Witness: Andrew J. Bazinet

2a-Connecticut Siting Council Third Late-Filed Exhibit:

Submission of a Draft Water Management Plan.

Response:

CPV would file a Water Supply Plan for the Council's review as part of its Development and Management Plan. CPV anticipates that the Water Supply Plan would be similar in format to the attached "Water Supply Plan" included in the 2001 Development and Management Plan submitted and approved by the Council in Docket No. 192. The Water Supply Plan would be updated to reflect water supply and usage changes described in the record for this docket.

DOCKET NO. 192

TOWANTIC ENERGY LLC

CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
DEVELOPMENT AND MANAGEMENT PLAN
CONDITION 2.d—WATER SUPPLY AND FUEL STORAGE/HANDLING PLAN

In accordance with the Connecticut Siting Council's June 23, 1999 Decision and Order (Docket No. 192, Item 2.d) approving the Towantic Energy LLC's (Towantic) Application for a Certificate of Environmental Compatibility and Public Need (Certificate or Application), Towantic herewith submits the plan for water supply and fuel oil storage and handling for capability to burn distillate oil continuously for up to 720 hours per year for the Towantic Energy Project (Project). The following discussion provides a description of the plan.

FUEL OIL SUPPLY PLAN

During the Siting Council ("the Council") hearings conducted during the spring of 1999 for the Project, details were provided to the Council on plans for oil-fired operation and the provisions for support of such operations. The Project will construct two 886,000-gallon usable capacity on-site fuel oil storage tanks to support oil-fired operation. These on-site distillate fuel oil storage tanks will sustain plant operation at maximum electric generation for 67 hours. As soon as the first tank is depleted the second tank will be placed into service and distillate fuel deliveries by truck will commence to refill the first tank. This pattern will continue as long as needed. Locations of tank truck oil unloading facilities are shown on the Plot Plan (Drawing C005, included in Tab A of the Development and Management Plan). At the maximum fuel oil burn rate of 26,400 gallons per hour, four tanker truck deliveries will be required each hour, assuming approximately 7,000 gallons per tanker truck. An oil unloading area, equipped to unload four trucks simultaneously and transfer the fuel oil to the oil storage tanks, is located adjacent to the oil storage tanks. The oil unloading area contains four (4) fuel oil unloading stations. Each fuel oil unloading station contains a fuel oil transfer pump, an in-line strainer, a positive displacement flow meter, and associated piping and valves. The oil unloading area is outlined with a retention curb designed to contain approximately 20,000 gallons and contains an oil collection sump. Tanker trucks waiting to be unloaded will be queued along the east plant service road.

WATER SUPPLY PLAN

When burning fuel oil it is necessary to inject demineralized water into the combustion turbines along with the fuel oil in order to meet nitrogen oxide (NO_x) emission standards. The amount of water (by weight) is approximately equal to the amount of fuel oil consumed. This requirement dictates the additional need for 469.5 gpm (0.676 mgd) of demineralized water when the unit is operated at full load on a 59°F day. When this value is combined with the normal plant full load steam cycle requirement of 21.7 gpm (0.031 mgd) the resulting total requirement is 491.2 gpm (0.707 mgd) of demineralized water. As indicated on the attached diagram there are other plant uses for potable water that when

added to the demineralized water consumption bring the total plant water consumption to 749,000 GPD.

To support these requirements, the Project Water Supply Plan consists of the following provisions:

1. ON-SITE STORAGE OF DEMINERALIZED WATER

The Project's onsite demineralized water treatment system consists of two 60 gpm capacity demineraled water trains, that when operated continuously yields a flow of approximately 108 gpm (0.156 mpd) of demineralized water. This level of operation, coupled with the on-site 2,000,000-gallon demineralized water storage tank will sustain plant operation approximately 87 hours. Thereafter, the deficit demineralized water requirement (491 gpm minus 108 gpm equals 383 gpm or 0.551 mgd) will be supplied from tank trucks or other supply sources that will feed temporary demineralizer unit(s) to be stationed at the site.

2. SUPPLEMENTAL DEMINERALIZED WATER PRODUCTION EQUIPMENT

Portable demineralizer equipment will be obtained from Ecolochem, located in East Hartford, Connecticut or from a similar vendor. Ecolochem can provide conventional demineralizer and filtration equipment mounted in an 8-foot by 48-foot trailer that includes all ancillary supplies, piping and utility connections. One trailer unit can meet the Project's treated water production requirement. The trailer is trucked to the site, connected to the water system and remains in place until the demineralizer agent requires regeneration. A new trailer is brought to the site to replace the depleted unit, which is returned to Ecolochem's site for regeneration. Based on the total dissolved solids of the Heritage water, the trailer units will be replaced every 12 hours based on maximum production rate.

3. WATER SUPPLY FROM HERITAGE WATER COMPANY

All of the Project's raw water requirements during normal operation will be provided by Heritage Village Water Company (Heritage). Under full load gas-fired operation the plant will consume 59,000 gals. per day (average). Heritage has committed to supply the Project with up to a maximum of 218,000 gals. per day, consistent with the maximum amount stated in the Application for Site Certification for the Project.

During emergency conditions of extended oil fired operation, when the demineralized water storage has been consumed, the total plant water requirement will have to be met by the incoming supply flow. At such times, and to the extent that the Heritage system has some uncommitted water supply capacity available, Heritage would supply some portion of the additional requirement. Any shortfall in water flow that Heritage is unable to supply via the permanent water supply system would be met through the use of over the road water tank trucks.

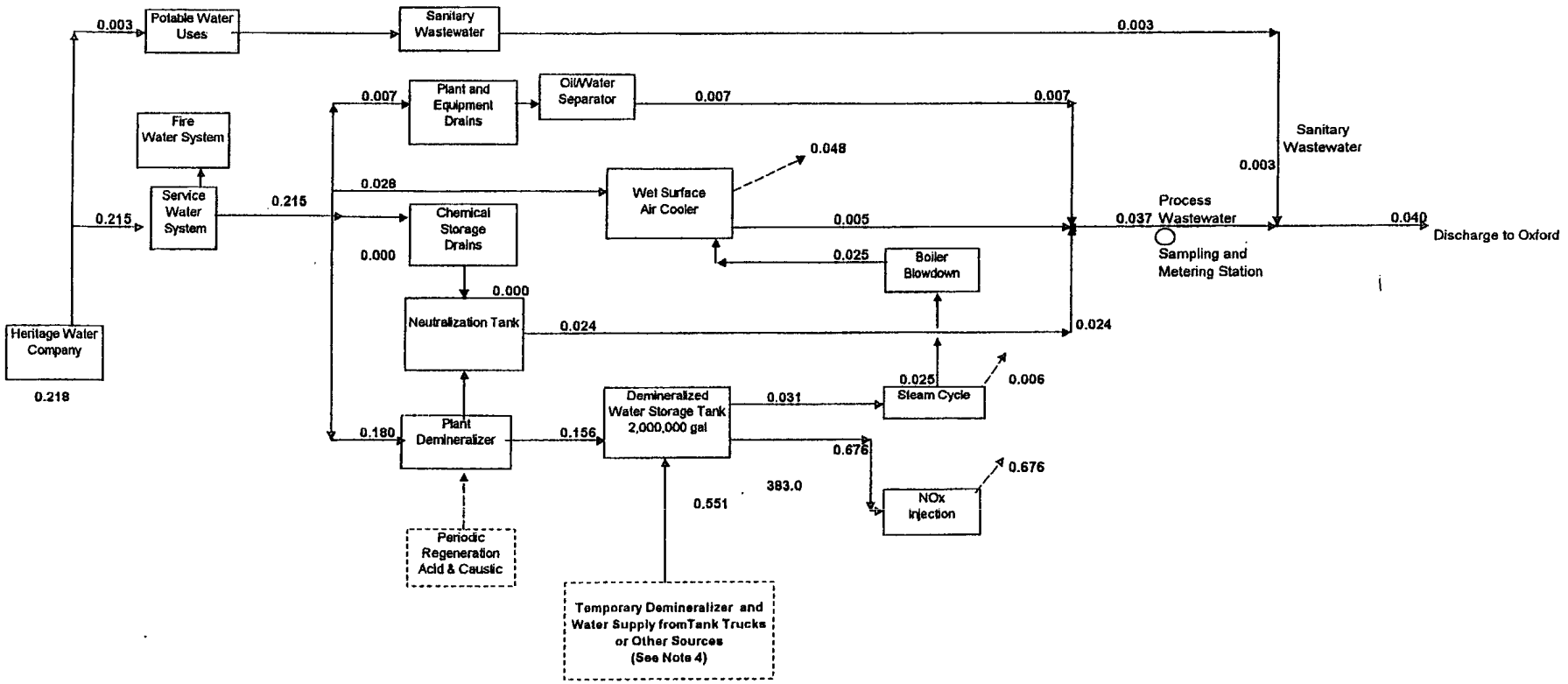
4. SUPPLEMENTAL RAW WATER SUPPLY VIA TRUCK

When needed, additional raw water will be obtained from sources such as Bridgeport Hydraulics ("BHC") and Connecticut Water Company and others, and will be delivered to

the Project by tank truck. Connecticut Water and BHC report that they routinely supply water to tank trucks by connection to fire hydrants located within their systems. Project facilities include 200,000 gallons of raw water storage capability that can be used to receive and store the water. The water truck unloading area is located at the eastern plant service road and plant parking area. It is estimated that approximately four tank trucks per hour (7,000 gallons each) would be needed for the worst-case supply condition of 383 gpm (22,980 gal per hour or 0.551 mgd).

Permanent unloading facilities, which include three forwarding pumps, piping, valves, and instrumentation, will be located at the Water Treatment Building. The water trucks will be queued in the parking area and connect their discharge lines to the forwarding pump connections. The pumps will forward the water to the Fire Water/Raw Water Storage Tank. The portable demineralizer equipment will be supplied from the Fire Water/Raw Water Storage Tank, treat the raw water, and forward the demineralized water to the Condensate Storage Tank.

With the above-described plan, which includes a commitment to install permanent fuel oil and water handling infrastructure, Towantic has the capability to ensure continuously firing of oil fuel for up to 720 hours per year.



NOTES:

1 Flows are in million gallons per day (MGD)
2 Flows based on full load operation, 59 F and 60% RH
3 Flow rates can be sustained for approximately 87 hours based on capacity of demineralized water storage tank and no temporary makeup
4 After depletion of the demineralized water storage tanks, flow rates can be sustained for 720 hours with the temporary makeup supply
5 Diagram also reflects operation while refilling the demineralized water storage tank.

R·W·BECK

Towantic Energy Project

Maximum Water Supply for Oil-Fired Operation

November 21, 2000

Witness: Lynn Gresock

2b-Connecticut Siting Council Third Late-Filed Exhibit:

A worst case scenario is a 1.3 percent reduction in river flow levels at certain times of the year. Please correlate that percent reduction with impacts to wetland dependent biodiversity, including fish, invertebrates, amphibians, and reptiles, especially the state-listed wood turtle.

Response:

The Facility's average withdrawal of 66,900 gallons per day (gpd) needs to be considered within the context of the average (mean) observed flow of the river, which the 2010 USGS report indicates in Table 6 as 122 cubic feet per second for the period from 1999 - 2005. Using these values, the Facility's average withdrawal equates to 0.08% of this mean observed river flow, which would fall well within the standard deviation of the USGS study referenced by the Pomperaug River Watershed Coalition in its filings.[1] In addition, it is important to bear in mind that utilizing water from a groundwater source does not represent a direct removal of water from a surface water system. As noted on page 75 of the USGS report, "the dynamics of the groundwater system can generally be considered to operate on much longer time frames than the surface dynamics…," with the result that (as noted on page 71) "storage within the aquifer attenuates the effects of pumping during periods of low flow…"

In addition, it is not possible to provide a simple answer with regard to the potential effect of reduction in river flows on wetland dependent biodiversity. The river is a complex natural system, and the practical effect of even this relatively small level of flow reduction would vary based on a wide variety of seasonal variables, reach characteristics, and variation in water supply demand. Each species, as well, has different habitat requirements and different abilities during certain times of its lifecycle to adapt to flow reductions. For example, the state-listed wood turtle uses both aquatic and terrestrial habitat at different times of the year.

As has been documented in various responses, Facility water demand is very low. Not only is the Facility designed as an air-cooled electric generating facility, but additional design improvements have been incorporated to further reduce demand associated with the updated configuration. An annual average of 66,900 gpd and a peak demand of 218,000

[1] Bjerklie, D.M., Starn, J.J., and Tamayo, Claudia, 2010, Estimation of the Effects of Land use and Groundwater Withdrawals on Streamflow for the Pomperaug River, Connecticut: U.S. Geological Survey Scientific Investigations Report 2010–5114, 81 p., at http://pubs.usgs.gov/sir/2010/5114.

gpd are reflected in CPV Towantic's request to the Heritage Village Water Company (HVWC). The highest water demand would be during the limited periods when the Facility would fire ULSD, and this use will be restricted based on the air permit limitation of 720 hours of ULSD firing (30 days).

CPV Towantic supports the work of the Pomperaug River Watershed Coalition in understanding the variability of flow through the commitment of financial support for the river stream gauges that were installed following the 1999 Decision and Order; funding is anticipated to continue to support these existing gauges.

Witness: Andrew J. Bazinet

2c-Connecticut Siting Council Third Late-Filed Exhibit:

Description of CPV environmental policies and programs.

Response:

CPV is a developer, constructer and owner of natural gas and renewable electric generating facilities. Fundamentally, these two resources are extremely compatible and complementary as natural gas provides the "dispatchable" resource that can backstop the inherent intermittency of renewable resources, such as solar and wind. As States progress toward their respective Renewable Portfolio Standards goals, natural gas will become an increasingly important resource in this regard. As described in the Response to Q-Westover-9, both the Connecticut Department of Energy and Environmental Protection and ISO-NE have recognized the value of facilities such as Towantic in relation to renewable resources. CPV's renewable program includes approximately 1,000 MW of new wind generation facilities that are currently in construction or operating today with more wind projects still in its development pipeline.

In promoting renewables and the projects it develops, CPV maintains an active role in AWEA. "The American Wind Energy Association (AWEA) is the national trade association for the U.S. wind industry – the country's fastest growing energy industry. With thousands of wind industry members and wind policy advocates, AWEA promotes wind energy as a clean source of electricity for American consumers."

Also, regarding CPV's Cimarron I project, CPV funded a wildlife sanctuary in Kansas by providing funds to Duck Unlimited to acquire and protect open space.

Regarding its natural gas development program, CPV is committed to minimizing the overall environmental impact of each of the projects it develops, examples of this include:

CPV Sentinel is a new 800 MW flexible generating unit providing an essential resource in firming renewable generation and improving reliability in California's Coachella Valley, a hub of wind power. Recognizing the critically important water resources in California, CPV Sentinel has implemented water conservation programs that are designed to minimize the overall water consumption of the facility.

CPV Shore in New Jersey and CPV Maryland in Maryland, two water-cooled natural gas facilities, have committed to the use of reclaimed water for cooling purposes. CPV Maryland's agreement to use reclaimed water for cooling purposes is part of a solution to address environmental concerns for the Chesapeake Bay. The Project's use of reclaimed water is expected to reduce total nitrogen discharge into the Potomac River by up to 18,700 pounds per year and total phosphorous discharge by up to 1,100 pounds per year.

Environmental, Health and Safety (EHS) – CPV's Asset Management Group teams with premier third party providers of operation and maintenance services in managing the day-to-day operations of each the facilities CPV develops and owns. CPV takes a proactive approach to its EHS programs and leverages the experience and depth of the programs of its third party partners. Further, CPV stresses and enforces technical discipline across all aspects of plant operations, specifically including environmental matters. This discipline involves development and implementation of a training program and reliance on environmental plans, compliance management tools and procedures that appropriately reflect permit and regulatory requirements. Examples of CPV's program depth and breadth include:

- Written EHS policies included in the operating manuals of each plant, carefully tailored to the specifics of each plant;

- Use of in-house staff and consultants to conduct periodic audits to ensure effective compliance. Independent audits are encouraged as they play an important role in preventing major concerns or problems in environmental, health and safety areas;

- Thorough data capture of emissions rates and other environmental performance data;

- Use of a modern, cloud based compliance management and tracking system at each plant to assure and document compliance with each condition of our environmental permits;

- Inclusion of environmental performance metrics in the incentive compensation formula of all plant personnel;

- Commitment to the use of premier third party operators with a track record of creating and maintaining a "compliance culture" at the plants they manage, and with the expertise to address both existing and emerging environmental regulations;

- Annual budgets that fully fund personnel staffing and training, equipment maintenance and testing, and contingency planning for environmental matters; and

- Partnering with and training community emergency personnel for emergency response procedures and protocol.

Historically, as a third party manager of the Milford Power Project in Milford, Connecticut, CPV brought the facility and its operations into compliance with Siting Council

requirements and other agency permits and authorizations. Further, CPV oversaw and implemented an environmental remediation program associated with historic soil contamination located on and adjacent to the site.

Regarding CPV Towantic, and as a commitment to conservation and the environment, the project has committed to the following:

- Reduction of building and other structure heights to minimize any visual impacts;

- Use of air cooling technology for the project's steam cycle as well as all auxiliary equipment (prior approval utilizes water for auxiliary equipment cooling) to minimize water consumption;

- Recycling all process water streams, thereby (i) minimizing water consumption and (ii) eliminating all process wastewater except for domestic discharges (sinks and showers), service water uses (fire protection) and stormwater captured in plant floor drains. Notably, these discharge streams are not at all unique to a power plant;

- Construction of E-Commerce road to facilitate the re-routing of project-related and future industrial park traffic away from residential areas;

- Funding the operation and maintenance of two gauge stations on the Nonnewaug and Weekeepeemee rivers; and

- Funding of an Instream Flow Incremental Methodology (IFIM) study.

In addition to these environmental programs and policies, CPV maintains an active presence in the community by sponsoring local programs and events and supporting local services. Two examples of this are (i) CPV Towantic's recent contribution to the construction of Lily Park, a new playground constructed for the children of Oxford, Connecticut and (ii) CPV's roll-out of an elementary school education program designed to teach students about the electricity generation, transmission and distribution system.

Witness: Lynn Gresock

2d-Connecticut Siting Council Third Late-Filed Exhibit:

Drawing identifying the elevations of nearby hills to compare with the stack heights above mean sea level (AMSL).

Response:

Please see attached graphic.

CPV Towantic Energy Center

Legend

- Site Boundary*
- 2-Mile Analysis Area

Elevation Within 2-Mile Radius

- 870 ft. - 910 ft.
- 831 ft. - 870 ft.
- 830 ft. - 831 ft.
- 790 ft. - 830 ft.
- 750 ft. - 790 ft.
- 710 ft. - 750 ft.
- 670 ft. - 710 ft.
- 630 ft. - 670 ft.
- 590 ft. - 630 ft.
- 550 ft. - 590 ft.
- 510 ft. - 550 ft.
- 470 ft. - 510 ft.
- 430 ft. - 470 ft.
- 390 ft. - 430 ft.
- 347 ft. - 390 ft.

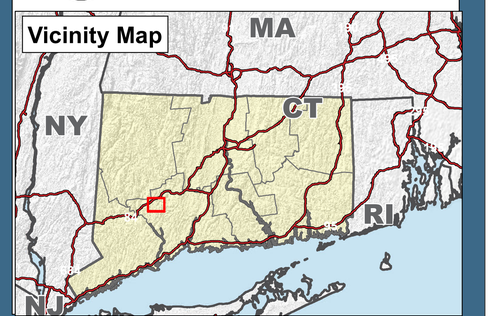
*Property within the Site Boundary reflects a post-construction base elevation of 830 feet AMSL.

Elevation Sources: State of Connecticut, Department of Environmental Protection. 2000; Federal Aviation Administration. Terrain and Obstacle Data Team - Digital Obstacle File. February 1, 2015.

0 2,000 4,000 Feet

Scale is 1:14,000 when printed at 22x34"

Vicinity Map



TETRA TECH

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