a Tree Cutting Plan that will be prepared for the Facility Site, to include height, diameter, species, growth habit, and potential hazard of trees/shrubs to be removed using hand-removal techniques only. Measures for hand-removal of trees/shrubs and measures to prevent ground-disturbance from occurring during these activities will be identified in the Tree Cutting Plan, that will be approved by ORES prior to implementation.

silt fence and other erosion and sediment control measures will be installed to prevent sedimentation of adjacent areas, including waterbodies or wetlands.

Two ORES-jurisdictional stream segments are located within 100 feet of the Facility Site (SB-2 and SB-3). The streams (Fish Creek) are classified by NYSDEC as navigable and Class C streams, with no trout designations for either (Table 13-3). No aquatic species of concern were identified during background review, surveys, or agency coordination phases of the pre-construction surveys.

Therefore, it is unlikely that the proposed selective tree/shrub cutting activities located within the vicinity of identified stream features will affect any threatened, endangered, NYS species of special concern, or species of greatest conservation need. No aquatic invasive species were noted for these stream sections during wetland and stream delineations or other Project Site surveys. A review of iMapInvasives data also did not identify any aquatic invasive species within the Project Site (iMapInvasives 2022).



**Table 13-3. ORES-Jurisdictional Streams Identified within 100 feet of the Facility Site**

Stream ID	U.S. Geological Survey Name	Bankfull Width <sup>1</sup> (feet)	Flow Regime	New York State Department of Environmental Conservation (NYSDEC) Water Quality	NYSDEC Part ID Number	NYSDEC Waters ID Number	NYSDEC Water Quality Guidance Value Types for Toxic Pollutants based on Water Class <sup>2</sup>	Description
SB-2	Fish Creek	12	Perennial	C <sup>3</sup>	847-707	ONT-145	Health (Fish Consumption), Aquatic (Chronic), Aquatic (Acute), Wildlife, and Aesthetic	Upper perennial reach of Fish Creek. Flows east-northeast into forested wetland WA-2 and eventually off the Project Site.
SB-3	Fish Creek	12	Perennial	C <sup>3</sup>	847-707	ONT-145	Health (Fish Consumption), Aquatic (Chronic), Aquatic (Acute), Wildlife, and Aesthetic	Lower perennial reach of Fish Creek. Flows north off the Project Site.

1 – Note that widths are averages based on the assessed limits of each feature.

2 – Source: NYSDEC 1998.

3 – Segments of Fish Creek delineated within the Project Site were identified by the ORES as an unprotected (per Environmental Conservation Law [ECL] 05-0501) navigable (per ECL 15-505) waterbody. Unprotected, navigable streams are regulated up to the mean high-water line. NYSDEC protected streams are protected to the top of bank, extending no more than 50 feet horizontally from mean high-water line. No setbacks or adjacent areas are associated with unprotected, navigable streams. Fish Creek includes segments SB-2 through SB-4, with sections SB-2 and SB-3 identified as NYS-regulated as a navigable waterway under ORES’ jurisdiction (Appendix 13-C).

#### i. Surface Water Monitoring Results

Surface water monitoring results for the Project Site are described above in section 13(a) of this exhibit. Constituent concentrations for samples collected in Fish Creek upstream and downstream of SWDA II in 2021 were comparable and indicate no impacts from the SWDA. Similarly, the surface water sample collected from the small pond located northeast of SWDA II did not exhibit elevated concentrations of any leachate indicator parameters (GEI Consultants 2022).

#### ***(4) Downstream Drinking Water Supply Intakes***

There are no surface water drinking water intakes within one mile of the Facility (NYSDEC 2016). There is a non-drinking water surface water intake for the former coal plant identified within the Facility Site (Figure 13-3), identified as Withdrawal – Power – Fossil Fuel in the NYS GIS database; and likely was used to support the former coal plant activities. The nearest downstream potential surface water drinking-water supply intake is the Village of Lyndonville Public Water Supply located 9.5 miles to the east. No impact to surface drinking water supplies or water supply intakes is anticipated as a result of the Facility.

#### ***(5) Avoidance of Impacts to NYS-Protected Waters***

The siting and layout design process has considered the locations of NYS-protected waterbodies, with a focus on avoidance of impacts to these resources. Buildable areas are located along Fish Creek. The SB-2 portion of Fish Creek is located within the Facility Site and the SB-3 portion of Fish Creek is located outside of the Facility Site but is within 100 feet of the Facility Site. However, Project components have been excluded from these segments of Fish Creek. Similarly, the site has been designed to avoid crossings, including HDD, of this NYS-regulated waterbody. There are no proposed impacts to ORES-jurisdictional Streams SB-2 and SB-3. The Facility Site is located approximately 50 feet from SB-2 and at least 30 feet from SB-3. Closest activities proposed to these streams includes selective tree/shrub cutting, laydown placement, and security fencing. There is 2.40 acres (104,544 square feet) of proposed selective tree/shrub cutting within 50 feet of SB-2 and SB-3 to prevent shading of solar panels by vegetation in select areas where needed. Tree/shrub clearing and grubbing, and selective tree/shrub cutting areas located throughout the Facility Site are shown on Figure 3-3, with more detailed views of these areas shown on the Figure 3-11 map set.

***(6) Minimization of Impacts on NYS-Protected Waters***

There are no proposed direct impacts to NYS-protected waters or perennial streams. As noted above selective tree/shrub cutting is necessary in some areas to prevent shading of solar panels, and in these areas, encroachment of the stream bank is limited to 30 feet or more along SB-3 and 5 feet or more along SB-2.

***(7) Stream Restoration and Mitigation Plan***

There is no requirement for stream restoration or compensatory mitigation as there are no proposed impacts to NYS-protected waters.

**13(c) Stormwater**

The proposed design of the Facility does not result in the creation of significant impervious areas. Very limited amounts of impervious areas would be created due to construction of new access roads, substation foundations, inverter skids, and ballast foundations and sleepers to support electrical cables in areas where the panels will be installed on top of the coal storage pile and SWDA II landfill area. Best management practices (BMPs) features such as dry swales, filter strips, stormwater retention, and culverts for conveyance of storm flows have been incorporated into the Facility design to control stormwater runoff and protection of water quality. In combination with operational good housekeeping practices (e.g., spill prevention planning, ongoing maintenance of the stormwater management system, vegetation maintenance) to ensure the stormwater management system serves only clean rainwater, these measures will be protective of water quality, control erosion, and avoid an increase in peak discharge flood rates. A portion of the stormwater basins associated with the former coal plant, will be retained to provide stormwater control for the Facility (Appendix 5-A, Sheets PV-C.02.01–PV-C.02.10).

***(1) Stormwater Pollution Prevention Plan and State Pollutant Discharge Elimination System Permit***

A SWPPP is included in Appendix 13-B. Prior to commencement of construction, a Notice of Intent for Stormwater Discharges from Construction Activity will be submitted to NYSDEC, along with an updated version of the SWPPP, to seek coverage under the most recent State Pollutant Discharge Elimination System General Permit for Stormwater Discharges (the current General Permit has an expiration date of January 28, 2025). The SWPPP follows the form and meets the general requirements for such a document but will be refined to incorporate final design details and identify the specific parties

responsible for monitoring, recordkeeping, and compliance associated with the commitments reflected in the stormwater management system design and BMPs.

The erosion and sedimentation devices included in the SWPPP were selected to avoid the discharge of pollutants and to assist in the prevention of a violation of water quality standard and meet the performance criteria outlined in the 2015 NYS Stormwater Management Design Manual (NYSDEC 2015).

The SWPPP is intended to be a living document that identifies details regarding the construction process and phasing, BMPs that will be implemented, and means to ensure that the selected controls are functioning under changing conditions throughout the construction effort. BMPs are identified in the SWPPP that may be added or adjusted as conditions warrant. They include such measures as:

- A stabilized construction entrance to prevent tracking of soils onto public streets;
- Stabilized locations where temporary soil stockpiles are located;
- Perimeter silt fencing;
- Careful culvert sizing and design;
- Revegetation; and
- Other measures to reduce the erosion and sedimentation such as check dams, erosion control blankets, vegetative filter strips, geotextile filter bags, and riprap outlet protection.

The Final SWPPP prepared for construction will identify and detail stormwater management pollution prevention, and erosion and sediment control measures necessary during and following completion of construction. Notwithstanding, typical erosion and drainage practices and structures including storm pipe, silt fence, temporary check dams, dry swales, slope protection, inlet/outlet protection, vegetation protection, stabilized construction entrances, and vegetation filter strips will be implemented to protect waters adjacent to or downstream of the Facility Site, maintain water quality of stormwater runoff, and to avoid impacting water quality of waters exiting the Project area. Due to the grading amounts anticipated to be required, the risk of erosion and sedimentation is expected to be limited, as each of the development sections of the Facility will be contained within distinct areas having separately-functioning erosion and sediment control measures

(Appendix 5-A, Sheets PV-C.04.01–PV-C.04.10). 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.

## ***(2) Post-Construction Stormwater Management Practices Plan***

The SWPPP provides information on stormwater management practices, including erosion and sediment control (vegetative and structural measures, temporary and permanent measures), construction phasing and disturbance limits, waste management and spill prevention, and site inspection and maintenance. Pre- and post-development hydrology, in addition to evaluation of runoff and drainage patterns, will be analyzed as part of stormwater design in accordance with final Facility layout, and if necessary, the SWPPP will be updated prior to construction.

## **13(d) Chemical and Petroleum Bulk Storage**

### ***(1) Spill Prevention and Control Measures***

On a typical solar project, spill containment is included at the substation transformer. The volume of oil in the large power transformer proposed for the Somerset Collector Substation (Facility Substation) is expected to trigger the requirement for a SPCC plan. A SPCC plan will be developed for approval by NYSDEC and ORES as part of the Facility's compliance filings prior to commencement of construction. The SPCC plan will describe the procedures, methods, and equipment to be used during Facility construction to prevent the discharge of oil into or upon waters and wetlands, adjoining shorelines or any other location that may affect other natural waters or wetlands. Along with describing the countermeasures anticipated for use within the Facility Site, the SPCC plan will establish inspection, reporting, training, and recordkeeping requirements for the aboveground oil storage, primarily located in the Facility Substation transformer. Routine inspection of the storage of these materials will be conducted to ensure compliance with best management practices.

Aside from the Facility Substation transformer, the only other large storage of potentially hazardous materials on the Facility 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. For spills, the power transformer at the Somerset Substation has an oil containment pit. The distance between the Somerset Substation's

power transformer and the inverter transformers is large enough that a fire at either location would not trigger a fire at the other. As such, the inverter-transformers are considered to be separate sites and would be analyzed separately for purposes of an SPCC. This is typical practice for wind and solar projects, including projects which have previously been approved in NYS and other locations.

The SPCC plan will be organized to follow the requirements of 40 Code of Federal Regulations §112.7. This will include details regarding identification of responsible parties, a description of the Facility and locations of material storage, protection measures that will be in place to prevent a potential release, and procedures to be implemented in the unanticipated event of a release. Inspections, training, and other procedures also will be specifically identified such that appropriate compliance records can be maintained.

### ***(2) Storage or Disposal of Regulated Substances***

It is not anticipated that storage or disposal of large volumes of substances subject to regulation under the NYS' chemical and petroleum bulk storage programs (e.g., fuel oil, petroleum) will occur on the Facility Site. During construction and operations, small quantities of fuel and solvents will be on site for vehicles and cleaning. All fuel will be stored within the fuel tanks of the vehicles or in a 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 operations and maintenance trailers. There will be no storage of materials in or within 100 feet of wetlands or surface waters; with no equipment fueling within or proximal to wetlands or surface waters.

### ***(3) Storage of Hazardous Substances Compliance with Local Law Storage Regulations***

No construction, operational or maintenance activities at the Facility are anticipated to require petroleum or other hazardous chemicals to be stored permanently on the Facility Site. Should any be required, the handling, storage, and disposal of any such substances would be in compliance with all applicable local laws, NYS 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 a 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 operations and maintenance trailers to be located on site.

The type of battery used in substation control buildings commonly contain lead acid it is a reliable long-term battery option used in substations. Two 125-volt direct current battery banks are proposed in the Facility Substation control building (Appendix 5-B, Sheet HV-P.14.01). The specific battery type to be used has not been identified for the preliminary layout and is expected to be identified during the procurement process. If batteries containing lead acid are ultimately selected for use in the control building, these typically are installed with a drip pan to prevent spills, including any acid spills/leakage, that would protect the building structure and prevent any contamination into the outside environment of the building.

Chapter 22 of the Town of Somerset Ordinance describes the Town's Hazardous Materials Response Plan, which was established in accordance with the Occupational Safety and Health Administration 29 Code of Federal Regulations 1910.120(q)(2)(i) through (xii). The ordinance describes pre-emergency planning, personnel that will respond to a hazardous material emergency, notification requirements (to the Niagara County Control Center), and incident response procedures, including identification of safe distances and places of refuge, site security and control, evacuation routes and procedures, and decontamination. The Town utilizes this plan, along with the Niagara County Hazardous Materials Response Plan to respond to local hazardous materials incidences and emergencies. The Town of Somerset recognizes the Niagara County Hazardous Materials Response Plan as the primary source for implementing a response to a hazardous materials emergency. The Facility's proposed Safety Response Plan is provided as Appendix 6-B and would not interfere with the Town's implementation of their Hazardous Materials Response Plan requirements.

### **13(e) Aquatic Species and Invasive Species:**

#### ***(1) Biological Aquatic Resource Impacts***

No aquatic species of concern were observed during background review, surveys, or agency coordination phases of the pre-construction surveys. Therefore, it is unlikely that the proposed selective tree/shrub cutting activities conducted within the vicinity of stream features will affect any threatened, endangered, NYS species of special concern, or species of greatest conservation need. No perennial streams will be impacted by the

Facility. The drainage ditches are located near open fields and access roads, similar to those that will be in place with the operating Facility.

No aquatic invasive species were noted during wetland and stream delineations or other surveys for the Project Site, and a review of iMapInvasives data also did not identify any aquatic invasive species within the Project Site (iMapInvasives 2022).

## ***(2) Avoidance, Minimization, or Mitigation Measures for Biological Aquatic Resources***

As noted above, no listed aquatic species are expected to be impacted by the Facility. The Facility has avoided direct impacts to NYS-regulated streams, as well as the other streams delineated within the Project Site. There is total of 2.40 acres of selective tree/shrub cutting approximately 30 feet from the stream bank of SB-3 and within 5 feet of SB-2 that is necessary to prevent vegetation shading of the photovoltaic array systems. This will not involve grubbing of tree stumps or impacting the topography of areas adjacent to the streams given only hand-clearing techniques will be used. Due to the distance from the stream bank (5 to 30 feet), selective tree/shrub cutting is not expected to affect stream shading. Use of hand clearing techniques for selective tree/shrub cutting is not anticipated to result in ground disturbance. However, if selective tree/shrub cutting results in ground disturbance within 50 feet of the stream bank of SB-2 and SB-3, this area will be restored and revegetated with an appropriate native, naturalized, non-invasive seed mix to stabilize soils via generation of fine root biomass to prevent erosion. Only vegetation required to be removed to prevent shading of panels will be cut, with low height vegetation left in place to extent practicable to provide erosion control. Existing grasses, forbs, and shrubs within the cleared area will be allowed to recover during the post-construction period. In areas requiring selective tree/shrub cutting within 50 feet of SB-2 and SB-3 that do not have flat or gentle slopes, silt fence and other erosion and sediment control practices will be installed to prevent sedimentation of adjacent areas, including waterbodies or wetlands.

Implementation of the BMPs and other measures identified in the SWPPP will ensure construction of the Facility will not have any measurable effect on the water quality standards of the streams that could potentially be affected.

Given the characteristics of the stream segments and the type of work proposed, impacts to surface waters have been avoided and will not be material. BMPs will be used to control



erosion and sedimentation during the construction effort, with reseeding and stabilization occurring prior to removal of the temporary BMP features.

Once the Facility construction is complete, the native, naturalized, non-invasive, low-growing vegetation proposed for the Facility will stabilize the substrate and continue to reduce the potential for downstream erosion and sedimentation. The lack of routine disturbance, present when active agriculture is practiced, is expected to have benefits to adjacent stream systems, associated biological habitat and downstream water quality over time.

### **13(f) Water Quality Certification (WQC)**

Following the final design of the Facility and consultation with ORES, the Applicant will prepare and submit a request to obtain a Water Quality Certification (WQC) indicating that the proposed Facility construction and operation will be in compliance with the water quality standards set forth in Title 6 of the NYCRR §608.9 regarding Use and Protection of Waters. The WQC from ORES will be obtained by the Applicant prior to construction.

#### ***(1) WQC Request***

In accordance with Section 401 of the Clean Water Act (CWA), if construction or operation of a proposed major renewable energy facility would result in any discharge into WOTUS and require a federal license or permit, the Applicant shall request and obtain prior to commencing construction, a WQC indicating that the proposed activity will be in compliance with water quality standards, as set forth in 6 NYCRR §608.9. The Applicant anticipates the Facility shall comply with a USACE CWA Nationwide Permit (NWP); therefore, the Applicant will apply for a Section 401 WQC and will comply with NWP general and regional conditions (anticipated to be for NWP 51). The WQC request is expected to be submitted as soon as practicable. Specific information regarding water quality standards and the resources delineated on the Project Site can be found in the Wetland and Stream Delineation Report (Appendix 14-A) of Exhibit 14. The Applicant expects that the construction and operation of this Facility shall comply with the NYS Water Quality standards, as described in 6 NYCRR §608.9, pursuant to Section 401 of the CWA.

#### ***(2) Related Federal Permit Applications***

The Applicant has designed the Facility such that coverage under a CWA NWP is applicable. The impacts to USACE-jurisdictional wetlands are anticipated to fall beneath

the NWP threshold that would trigger the need for submittal of a pre-application notification (i.e., application) to the USACE (Exhibit 14). Due to the limited amount of impacts to jurisdictional waters of the United States (<0.1 acre), a pre-construction notification for the nominal jurisdictional waters of the United States is not required (Exhibit 14). Given the proposed activities qualify for coverage under a CWA NWP, the Applicant shall comply with the applicable NWP (likely NWP 51), NWP General and Regional Conditions, and NYS Section 401 WQC conditions during construction and operation of the Facility.

Additional information regarding these and other anticipated permit submittals is discussed in Exhibit 25. The Applicant received their Preliminary and Approved Jurisdictional Determination for Project Site from USACE on March 2, 2023.

***(3) Compliance with 6 NYCRR §608.9***

As stated above, the Applicant is seeking a WQC pursuant 6 NYCRR §608.9 concurrently with this filing. The Applicant does not anticipate the Facility will impact water quality.

***(4) Pertinent Contact Information Related to WQC***

The USACE federal wetlands process for the Facility is described above in section 13(f)(2) of this exhibit. The Application will be filed with the Buffalo District of the USACE located at 1776 Niagara Street, Buffalo, New York, 14207.

***(5) Plan and Timetable for WQC Request***

Section 13(f)(1) of this exhibit provides the anticipated schedule for submittal of the Facility's request for a WQC. The Applicant expects the Facility to be in compliance with NYS water quality standards.

## References

- ANS Geo. 2021. Geotechnical Report (Rev. 1). AES – Somerset Solar Project. November 21, 2021. 311 pp.
- GEI Consultants. 2022. Year 2021 Annual Groundwater/Surface Water Quality Monitoring Report and Solid Waste Operating Report. Prepared for Heorot Power – Somerset Operating Company, Barker, New York. May 2022. 195 pp.
- iMapInvasives. 2022. Public Map. Available online at: <https://www.nyimapinvasives.org/>. Accessed November 14, 2022.
- New York State Department of Environmental Conservation (NYSDEC). 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Available online at: [Division of Water Technical and Operational Guidance Series 1.1.1 \(ny.gov\)](#). Accessed July 29, 2022.
- NYSDEC. No date. Lake Ontario and Minor Tributaries Watershed. Available online at: [Lake Ontario and Minor Tributaries Watershed - NYS Dept. of Environmental Conservation](#). Accessed January 3, 2023.
- NYSDEC. 2015. New State Stormwater Management Design Manual. 2015. Available online at: <https://www.dec.ny.gov/chemical/29072.html>. Accessed July 29, 2022.
- NYSDEC. 2016. NYS Water Withdrawals. Bureau of Water Resource Management. November 28, 2016. Available online 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 July 25, 2022.
- NYSDEC. 2020. The Proposed Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy. Available online at: [2018 Section 303\(d\) List of Impaired Waters Requiring a TMDL/Other Strategy \(ny.gov\)](#). Accessed January 3, 2023.
- United States Environmental Protection Agency (USEPA). No date. How's My Waterway? Watershed: Keg Creek-Frontal Lake Ontario (041300010603). Available online at: [How's My Waterway - Community \(epa.gov\)](#). Accessed January 6, 2023.
- United States Geological Survey (USGS). 2019. National Land Cover Database. 2019 Land Cover Conterminous United States. Accessed 06/2021. Yang, L., et al., Published

- 12/2018. A new generation of the United States National Land Cover Database: Requirements, research priorities, design, and implementation strategies, ISPRS Journal of Photogrammetry and Remote Sensing 146: 108-123. Available online at: <https://www.mrlc.gov/data>. Accessed January 2023.
- USGS. 2005. National Elevation Dataset 10m. Purchased and downloaded June 2005. Available online at: [National Elevation Dataset \(NED\) \(usda.gov\)](https://www.fda.gov/national-elevation-dataset-ned). Accessed January 2023.
- USGS. 2022. Science in Your Watershed. Locate Your Stream Site by 12-digit HUC - 041300010603 Keg Creek-Frontal Lake Ontario. Available online at: [Science in Your Watershed: Locate Your Stream Site by 12-digit HUC in 041300010603 Keg Creek-Frontal Lake Ontario \(usgs.gov\)](https://www.usgs.gov/science-in-your-watershed). Accessed January 3, 2023.
- WorldClim 2. 2017. World Clim v2.1 image service provided by ESRI. Fick, S.E. and R.J. Hijmans, 2017. New 1km spatial resolution climate surfaces for global land areas. International Journal of Climatology 37 (12): 4302-4315. Image service available online at: [https://earthobs3.arcgis.com/arcgis/rest/services/Mean\\_Precipitation\\_WorldClim/ImageServer](https://earthobs3.arcgis.com/arcgis/rest/services/Mean_Precipitation_WorldClim/ImageServer). (ArcGIS online organizational subscription required) Accessed January 2023.