ATTACHMENT A

Section 5.0 of DEIS “Visual Resources and Aesthetics”

5.0 VISUAL RESOURCES AND AESTHETICS

5.1 INTRODUCTION

This section provides a discussion of the visual impact assessment (VIA) performed for the CPV Valley Energy Center (Project or Facility). Identification of potential viewpoints, viewshed analyses, impact assessments, and mitigation analyses are provided for representative viewpoints within a 5-mile radius from the Project site. In addition, an analysis of potential stack plume visibility is also provided. Visual impact is assessed in terms of the anticipated change in visual resources, including whether there would be a change in character or quality of the view.

On July 31, 2000 the New York State Department of Environmental Conservation (NYSDEC) issued a program policy entitled "Assessing and Mitigating Visual Impacts." This program policy provides the framework for evaluating visual and aesthetic impacts generated from proposed facilities. The analysis performed for this Project uses the technical concepts and methods contained in that policy for evaluating visual and aesthetic concerns.

5.2 EXISTING CONDITIONS

5.2.1 Character of the Project Site

The 122 acre Project site is located in the northeast portion of the Town of Wawayanda, Orange County, New York, directly south of the City of Middletown and west of New York Route 17M. The site is bordered by Interstate 84 (I-84) to the south, and by U.S. Route 6, which curves and follows the northern and western end of the site.

The site is currently undeveloped land consisting of tracts used previously for agricultural purposes including hay and corn crops. Fallow areas from hay use can be characterized as upland meadows dominated by goldenrod and meadow grasses. There are several wooded areas that are associated with wetland streams. Carpenter Creek traverses the northern extent of the site running in an east to west direction. The surrounding area becomes increasingly commercial and residential to the north toward the City of Middletown, but otherwise remains open undeveloped, wooded, and rural residential, with isolated areas of industrial or light commercial uses located off U.S. Route 6 and intersecting roads. The CPV Valley Energy Center would occupy approximately 21.25 acres within the 122 acre Project site. The overhead transmission line segment on the Project site will entail clearing of approximately 3.24 acres of forested right-of-way. An additional 1.17 acres of open field area is traversed by the overhead line.

5.2.2 Local Landscape and Land Use

Currently, a limited number of single-family residences are on property adjacent to the Project site. Vacant undeveloped commercial land, a wooded area and four homes are grouped contiguously together along the north side of Route 6, approximately 0.25 miles from the Facility location. One house in the vicinity of the other four homes is located on the south side of the road. Directly to the west on the opposite side of Route 6 are undeveloped open land and wooded areas as well. I-84 is directly south of the site forming the southern boundary. Pine Hill

Cemetery and Horizons at Wawayanda, a workforce housing complex, are located along the northeast/eastern boundary of the Project site.

Several development projects are proposed within a 2 mile area near the Project site. The nearest one to the site, Concrete Properties-Panatonni Development, is located 0.25 to 0.5 miles to the west on the opposite side of Route 6.

Wawayanda's physical appearance is primarily characterized by rural open spaces interspersed with small hamlets and residential subdivisions. Open undeveloped and fragmented active agricultural lands in addition to larger expanses of heavily wooded areas lie primarily to the south of I-84 in the vicinity of Route 56 and Bates Gates, Deblock and Seward Roads. There are locations of higher density suburban residential homes along Greeves, Ridgebury, and the Post Road areas, south of the agricultural fields approximately 1.0 mile away.

Route 17M is oriented in a general north-south direction, approximately 0.5 east of the site. Along Route 17M are primarily commercial land uses, including strip malls, food establishments, car dealerships, and other commercial establishments.

Further west and northwest of the site are commercial uses, a gravel operation, a large-scale confined housing dairy, a New York State Department of Transportation facility operation, and open undeveloped vacant lots and low-density residential housing.

The population and residential density increases north of the site. Kirbytown Road is a suburban residential area that is one of the first residential roads encountered north of the site. As one proceeds further north, one approaches the City of Middletown where there are more densely populated areas in the form of high-density low and middle income housing developments and senior apartment complexes. Other community oriented facilities such as urban parks, food establishments, and churches are encountered. Aside from the commercial development directly associated with Route 17M, there are also other mixed residential commercial areas and the City of Middletown Sewage Treatment Plant. Section 3.0 provides a more detailed description of land uses within 1 mile of the Project site.

5.2.3 Visual Resource Inventory

5.2.3.1 NYSDEC Visual Policy Resource Inventory

The NYSDEC issued a Program Policy on July 31, 2000 entitled "Assessing and Mitigating Visual Impacts." This policy provides the framework for evaluating visual and aesthetic impacts generated from proposed facilities. This NYSDEC policy also defines important technical concepts and methods for compliance with the State Environmental Quality Review Act (SEQRA) with respect to environmental aesthetics. With this policy, NYSDEC asserts that the state's interest with respect to aesthetic resources is to protect those resources whose scenic character has been recognized through national or state designations.

This section provides an inventory of visual resources located within a 5-mile Project study area in accordance with the NYSDEC Visual Resources Policy. Identified visual resources are described below. Figure 5-1A shows the location of the identified visual resources within the 5-

mile study area. The map identifier for each resource is given in parentheses following each mention of a resource within the study area.

1) *A property on or eligible for inclusion in the National or State Register of Historic Places [16 U.S.C. §470a et seq., Parks, Recreation and Historic Preservation Law Section 14.07]*.

A) The following historic resources listed in the National and State Registers of Historic Places are located within the 5-mile study area.

- Webb Horton House (H1), 115 South Street in Middletown, located approximately 1.97 miles north of the Project site. Reference Number 90000690 (NRHP listed in 1990-04-26).

- Hillside Cemetery (H2), located on Mulberry Street in Middletown, approximately 2.1 miles north of the Project site. Reference Number 94001027 (NRHP listed in 1994-09-07).

- Dunning House (H3), 633 Ridgebury Road in Ridgebury, approximately 2.1 miles south-southwest of the Project site. Reference Number 01001383 (NRHP listed in 2001-12-28).

- Primitive Baptist Church of Brookfield (H4), off of US 6 in Slate Hill, approximately 2.4 miles southwest of the Project site. Reference Number 76001260 (NRHP listed in 1976-11-13).

- Paramount Theater (H5), 17 South Street in Middletown, approximately 2.4 miles north of the Project site. Reference Number 02000136 (NRHP listed in 2002-03-06).

- Oliver Avenue Bridge (H6) on Oliver Avenue in Middletown, approximately 2.9 miles north of the Project site. Reference Number 84002882 (NRHP listed in 1994-07-19).

- Sawyer Farmhouse (H7) 178 Maple Avenue near Goshen, approximately 4.1 miles southeast of the Project site. Reference Number 05000636 (NRHP listed in 2005-06-30).

- Woodlawn Farm (H9), sometimes known as the Wood Homestead, is located at 20 Mount Orange Road, a short distance north of Slate Hill, and is approximately 2.5 miles west of the Project site. Reference Number 08000277 (NRHP listed 2008-04-11).

- Christ Church (H10), 6 Orchard Street in Middletown, located approximately 2.5 miles north of the Project site. Reference number 08000771 (NRHP listed 2008-10-15).

- First Congregational Church of Middletown (H11), 35 East Main Street in Middletown, located approximately 2.5 miles north of the Project Site. Reference number 050001382 (NRHP listed 2005-12-07).

B) A review of the New York State Preservation Historical Information Network Exchange (SPHINX) database for Towns located within a 5-mile radius of the Project indicates numerous properties that have been determined eligible for listing in the National Register of Historic Places (NRHP). These resources are listed in Table 5-1, (D=eligible as a historic district or as part of a historic district; I=eligible as an individual historic resource). Some listings in the database did not have addresses and therefore the listing could not be located.

2) *State Parks [Parks, Recreation and Historic Preservation Law Section 3.09]*. No state parks are located within the study area. The nearest, Highland Lakes State Park, is approximately 5.6 miles northeast of the Project site.

3) *Urban Cultural Parks [Parks, Recreation and Historic Preservation Law Section 35.15]*. The State Heritage Areas program has replaced the urban cultural parks program. No state heritage area is near the Project site.

4) *The State Forest Preserve [NYS Constitution Article XIV]*. The state forest preserve is limited to the Adirondack and Catskill Parks, and some portions of the counties where these two parks are located. No such lands are on located in Orange County.

5) *National Wildlife Refuges [16 U.S.C. 668dd], and State Game Refuges [ECL 11 2105]*. No National Wildlife Refuge (NWR) or state game refuges are within the study area. The nearest NWR is the Wallkill River NWR in Sussex, New Jersey, approximately 11 miles south of the Project site. No state game refuges are near the Project site. Additionally, the nearest state wildlife management area is the Bashakill Wildlife Management Area approximately 12 miles north-northwest of the Project site.

6) *National Natural Landmarks [36 CFR Part 62]*. No National Natural Landmarks are located within the study area. No National Natural Landmarks are located in Orange County.

7) *The National Park System [16 U.S.C. 1c]*. No national parks are located within the study area or near the Project site.

8) *Rivers designated as National or State Wild, Scenic or Recreational [16 U.S.C. Chapter 28, ECL 15 2701 et seq.]*. The only nationally designated river in Pennsylvania or New York is the Upper Delaware River, which is well outside of the study area. The nearest state designated river is the Shawangunk Kill River, designated as Recreational approximately 18 miles north of the Project site.

9) *A site, area, lake, reservoir or highway designated or eligible for designation as scenic [ECL Article 49]*. Areas subject to Article 49 designation include Scenic Byways (now

under the purview of the New York State Department of Transportation), parkways designated by the Office of Parks, Recreation and Historic Preservation, and other areas designated by NYSDEC. The nearest scenic byway is the Shawangunk Mountains Scenic Byway, with the closest portion part of New York State Route 302 north of New York State Route 17K in Bullville, approximately 9.3 miles north of the Project site. The nearest scenic parkway is the Palisades Interstate Parkway approximately 22 miles southeast of the Project near Doodletown. The Project is not in or near any scenic sites or districts otherwise designated through Article 49.

10) *Scenic Areas of Statewide Significance [Article 42 of Executive Law]*. No Scenic Areas of Statewide Significance (SASS) areas are located within the study area. The nearest SASS is the Hudson Highlands SASS located approximately 21 miles east of the Project site, near West Point and Bear Mountain State Park.

11) *A state or federally designated interstate or inter county foot trail, or one proposed for designation [16 U.S.C. Chapter 27 or equivalent]*. The Orange Heritage Trail (P2), a National Recreation Trail, is a planned multi-use trail running from Middletown to Monroe along an old railroad bed. The nearest part of this proposed trail is approximately 0.9 mile east-northeast of the Project site. However, the trail has not been constructed in this area. No other trails are within the study area. The Long Path, a 326-mile hiking path from near the George Washington Bridge to Albany, is approximately 6.8 miles to the northeast at its nearest point. The nearest portion of the Appalachian National Scenic Trail is located approximately 12.5 miles to the south-southeast in Bellvale.

12) *Adirondack Park Scenic Vistas*. The Adirondack Park is located in northeastern New York State, far removed from the Project study area.

13) *State Nature and Historic Preserve Areas*. No preserves are located in the Project study area or in Orange County.

14) *Palisades Park*. New York State's portion of the Palisades Park is located primarily in Rockland County, well outside the study area.

15) *Bond Act Properties purchased under Exceptional Scenic Beauty category*. No properties of this nature are within the Project vicinity.

5.2.3.2 Additional Visual Resources

An inventory of additional visual resources including scenic easements, public parks and recreation areas, and scenic overlooks was developed by CPV Valley. These areas include sensitive community resources and open space areas specifically identified in the Town of Wawayanda Comprehensive Plan and Orange County Open Space Plan. Also considered are nearby parks in Middletown and Wallkill. The additional community visual resources found within the Project study area are:

- *New York State Bike Route 17* – An on-road long distance bicycle route that includes the portion of U.S. Route 6 that forms the eastern and northern boundary of the site.

- *Ben and Paula Amchir Park* (P1) – In Middletown, approximately 1.0 mile north of the Project site.

- *Maple Hill Park* (P3) – In Middletown, approximately 2.1 miles north of the Project site.

- *Shannen Park* (P4) – The major town run open space in Wawayanda is a 133 acre park approximately 2.7 miles southwest of the Project site.

- *City Park* (P5) – In Wallkill, approximately 2.9 miles northeast of the Project site.

- *Francher-Davidge Park* (P6) – In Middletown, approximately 3.0 miles north of the Project site.

- *Watts Memorial Park* (P7) – In Middletown, approximately 3.6 miles north of the Project site.

- *City Park* (P8) – In Middletown, approximately 4.2 miles north of the Project site.

- *Orange County Golf Club* (G1) – This 18 hole golf club is located in Middletown and is 3.50 miles from the Project site.

- *Hunter Farm Preserve* (O1) – This public nature preserve is located in Wawayanda and is 2.3 miles from the Project site.

- *Mount Orange Easement* (O2) – This conservation easement is adjacent to the Hunter Farm Preserve and is 2.5 miles from the Project site.

- *Orange County Audubon Sanctuary* (O3) – This sanctuary is a nature preserve that is located in Goshen and is 4.6 miles from the Project site.

- *Orange County Farmland* (O4) – This property is a conservation easement that is located in Goshen and is 4.7 miles from the Project site.

- *Minisink Elementary and Middle Schools* – These schools and associated recreational facilities are located approximately 4.1 miles southwest of the Project site.

5.2.3.3 Visually Sensitive Resources of Local Concern

Visually sensitive resources of local concern were determined in consultation with the Town of Wawayanda Planning Board in its capacity as Lead Agency. CPV Valley provided the Planning Board with a list of visual resources and proposed viewpoints during a Planning Board Meeting on October 7, 2008. Appendix 5-A includes the summary list of visual resources and proposed viewpoints provided to the Planning Board.

The Planning Board chairperson requested that photosimulations of the Facility from Route 6 and I-84 be included in the DEIS during a consultants meeting on December 18, 2008.

As a follow-up to the October 2008 request, CPV Valley requested input from the Planning Board regarding any other resources of local concern during the January 14, 2009 Planning Board Meeting. During this meeting, the Planning Board members identified the following sites.

- Stony Bar Road (PB1)
- Greeves Road (PB2)
- Sutton Hill Apartments (PB3)
- Creeden Hill (PB4)
- McBride Road (PB5)
- 20 Mount Orange Road (PB6) *
- Koutney Lane (PB7)
- Minisink Valley High School (PB8)
- Burnt Corners/Mt. Orange Road. (PB9)
- Delmar Hill Road (PB10)
- Dunning House on Ridgebury Road (PB11) *
- Guinea Hill Road (PB12)
- Stillwater Road (PB13)
- Post Road (PB14)
- Horizons at Wawayanda, housing complex (PB15)
- Morrison Hall at Orange County Community College (also referred to as Webb Horton House) (H1) *
- Old School Baptist Church (also referred to as Primitive Baptist Church) (H4) *

The sites identified with an asterisk * were also identified as part of the NYSDEC visual resource inventory listed above in Section 5.2.3.1.

In addition, the following location was identified during a Planning Board public meeting for the Environmental Assessment Form for the Project.

- *Truman Moon School* – In Middletown, approximately 1.9 miles northeast of the Project site on 53 Bedford Avenue.

5.3 VISUAL CHARACTERISTICS OF THE PROJECT

The overall appearance of the CPV Valley Energy Center is illustrated in the Project rendering shown in Figure 2-6. The most prominent structures associated with the Project are the two exhaust stacks, air cooled condenser, and the generation building. The generation building would house the combustion turbine generators and the Heat Recovery Steam Generators (HRSG). The tallest structure will be the two exhaust stacks with a height of approximately 275 feet above grade. The highest portion of the generation building will be 113 feet above grade. The air-cooled condenser will have a height of approximately 115 feet above grade. The Project will also incorporate a 1,000,000-gallon combination raw water/fire water storage tank, a 400,000-gallon demineralized water storage tank, and a 965,000-gallon fuel storage tank and associated off-loading facilities, transfer piping, and pump systems. The Facility's raw/fire water storage will be 40 feet tall and the fuel storage tank will be 48 feet tall. The demineralized water storage tank will be 22 feet tall. Ancillary facilities, such as fuel gas compressor, maintenance building, and a combustion turbine inlet filter would be smaller and less prominent than the aforementioned structures.

The Project will interconnect to the 345 kilovolt (kV) NYPA Marcy South system, located less than 1 mile from the site to the northeast. The interconnection would be made via a new on site 345 kV substation and 345 kV electric transmission cables to be placed on overhead pole structures when crossing the site and in underground conduit between the site boundary and the NYPA transmission lines within the right-of-way of Route 17M.

Neutral coloring will be used for project building structures. Landscaping is proposed for key vantage points on the development parcel. The Facility lighting plan is designed to meet operational requirements while minimizing to the extent possible offsite visibility. The two exhaust stacks will be lighted to meet Federal Aviation Administration (FAA) requirements. Considerations such as color, landscaping and lighting will be addressed in detail during the site plan review conducted by the Planning Board.

5.4 VISUAL IMPACT ASSESSMENT

The visual impact assessment for this Project was performed using two methodologies: 1) viewshed analysis and 2) realistic photo-renderings (photosimulations). A viewshed analysis is a Geographic Information System (GIS) analytical technique that allows one to determine if and where an object, such as a generating facility, is potentially visible within the visual study area. The results of the viewshed analyses are typically displayed over a USGS topographic quadrangle or aerial photograph. Photosimulations are prepared to obtain the best possible visual representation of the proposed Project in terms of size and scale within the landscape, and assist in evaluating the potential visual impact from a given vantage point.

5.4.1 Methodology

5.4.1.1 Viewshed Analysis Methodology

A viewshed analysis encompassing an area within a 5-mile radius of the Facility was performed to identify those areas from which the proposed Facility stacks would potentially be seen. This

evaluation utilized a standard 10-meter resolution USGS digital elevation model (DEM) in order to establish baseline elevations within the Project area. Two viewshed analyses were performed. The first viewshed analysis utilized a bare surface DEM, representing potential visibility based only on the topographical variation in the landscape. This was performed to represent a worse-case scenario by identifying the maximum potential geographic area to investigate.

To better represent the character of the surrounding landscape, a second viewshed analysis was performed which incorporated the presence of trees. The results of this viewshed analysis illustrates the probable screening effect of mature vegetation. The most recent digital National Land Cover Dataset (NLCD) of 2001 was used as an initial source for tree cover. The NLCD is a USGS spatial dataset derived from Landsat Thematic Mapper satellite data. It is a comprehensive land cover database available for the entire U.S. that includes 21 classes of land cover, percent tree canopy, and percent imperviousness. Deciduous and coniferous tree data greater than 15 feet in height was extracted from this dataset and processed as a visual impediment layer to be included with the base DEM. This NLCD vegetation layer was additionally cross-checked against more recent leaf-on aerial photography of the study area dated 2004. In some cases, there were differences in tree cover observed on the aerial photograph that were not present within the NLCD data as development in the Wawayanda area has occurred. In the areas where development has occurred, trees were removed from the original dataset. Following the cross-check of data, the vegetated tree layer was then assigned a height of 36 feet, as an average conservative height recorded by biologists in the field. The x, y and z coordinate data of the Facility stacks were then incorporated into the model. These data were controlled within the model to ensure that the surface elevation and the vertical offsets of the stacks were embedded properly against the vegetation layer. The viewshed model was further developed with the assumption that the Facility is not visible to a viewer who is standing amongst trees in a forested area. The final resulting output grid identified those areas from which viewers may potentially see all or some part of the Facility, and in some cases only the upper portion of a stack.

5.4.1.2 Photosimulations Methodology

Two site visits were made to obtain leaf-off photography. Site Visit 1 occurred on November 24, 2008. For this effort, photographs were taken with a digital Rebel XT 350D camera with a lens set to a 50 mm equivalent focal length. The photosimulations of locations representative of the November visit generally encompass NYSDEC sites of concern and local and residential areas within 3 miles of the site. Site Visit 2 occurred January 15-17, 2009 for the purposes of including additional views from nearfield residential areas and roadways. For these winter photos, a full frame Canon 5D camera with a 50 mm lens was used. The camera model, date, and time of photograph are noted on each photograph and photosimulation figure.

To minimize pitch, roll, and yaw the cameras in the field were leveled vertically and horizontally using a tripod level, and by use of a level that fits into the shoe of the camera. A Trimble GeoXT GPS Unit recorded the locations of the camera viewpoints and reference locations in UTM Zone 18 NAD 83. The GeoXT Unit has sub-meter accuracy following differential correction of the gps data.

To create the simulations, AutoDesk VIZ4 and 3DS Max 9 visualization software was used to locate and correctly dimension the model of the Project into the photographic image from each viewpoint location. A 3-dimensional model of the Facility was created in the visualization software program based on engineering specifications. As such, relative dimensions in the model are proportionally represented. The 3-dimensional model was then incorporated into UTM Zone 18 coordinate system and placed at the latitude and longitude specified by the engineering drawings. The elements within the model were then adjusted to the elevation at the given coordinate location.

The model within the visualization software was further developed to position the viewer at the selected vantage point and adjusting a camera view that matches that of the actual photograph. The camera position was entered into the model. Reference locations were obtained to assist with placement of the facility within the photograph. These references are existing visible objects in the photograph. Positional information of the reference objects are acquired and subsequently incorporated into the existing 3-dimensional model to refine the placement of the Facility within the photograph. For all photos, a survey stake was placed in the center of the photograph for initial orientation of the viewer to the facility. To further refine the placement of the facility model within the photograph various approaches were taken. For Site Visit 1 simulations, reference objects were obtained by observing distance objects in the photograph such as right-of-way transmission structures, roads, buildings, or trees. The x,y, and z location of these objects were obtained from 30 cm resolution 2007 aerial photographs draped over a digital elevation model in ESRI GIS software. Supplemental information in some cases was obtained from site plans, known highway elevations for checks on the z axis, or by using intermediate GIS terrain investigations for topographic information. During Site Visit 2, gps locations of fence posts, trees, utility poles, or light posts were taken and used as references for the simulations. In addition, balloon was raised to the 275 foot stack height and used as a high point reference.

For night time photographs, the day time tripod locations were marked with paint and the orientation/lateral extents of the camera view were marked in the ground with wire survey flags. Height of the camera from the ground surface was measured and noted. These day time locations were returned to in the evening and the camera and tripod positions were essentially replicated for the night time photosimulations. Preliminary lighting for the night time photosimulations was based on the Site Lighting Plan included as sheet SP-7 of the Site Plan Drawings.

5.4.2 Results

5.4.2.1 Viewshed Analysis

Figure 5-1B presents the viewshed results on an aerial photograph and Figure 5-1C presents the results on a USGS map. The viewshed based on both topography and tree cover is shown in the fuchsia shading and viewshed for topography only is shown in blue. The viewshed analysis based on both tree cover and topography shows that within the 5-mile study area, the areas most directly affected by potential views of the Project occur beginning at the site and extending out to approximately 2 miles. Both viewsheds take on a northeast to southwest orientation. Physical features of the landscape, including mature trees and variation in the topography will limit

Project visibility from many vantage points. Higher ridges oriented in a northeast to southwest direction are present at approximately 1.7 miles north and south of the site. Sayers Hill and other unnamed ridges to the north are located near the northwestern portion of Wawayanda and southwestern region of Walkill, just south of Lake Pocatello extending southeasterly towards I-84. These ridges generally obstruct further views to the northwest.

Huckleberry, Snake, and Guinea Hills located in southeastern Wawayanda south of the site provide higher elevation ridges that drop in elevation down to the Walkill River. These higher hills and ridges obstruct further views to the southeast as well as most locations south of Ridgebury and Lower Roads.

As is expected, the viewshed that includes only topography shows a greater percentage of potential visibility. The viewshed that represents the inclusion of tree vegetation shows there could be visibility in open areas in both low-lying and higher elevations.

While the viewshed maps indicate theoretical visibility, there are some inherent limitations in the model. Because of its computerized aspect, the viewshed analysis results assume the observer to have perfect vision at all distances. Therefore, a certain amount of reasonable interpretation needs to be considered because of the limitations of human vision at greater distances and those atmospheric obstructions that may cause imperfect vision, such as haze or inclement weather.

Additionally, the numerous buildings that are present within a 5-mile radius are not accounted for in this analysis. Therefore, there may be more visual impediments occurring in the landscape than is represented in the viewshed results. This phenomenon is most evident in the Middletown area where the viewshed results show many visible areas, but where buildings clearly block views of the Project.

Lastly, the vegetation layer used in the tree cover analysis is regarded as an opaque layer. It should be noted that direct or filtered views at the edges of forested areas could occur which would not be represented on the map results.

5.4.2.2 Viewpoint Locations for Photosimulations

Representative viewpoints were selected for photosimulations. The process for selecting the viewpoints for photosimulations included: 1) identification of existing visual resources within the 5-mile study area surrounding the Project site (as described in Section 5.2.3); 2) determination of potential project visibility from each location identified; and 3) evaluation of potential project visibility for sensitive viewing areas and locations of representative viewer groups in the Project vicinity in accordance with the NYSDEC visual policy.

Existing visual resources and potential viewpoints identified within the Project study area included historic sites, recreational resources, residential communities, major roadways, and other areas identified by the Planning Board. To understand the character of the 5-mile study area, information from the viewshed mapping and inventory of visual resources was combined with visits to the site. Two major site visits were made to obtain leaf-off photography for photosimulations. One visit was made on November 24, 2008 and a second visit occurred on January 15-17, 2009. The viewshed modeling results in combination with on-site surveys were

used to determine the potential visibility of the proposed Project from the identified visual resources within the study area. If a potentially visible area overlapped with a visual resource, the location was considered a potential candidate for a documented photosimulation.

Additional field work was conducted on January 15-17, 2009 to assess the potential visibility of the proposed Facility at the viewpoints identified by the Planning Board during the January 14, 2009 Planning Board meeting. To assist in determining visibility of the Facility, a balloon was elevated to a height of 275 feet above ground level at the stack location on the Project site. Documentation of this field work was provided to the Planning Board and consultants on January 23, 2009 (Appendix 5-A). Only a few of the Planning Board sites had a view of the balloon, including Horizons at Wawayanda, Greeves Road, and Sutton Hill Apartments. The view of the balloon from the Greeves Road and Sutton Hill Apartments was very limited.

Table 5-2 provides a list of the identified visual resources previously discussed and the likelihood of whether the Facility would be seen. It should be noted that numerous sites identified in the SPHINX database as "eligible" sites for the National Register of Historic Places were identified within the 5 mile radius of the site and; approximately 40 of these are located in the Project's theoretical viewshed area (based on topography and vegetation). Table 5-3 lists the eligible sites/districts that are within the viewshed area. Figure 5-1D shows the location on an aerial photograph with the viewshed superimposed. Most of the sites in the viewshed are clustered together about 2.5 to 3 miles north of the Project site in Middletown and field reconnaissance indicates that the large number of houses, buildings, and trees make it unlikely for the Facility to be visible from this area. Two sites are located in Wawayanda: 1197 Dolsontown Road and 169 Greeves Road.

The viewpoints evaluated were selected to provide a full geographic representation of visual impacts to the south, north, east, and west, and to account for locations both close to the site and further away. Most of the viewpoints were from the most open, direct views to show a conservative assessment of visual impacts. Several of the sites were selected to document the locations from where the Project can not be seen. In addition to this geographic criteria, the analysis conducted incorporated locations to account for NYSDEC sites in the area, local sites identified by the Town of Wawayanda, residential areas (nearfield), residential areas (far field), and roadways (nearfield). This criteria addresses those areas of concern from both the state and the town, and at the same time, seeks to address the various user groups that may experience visual impacts (i.e., residents, motorists, school children, recreationalists, and workers).

Figures 5-1B and 5-1C shows the locations of the selected viewpoints (VP). The following locations were selected:

NYSDEC Sites

Viewpoint 1: Paramount Theater. The Paramount Theater is located on South Street in Middletown, approximately 2.4 miles north of the Project site. This site was selected because it is listed in the NRHP. It is also a representative location of the area in Middletown which contains numerous other NRHP-eligible sites and districts (see Table 5-3 and Figure 5-1D).

Viewpoint 2: Proposed Orange Heritage Trail (Corner of Dolsontown Road and McVeigh Road). This location was selected to represent an area near the proposed recreational trail approximately 1.6 miles northeast of the site. This location is also proximate to a site identified as NRHP-eligible (1197 Dolsontown Road – ID 2 on Map) (see Table 5-3 and Figure 5-1D).

Viewpoint 7: Primitive Baptist Church. The Primitive Baptist Church of Brookfield is located off US 6 in Slate Hill, approximately 2.4 miles southwest of the Project site. This site was selected because it is listed in the NRHP. This location was also identified by the Planning Board as a site of local interest.

Local Sites

Viewpoint 3: Ben and Paul Amchir Park. This small local park is approximately 1.0 mile north of the Project site in Middletown. This park was selected as a viewpoint as it is the closest recreational park to the Project site.

Viewpoint 4: Shannen Park. Shannen Park is a 133 acre park approximately 2.9 miles southwest of the Project site. This site was selected as it is the major town run open space in Wawayanda.

Viewpoint 8: Truman Moon School. This school is located approximately 1.7 miles northeast of the Project site on 53 Bedford Avenue. This location was selected as a viewpoint because it was identified as a special site of interest during a Planning Board meeting.

This site is also proximate to two sites identified as NRHP-eligible (13 and 32 Adams Street – ID 123 and 124 on map) (See Table 5-3 and Figure 5-1D).

Residential Areas – Nearfield

Viewpoint 5: Bates Gates Road. This viewpoint is approximately 0.6 miles southeast of the Project site. A segment along Bates Gates Road was selected that has open views to the Project.

Viewpoint 6: 129 Kirbytown Road (backyard). This viewpoint was selected as it represents the residential area about 0.4 miles northwest of the Project site. The backyard of this residence was selected to show the most open view of the Project site. Most of Kirbytown Road itself would not have direct views of the Project site due to existing vegetation as can be seen on the aerial photograph.

Viewpoint 10: Horizons at Wawayanda. Horizons is a new residential development that abuts the Project site to the northeast. This location was selected to represent what Horizons residents may see from the premises. This location was also identified by the Planning Board as a local site of interest.

Viewpoint 12: Kirbytown Road between Uhlig Road and Apple Lane. This viewpoint was selected to show a second location along Kirbytown Road.

Residential Areas – Far Field

Viewpoint 14: Greeves Road. Greeves Road is a rural road. The selected viewpoint location is 1.5 miles southeast of the site. This location was identified by the Planning Board as a local site of interest. This location is also proximate to a site identified as NRHP-eligible (169 Greeves Road – ID 4 on Map) (see Table 5-3 and Figure 5-1D).

Viewpoint 15: Sutton Hill Apartments. Sutton Hill Apartments is located 1 mile northeast of the Project site. This site was selected as it was identified by the Planning Board as a site of interest. It is a representative of the dense residential area in Middletown to the north.

Roadways – Nearfield

Viewpoint 9: Balchem Corporation. Balchem Corporation is located on Sunrise Park Road adjacent to Route 17M, approximately 0.8 miles northeast of the Project site. This viewpoint is located within a commercially zoned area next to the I-84 Exit 3 interchange. This viewpoint was selected to represent a nearby open view from the east and also provides a proximal view from nearby Route 17M.

Viewpoint 11: Route 6. A viewpoint along Route 6 was selected to provide a representative view of the Facility from Route 6 close to the site. This location was identified by the Planning Board as a local site of interest.

Viewpoint 13: Interstate 84 (I-84). A viewpoint along I-84 was selected to provide a representative view of the Facility from I-84 close to the site. This location was identified by the Planning Board as a local site of interest.

5.4.2.3 Results of Daytime Photosimulations

Potential impact to the visual environment requires consideration of a number of community issues: the presence of public vantage locations; physical characteristics of the site and surrounding area; physical characteristics of the proposed installation; and the manner in which views will change as a result of the proposed Project.

January leaf-off photographs are presented with snow on the ground, which helps to provide a good contrast between the darker Facility and the surrounding lighter white landscape. The Planning Board accepted the snow on condition during the January 14, 2009 meeting.

Viewpoint 1 – Paramount Theater (NYSDEC Site)

See Figure 5-2A for existing conditions photograph and Figure 5-2B for a photosimulation of the Facility.

The historic Paramount Theater is located on South Street in Middletown, approximately 2.4 miles north of the site. The photograph shows a view from the sidewalk just outside the theater at the entrance to the parking lot, looking south towards the site. There is a vacant boarded-up building adjacent to the theater, and residential dwellings and commercial business on the opposite side of the street. Due to the distance from the Project site and intervening vegetation and structures, views of the Facility from this location are limited. The stacks are barely visible through the opening in the tree line.

In general, the Facility is difficult to see from this viewpoint and impacts to the landscape at this viewpoint from changes in contrast, size, form, and texture are not anticipated.

Viewpoint 2 – Corner of Dolsontown Road and McVeigh Road in Vicinity of Proposed Bike Path (NYSDEC Site)

See Figure 5-3A for existing conditions photograph and Figure 5-3B for a photosimulation of the Facility.

The section of the Orange Heritage Trail bike path leading to Middletown has not been built yet. Many sections in this area of the proposed bike trail are tree-lined on either side of the current rail bed. This viewpoint was chosen as a location for a photosimulation, as it lies in an easily accessible, publicly available area where the bike path would cross Dolsontown Road. This location is approximately 1.6 miles northeast of the site. From this vantage point, there will be a very limited view of the Facility's exhaust stacks.

In general, the Facility will be difficult to see from this viewpoint and impacts to the landscape from changes in contrast, size, form, and texture are not anticipated.

Viewpoint 3 – Ben and Paula Amchir Park (Local Site)

See Figure 5-4A for existing conditions photograph and Figure 5-4B for a photosimulation of the Facility.

This local park located along Academy Avenue in Middletown is approximately 1.5 acres and is located approximately 1.0 mile north of the site. There are single family residences to the east and apartment complexes south of the park just across the street. The photosimulation of this site shows a white outline superimposed on the photograph to indicate the location of the Facility if it could be seen. Due to the distance from the Project site and intervening vegetation and structures, the photosimulation demonstrates that Facility will not be seen from this viewpoint.

Viewpoint 4 – Shannen Park (Local Site)

See Figure 5-5A for existing conditions photograph and Figure 5-5B for a photosimulation of the Facility.

Shannen Park in Wawayanda is located approximately 2.9 miles southwest of the site. It is approximately 27 acres in size with several access roads for walking and running, a large

playground area, and a ballfield. It is interspersed with mowed areas and trees. The photograph was taken from a small parking area located in the center of the park, between the playground area and the ballfield. The view in the photograph is looking northeast across the playing fields to the edge of a large expanse of forested area in the background. The photosimulation of this site shows a white outline to indicate the location of the Facility if it could be seen. The photosimulation demonstrates that there will not be a view of the Facility due to intervening topography, structures, and vegetation.

Viewpoint 5 – Bates Gates Road (Residential Area Nearfield Site)

See Figure 5-6A for existing conditions photograph and Figure 5-6B for a photosimulation of the Facility.

This photograph was taken at one of the higher elevation areas along the side of Bates Gates Road in an area not dominated by trees, looking northwest towards the site. This viewpoint is not from a specific inventoried visual resource and is designed to show how the facility will impact views immediately around the facility. This view is seen for short periods of time by those driving along Bates Gates Road. This viewpoint is approximately 0.6 miles southeast from the proposed Facility. This section of Bates Gates Road can be characterized as rural. Residences in greater density within more wooded areas are located just east of the photo location. The current northerly view of the site from Bates Gates Road is dominated by open field in the foreground and hilly terrain in the distance. I-84 can be seen in the transition zone between the open fields and the hilly terrain features rising in the distance.

The photosimulation shows that the facility will be clearly visible from viewpoint. The Facility represents a major new form in the viewshed and is at a scale that substantially contrasts existing elements of the view. While the facility structure remains lower than the height of the distant hills, the stacks break the established ridgeline, which is in contrast with the existing horizontal line of the view. The color of the facility is designed to minimize contrast, though this view shows that there are substantial unmitigateable visual impacts from this viewpoint that are attributable to the size and nature of the proposed facility that cannot be mitigated through landscaping.

Viewpoint 6 – Residential Area at Kirbytown Road (Residential Area Nearfield Site)

See Figure 5-7A for existing conditions photograph and Figure 5-7B for a photosimulation of the Facility from this viewpoint.

This location represents an elevated viewpoint looking in a southeasterly direction towards the Facility site. The existing view of the site proper is one of open fields with scattered low density tree cover. I-84 is visible in the far background. The area surrounding Viewpoint 6 is residential with most parcels consisting of 1.0 to 2.5 acre lots. Most of Kirbytown Road itself would not have views of the Facility during leaf-on conditions as they would be blocked by intervening trees. The Viewpoint 6 photograph was taken at a location in the back yard of one of the residences on Kirbytown Road that would have the most unobstructed view of the Project site possible from that area. This location is approximately 0.5 miles northwest of the site but would

not be .seen by large numbers of people as it would only be visible to those living in homes at or very close to where the photograph was taken. For the general public, views to the facility along Kirbytown Road will be limited.

The photosimulation shows that most of the Facility building and stacks will be visible from this viewpoint, which transforms the view from one that can be characterized as an open view of fields, brush and forests into one that features a large industrial complex. From this distance the scale of the facility is substantially larger than any existing element of the view and the stacks break the established ridgeline, which is in contrast with the existing horizontal line of the view. While the color of the facility is designed to minimize contrast, this view shows that there are significant unmitigateable visual impacts from this viewpoint that are attributable to the size and nature of the proposed facility.

Viewpoint 7 – Primitive Baptist Church of Brookfield (NYSDEC Site)

See Figure 5-8A for existing conditions photograph and Figure 5-8B for a photosimulation of the Facility from this viewpoint.

The Primitive Baptist Church of Brookfield is located along Route 6 approximately 2.4 miles southwest of the Facility location. At this location looking in a northeasterly direction there will be no views of the Facility due to a narrow row of intervening trees that border the church property. The photosimulation of this site shows a white outline on the photograph to indicate the location of the Facility if it could be seen.

Viewpoint 8 – Truman Moon School (Local Site)

See Figure 5-9A for existing conditions photograph and Figure 5-9B for a photosimulation of the Facility from this viewpoint.

This viewpoint location is approximately 1.7 miles northeast of the proposed Facility and is located along Bedford Avenue which can be characterized as a suburban street. The photograph was taken at the entrance-way of the school looking southwest towards the Facility. The school is located behind the photographer. The school itself and surrounding grounds, drops down in elevation behind some houses located on the same side and does not have a view of the facility. The photosimulation of this viewpoint location shows a white outline on the photograph to indicate the location of the Facility if it could be seen. The photosimulation demonstrates that there will not be a view of the Facility from this location due to intervening topography, houses, and vegetation.

Viewpoint 9 – Balchem Corporation (Roadway – Nearfield Site)

See Figure 5-10A for existing conditions photograph and Figure 5-10B for a photosimulation of the Facility from this viewpoint.

Balchem Corporation is located on Sunrise Park Road adjacent to Route 17M, approximately 0.8 miles northeast of the facility. This viewpoint is located within a commercially zoned area next

to the I-84 Exit 3 interchange. The view is from the northwestern side of the parking lot looking slightly to the southwest. This viewpoint was selected to represent a nearby open view from the east and also provides a proximal view from nearby Route 17M. Route 17M can be seen in the middle of the photograph just on the other side of the chain-link fence located at the edge of the property. The elevation drops slightly on the west side of the Route 17M highway, as noted by the position of the trees in the left portion of the photograph.

Route 17M and the existing overhead transmission lines dominate the southwesterly view towards the Facility site from the Balchem Corporation location. The Facility's stacks and the uppermost portion of the Facility's enclosed building structures will be visible. The addition of the Facility's components to the viewshed are somewhat buffered by the presence of Route 17M and the existing overhead transmission lines. The Facility stacks represent new vertical elements in the landscape, although the photograph shows that some vertical manmade elements already exist such as numerous telephone poles. In general, the Project's form, line, and texture represent a change over the existing components of the landscape, which include the field in the foreground, and road and trees further away. The neutral color of the Facility helps to reduce its contrast with the color of the landscape. This view would likely be seen by those working at this industrial and those traveling along Route 17M.

Viewpoint 10 – Horizons at Wawayanda (Residential Area Nearfield Site)

See Figure 5-11A for existing conditions photograph and Figure 5-11B for a photosimulation of the Facility from this viewpoint.

The Horizons complex has a westerly view of the Facility site. Horizons is a new residential development that abuts the Project site approximately 0.5 miles to the northeast This photograph was taken to represent what the Horizons residents may see from the premises. This view would be limited to those living or visiting this apartment complex and would not be viewed by large numbers of the general public. The north-south orientation of the apartment buildings will minimize the visibility of the Facility from the interiors of these apartments, and most people will see the facility from the parking lot of the complex, which is where this viewpoint was taken. The viewpoint shows that the Facility's building form and vertical exhaust stack in a midfield perspective. The scattered tree cover masks the lower portions of the proposed Facility, but the upper portions will clearly visible and will dominate this viewpoint.

The quality of the existing view from the perspective of visual resources is low. It is centered in a parking lot, which stretches out in the near field. The apartment building to the left is not an inventoried resource and has no notable historic or architectural features. As such, the proposed Facility does not have any significant impact on the visual resources of the Town. The photosimulation does show, however, the introduction of an industrial use in close proximity to this residential use.

Viewpoint 11 – Route 6 (Roadways – Nearfield Site)

See Figure 5-12A for existing conditions photograph and Figure 5-12B for a photosimulation of the Facility from this viewpoint.

The existing view of the Facility site from Route 6 to the east of the proposed access drive is one of open fields used for agricultural purposes in the near field and mature forested areas in the far field. As most viewers would be driving in a car at this location, they would experience the view for a short period of time.

The photosimulation of the Facility indicates that the physical building structures will represent the dominant visual form in a midfield context. The two exhaust stacks will represent the defining vertical line image in the viewshed, significantly higher than the forested tree line.

As the building and stacks are relatively close to Route 6, they are at a scale that is much larger than any component of the existing view, and represent a new feature in the landscape that is different in terms of form, size, and texture from the other elements in the landscape. While the quality of the existing view is marred by the existing utility poles and wires in the foreground, a cell tower in the background, and traffic and highway signs, associated with Route 6, the Facility itself will have significant unmitigatable visual impacts from this viewpoint.

The planting of trees along the southern edge of Route 6 will help to soften this impact, but the scale of the Facility is such that at this distance no landscaping can fully mitigate the impact from this distance.

Viewpoint 12 – Kirbytown Road between Uhlig Road and Apple Lane (Residential Area Nearfield Site)

See Figure 5-13A for existing conditions photograph and Figure 5-13B for a photosimulation of the Facility from this viewpoint.

This viewpoint is located along Kirbytown Road in a residential area between Uhlig Road and Apple Lane Drive. It is approximately 0.3 miles from the Facility looking south. The photograph was taken in front of an open field to show a view that did not have intervening houses. There is a forested area at the southern end of the field. There will be a filtered partial view of the Facility during leaf-off conditions. However the view will be minimized due to the fragmentation of the view caused by the density of tree trunks and branches.

In general, the Facility is difficult to see and thus impacts such as changes to the landscape in contrast, size, form, and texture are not anticipated.

Viewpoint 13 – Interstate 84 (I-84) (Roadway Nearfield Site)

See Figure 5-14A for existing conditions photograph and Figure 5-14B for a photosimulation of the Facility from this viewpoint.

The existing view from the side of I-84 eastbound approaching the site is one of open fields with scattered clusters of trees lining the highway. Areas of higher hill terrain can be seen in the distance. This viewpoint represents the view of motorists as they travel at high speeds along I-84, and thus viewers experience this view only for short periods of time.

The development of the Facility will represent a major new form in the viewshed. Drivers on I-84 will have a full cross-sectional view of the building structures and the two exhaust stacks as well as the switchyard. The location of the development footprint in the southwest quadrant of the site, in conjunction with the elevated I-84 profile, will redefine the viewshed from an open field context to one of industrial use. The Facility when viewed from this distance will have substantial unmitigatable visual impacts from this viewpoint. Landscaping can help to soften some of these visual impacts but because of the size of the facility no landscaping can fully mitigate the visual impacts of the Facility from this viewpoint.

Viewpoint 14 – Greeves Road (Residential Area Far Field Site)

See Figure 5-15A for existing conditions photograph and Figure 5-15B for a photosimulation of the Facility from this viewpoint.

The existing Greeves Road elevated view of the Facility site is dominated by dense mature tree cover in the foreground and hilly terrain in the distance. The viewpoint photosimulation indicated that with the distance from the site and the tree cover, only the vertical line images represented by the top half of the two exhaust stacks would potentially be visible from Greeves Road. The vertical line images represented by the two exhaust stacks blend somewhat into the background dominated by the higher elevation hilly terrain. As such, visual impacts would be minimal with respect to changes in shape, line, form, and texture.

Viewpoint 15 – Sutton Hill Apartments (Residential Area Far Field Site)

See Figure 5-16A for existing conditions photograph and Figure 5-16B for a photosimulation of the Facility from this viewpoint.

This photograph is from Sutton Hill Apartments looking down toward a basketball court in the foreground. Further away there are views of commercial buildings and a high voltage transmission line. The Facility would be difficult to view from this location as it would be screened by trees that exist further away in the background, and any views of the Project would be limited to very small portions of the stacks during leaf-off conditions. As such, visual impacts would be minimal with respect to changes in shape, line, form, and texture.

5.4.2.4 Potential Visual Impacts Along I-84

The discussion of visual impacts along I-84 is concentrated on the approaches between Exit 3 and approximately 600 feet west of the Route 6 overpass. In the vicinity of Exit 3 and as one drives westbound past the site towards the Route 6 overpass, there will be views of the facility. Most of the site is open on the I-84 side, with a few intermittent mature trees, and very few trees along the edge of the highway to impede views. Along this section, the highway is at approximately the same elevation as the Project site and is located between 500 and 1000 feet

away. As one approaches the site driving in the I-84 eastbound direction advancing towards the Route 6 overpass, views of the Facility will likely be very minimal. Most of the Facility would likely be obscured by a forested area that exists along the highway in this area. Those who would see this view would be motorists traveling at high speeds along I-84 immediately adjacent to the site, and thus such viewers would see the Facility for only a short period of time. Refer to Viewpoint 13 discussed above.

5.4.2.5 Visual Impacts Associated with Aboveground Electrical Transmission Line

The aboveground portion of the proposed transmission line interconnect will consist of five steel transmission monopoles spaced between 380 to 720 feet apart, within a 150 foot wide right-of-way (130 foot wide clearing). The aboveground alignment will basically parallel I-84 where it will terminate just to the north and west of the I-84 Exit 3 interchange. At the fifth monopole, the electrical line will transition to an underground duct bank configuration routing under Route 17M easterly where it will connect to NYPA's Marcy South 345 kV right-of-way electric transmission system. The first pole beginning at the Facility substation is proposed to be approximately 10 feet high. Heading in an easterly direction from the substation, the height of monopoles is as follows: Pole 2, 115 feet; Pole 3, 110; Pole 4, 120 feet, and Pole 5 a riser monopole structure, will be 130 feet high.

Visibility of some structures will occur from locations near the proposed right-of-way, such as from I-84 and from the Horizons residential development. There may be views of the transmission line from nearby areas along Route 17M. There may be some minimal and partial distant views of a transmission structure(s) from Route 6.

5.4.2.6 Results of Nighttime Photosimulations

The photographs selected for the night time simulations are from directly south of the site at Bates Gates Road (VP 5), north of the site at Kirbytown Road (VP 6), and Route 6 (VP 11).

Viewpoint 5 – Bates Gates Road

See Figure 5-17A for existing conditions photograph and Figure 5-17B for a photosimulation of the Facility from this viewpoint.

The nighttime photosimulation shows the visibility of the exhaust stack lighting, portions of reflected light on the main buildings of the Facility, and pockets of ground level glow due to the site lighting. This represents a new light source in a land area that is currently not permanently lighted at night. Route 6 and I-84 bound the northern and southern portions of the site respectively. Currently, car lights do provide some ambient, intermittent lighting in the general vicinity.

Viewpoint 6 – Residential Area at Kirbytown Road

See Figure 5-18A for existing conditions photograph and Figure 5-18B for a photosimulation of the Facility from this viewpoint.

The nighttime photosimulation indicates the lighted exhaust stacks, portions of reflected light on the main buildings of the Facility and air-cooled condenser, and areas of lighted glow filtered through trees at the ground level. This represents a new light source in a land area that is currently not permanently lighted at night. Route 6 and I-84 bound the northern and southern portions of the site respectively. Currently, car lights do provide some ambient, intermittent lighting in the general vicinity.

Viewpoint 11 – Route 6

See Figure 5-19A for existing conditions photograph and Figure 5-19B for a photosimulation of the Facility from this viewpoint.

The nighttime simulation indicates the visibility of the stack lighting, reflected light on the Facility, air-cooled condenser, and intake structures, and areas of ground level glow due to site lighting. This represents a new light source in a land area that is currently not permanently lighted at night. Route 6 and I-84 bound the northern and southern portions of the site respectively. Currently, car lights do provide some ambient, intermittent lighting in the general vicinity.

5.4.2.7 Video of Stack Lighting

A DVD containing a video simulation of the two exhaust stacks FAA lighting as observed from the Bates Gates Road viewpoint south of the site is included in Appendix 5-B. Results of the Bates Gates night time photosimulation was used. FAA stack lights were animated in 3DS Max 9 visualization software based on an FAA Type L-864 Flashing Red Obstruction Beacon, with a flashing frequency to occur once every three seconds (1.5 seconds on, 1.5 seconds off) for a total of 20 flashes per minute. One flashing sequence was animated. The video is meant to be viewed as an .avi under normal speed under repeated looping in media software such as Windows Media, in order to view the FAA flashing frequency of 20 times per minute over a period of time.

In addition, night-time video taping of an existing waste to energy Facility stack was taken to visually demonstrate the intensity and intervals associated with stack lighting within a 1-mile radius. The stack associated with the waste to energy Facility has a height of 365 feet and has strobe lighting 360 degrees around the tower at both the mid-point and peak areas. Similar to the CPV Valley site, the waste to energy facility is immediately adjacent to an interstate highway (I-90). Video of the tower was taken for 1-minute at four separate distances to visually demonstrate strobe intensity.

Four still photographs document the existing stack and plant during daylight hours from each of the four sampling locations (Appendix 5-B). Video taping of the stack at the four previously identified locations was undertaken during the evening in order to demonstrate the stack lighting and strobe effect at different distances (0.25, 0.5, 0.75 and 1.0 mile) from the facility. Both sections of stack lighting were visible from each of the four sampling locations during the evening survey with the exception of the 1-mile interval. A compilation DVD of the four video clips is included in Appendix 5-B.

5.4.2.8 Visual Impacts Associated with Visible Plumes

Some of the water vapor in the combined cycle stack plumes, during certain atmospheric conditions, may condense into water droplets as the plume exits the stack and cools in the atmosphere. This would produce a visible, white vapor plume. Visible plumes would be more prevalent in the winter when the air is cold or during the spring and fall if the air is moist. Visible plumes would occur much less frequently in the warm summer months. As the plume travels downwind and mixes with drier, ambient air, the water droplets evaporate and the plume would no longer visible.

The potential for visible water vapor plumes from the combined cycle stacks was assessed using the air quality model CALPUFF. The temperature and water vapor content of the emitted plumes were modeled as they mix with the ambient air for each hour of the 5-year period simulated. This mixing cools the plume and changes its water vapor concentration so that it eventually approaches the ambient air temperature and ambient water vapor concentration. The length and heights of the visible plume were estimated each hour by comparing the water vapor concentrations along the plume trajectory with the saturation values. The plume was considered to be potentially visible if the saturation concentration was exceeded. Conversely, a plume was no longer considered to be visible when the water vapor concentration in the plume dropped below the saturation value. In the model, calculations of plume moisture properties are conducted for downwind distances ranging from 50 meters to 10,000 meters.

Several different combined cycle unit operating conditions were modeled, one for summer (June, July, and August), one for winter (December, January, and February), and one for spring (March, April, and May) and fall (September, October, and November). During summer, the case with the highest water vapor emission rate was assumed. This occurs during base load while firing natural gas with duct firing and evaporative cooling at an ambient temperature of 90 degrees Fahrenheit (^{o}F). During winter, the operating case corresponding to base load operation while firing natural gas without duct firing at an ambient temperature of -5 ^{o}F was assumed. During spring and fall, the base load operation with natural gas with reduced duct firing at an ambient temperature of 51 ^{o}F was assumed. These cases are associated with the highest water vapor emissions consistent with the season and expected operations.

Plumes predicted at night were excluded. Daylight was defined as the period beginning 1 hour before sunrise and ending 1 hour after sunset. The total number of daylight hours over the five-year period was 25,587 (5,322 winter hours, 6,915 spring hours, 7,470 summer hours, and 5,880 fall hours). Hours with calm conditions (for which there was no defined wind speed or direction) were modeled assuming a wind speed of 1 meter/second and were included in the analysis. In addition, hours with ambient relative humidity of 99 percent or 100 percent (i.e., hours with saturated ambient conditions) were retained in the analysis, even though naturally occurring fog, which would likely obscure any potentially visible plume, would be expected to occur for such hours.

For each season, the number of hours with predicted visible plumes with downwind lengths of 50 meters or greater during daylight hours was determined and summed over the five-year period. The total number of daylight hours over the five year period was 25,587. The total number of visible plumes in this size range predicted during daylight hours during the five-year period

(4,274) was divided by the total number of daylight hours, yielding a frequency of 16.7 percent. This frequency includes hours with high ambient relative humidity that would be expected to have natural occurring fog that would tend to obscure any potential visible plume. This analysis assumes that the combined cycle units would be operating at full capacity for every daylight hour. The actual future dispatch of the plant and its associated operations would be expected to result in less frequent visible plumes in this range during daylight hours. In addition, any hours with oil firing in the combustion turbines would have lower water vapor emission rates and would yield less frequent and smaller visible plumes. Additional details concerning the dimensions of predicted visible plumes are provided in Section 9.6.5

Figure 5-20 provides a photosimulation from Bates Gates Road (VP5) of a representative visible water droplet plume on an autumn day with high relative humidity. This photosimulation incorporates a plume in the most frequent category for visible plumes of lengths greater than 50 meters. The photosimulation shows a visible plume that forms due to cool and moist ambient conditions as emitted water vapor condenses as it leaves the stack. The plume rises due to buoyancy as it travels downwind. The mixing of ambient air causes the moisture to re-evaporate approximately 200 meters downwind. During very cold winter days, longer plumes could be possible. Visible plumes would be less frequent and shorter during the summer.

Visible plumes with a length of 50 meters or greater were predicted to occur for about 16.7 percent of daylight hours, meaning that the remaining 83.3 percent of daylight hours would be characterized by shorter visible plumes or by no visible plumes. Other photosimulations presented in Figures 5-2B through 5-15B include a shorter plume in the less than 50 meter length range. An analysis of hours with predicted visible plumes of 50 to 60 meters in downwind length for non-calm hours was conducted to determine a representative relationship of plume rise to plume length for short visible plumes. In order to ensure that the appearance of potential visible plumes was not underestimated in the short plume simulations, a downwind visible plume length of 50 meters and an associated plume rise of 32.5 meters were used in the photographs where there is a view of the Facility even though plume lengths in this category would often be shorter.

5.5 DESIGN, APPEARANCE, AND MITIGATION

The Project has implemented a number of mitigation techniques to minimize off-site visual impacts. The techniques are consistent with the visual impact avoidance and mitigation tools recommended for analysis under NYSDEC's visual resources policy. These include design and siting; alternative cooling technologies; changes to the profile or size of the facility; on-site screening and landscaping; coloring and texture of materials; maintenance during operation. In addition the Project design also includes enclosing much of the Facility components inside buildings; minimizing stack height; preserving the natural vegetation to the extent practicable, and lighting options.

5.5.1 Siting, Layout, and Relocation

In developing the Facility site plan, CPV Valley considered a number of potential site layouts on the 122 acre Project site. Locating the Facility at the southern center portion of the Project site was preferred for three reasons. First, it placed the proposed Facility proximate to nearby Route

6 and I-84 and proposed industrial properties, thereby providing for a continuation of the orderly development of the Project area by avoiding a fragmented development condition. Second, locating the Project in the southwest corner minimizes impacts to wetlands. Third, the Project site location provides maximum buffer from nearby visual and noise receptors, thereby mitigating potential impacts.

5.5.2 Alternative Technologies

The two principal cooling methods for a combined-cycle Facility are wet evaporative cooling and air-cooling. Evaporative cooling relies on the evaporation of cooling water through a mechanical draft cooling tower to provide condenser cooling. However, air-cooling was chosen for a number of reasons, including its beneficial impact with respect to reduced water supply needs and elimination of cooling tower plumes. The trade-off is a larger physical structure with an air-cooled condenser. To maintain adequate air flow, the air-cooled condenser for the project is 115 feet tall, similar in scale to the turbine building.

5.5.3 Low Profile and Downsizing

Concerted efforts were expended by CPV Valley to minimize the visibility of the proposed Facility including changes to the Facility profile and size. The Facility's combustion turbine stacks are the most visually prominent feature. One way to minimize stack height is to limit the height of nearby structures that determine the Good Engineering Practice (GEP) stack height. Preliminary modeling considered stack heights of up to 325 feet based on Good Engineering Practice stack height associated with an initial Facility design. Project design changes, including the reduction in the height of the air cooled condenser to 115 feet, reduced the Good Engineering Practice stack height to 287.5 feet. The final stack height of 275 feet for the combustion turbines was selected based on modeling that showed that this height was adequate to largely avoid increases in predicted impacts that can result from the effects of building induced downwash on stacks that are below Good Engineering Practice stack height.

5.5.4 Screening and Landscaping

The proposed Landscaping plan is intended to enhance the appearance and natural beauty of the historical agricultural use of the existing property, and to provide visual buffering for the surrounding areas. Various small sections of the entrance to the Project site will be graded and seeded after construction. Land to be left as buffer outside the Facility fence line after construction will be restored to its current open space use after construction. Approximately 7.0 acres of that buffer land will be temporarily used as equipment and construction materials laydown and parking during construction.

Other landscaping plans include adding trees and shrubs in areas on the site. These landscaping areas will be protected by protective barriers, curbs, or other damage control measures and from storm water runoff. The Project will incorporate protective measures to protect landscaping and vegetation adjacent to parking areas, loading areas and driveways. To the maximum practical extent and where applicable, mature shade trees, vegetation, and unique site features such as stone walls will be preserved. A buffer area will be placed along the Route 6

boundary; one shade tree (minimum caliper of three inches at four feet) will be planted for each 40 foot distance of lot frontage.

The Project's front lot will be covered with grass, trees and shrubs. Where 20 or more parking spaces are required, at least 10 square feet (ft^2) of interior landscaping will be provided within the paved area for each parking space, and at least one tree will be provided for every ten parking spaces. Each landscaped area will be at least 100 ft^2, planted with grass or shrubs, and contain at least one tree. A landscaping area will also be provided along the perimeter of the parking area, except where access is provided.

5.5.5 Color, Texture, and Camouflage

The existing natural vegetation, which represent large buffer areas surrounding the Facility, and proposed landscaping will help shield full views of the Facility from off site locations. The exterior architectural treatment of the buildings (i.e., doors, siding, etc.) will be painted a neutral beige color to mitigate visibility. The steel stack will be painted a neutral gray tone to complement the generation building. Non-reflective materials will be specified, where feasible, to further soften the Facility appearance and minimize the potential for glare.

5.5.6 Maintenance

Maintenance of the proposed Facility is an important aspect to the visual appearance of the Facility and the continued enhancement of the area aesthetics. The façade of the generation building and other prominent Facility components will be periodically inspected to ensure that the selected materials remain durable and attractive. A program of scheduled maintenance will be followed to repair or replace any façade materials that show accelerated wear. The areas surrounding the Facility will be similarly maintained and kept free from loose debris or other refuse.

Implementation of the landscaping plan will include low-maintenance and drought-resistant plantings, to the extent possible, in order to minimize continued maintenance requirements and re-plantings. Any lawn areas will be mowed on a regular schedule, and annual clean-up programs during the spring and fall would ensure fallen leaves and annual vegetation are properly removed. Landscape plantings that do not survive will be replaced during the next available planting cycle to maintain the integrity of the landscaping plan.

5.5.7 Lighting Plan

Normal plant lighting and emergency temporary lighting will be provided throughout the Facility. The Project's proposed lighting design will minimize off-site impacts, while providing the sufficient lighting to ensure worker safety during routine operations and maintenance. The site lighting will be designed according to the latest edition of the Illuminating Engineering Society (IES) Lighting Handbook. The Lighting Plan is included as sheet SP-7 of the Site Plan Drawings. It is anticipated that the final lighting plan will be developed as design progresses.

A FAA Determination of No Hazard to Air Navigation is required for the CPV Valley Energy Center because the stack height would be greater than 200 feet. It is anticipated that stack

lighting will be in accordance with FAA advisory circular No. 70/7460-2 called Obstruction Marking and Lighting, a med-duel system – Chapters 4, 8 (M-Duel), &12.

The FAA allows several options for the type of lighting and stack marking as described in the guidance documents listed below. The options include for example: Red Obstruction Lights, Medium Intensity Flashing White Obstruction Lights, High Intensity Flashing White Lights, Dual Lighting (red lighting for nighttime and high or medium intensity white lighting for day time and twilight).

Based on communication with a FAA representative (TRC, Laura Lefebvre telephone communication with Suzanne Dempsey, FAA Aeronautical Information Specialist, January 5, 2009), the red lighting for night time is typically preferred by residences (compared to white lighting). If red lights for night time are preferred by the Planning Board, the following lighting would be used based on FAA guidance circulars:

- *Night Protection* – 2,000 candelas (cd) red strobe and side lights (L-864)
- *Day/Twilight Protection* – 20,000 cd white Strobe (L-865)

5.6 CONCLUSIONS

The results of the viewshed analysis and field survey show that the areas with the greatest potential for views of the Project are limited to open areas in both low lying locations and at higher elevations where views of the site are not obscured by hills and vegetation. The most concentrated views occur at the site extending out to 2 miles. Within 1 mile, visibility is fairly evenly dispersed at all compass bearings surrounding the site. The remaining viewshed shows visible areas more toward the northeast. Views from most parks, schools, and other sensitive receptors considered in this study would be very limited as a result of dense tree cover and intervening topography.

The photosimulations show the type of view that could be seen from various vantage points and distances to the Project. The results illustrated in the viewpoint photosimulations are conservative in that the viewpoints chosen show those areas with the most clear and unobstructed view which exist only in limited and specific locations.

The CPV Valley Energy Center will create a new visual element in the landscape from certain viewpoints. Places where the Facility will appear large in relation to the landscape are limited to those located very close to the site along major roadways (i.e., I-84 and Route 6) where motorists would view the Project for short periods of time while it is in their field of vision.

The Route 6 and I-84 viewpoints illustrate how the scale and form of the CPV Valley Energy Center will redefine current open space/agricultural use views to one of an industrial setting. Nearfield viewpoints - generally those within approximately 3,000 feet of the Facility - such as the ones represented by Route 6, I-84, the Horizons at Wawayanda parking lot, the unobstructed single family backyard location on Kirbytown Road, and the Bates Gates Road viewpoint, clearly illustrate that portions of the building structures and exhaust stacks will be visible from those locations.

The proximity of the nearfield viewpoints to the Facility result in substantial visual impacts at those viewpoints.. The largest visual impact to the nearfield viewpoints relates to scale, where the large size of the proposed facility shows the large contrast in scale compared to other elements in the landscape. Further, the line of the nearfield viewpoints, and to lesser extent midfield viewpoints, is compromised by the introduction of a strong vertical element. In these viewpoints the stacks break the established horizontal ridgeline, adding an element of contrast that contributes to the project's substantial visual impact on nearfield viewpoints. From far field viewpoints, the distances to the facility mitigate the project's scale. Similarly, from most far field viewpoints the facility is at a lower elevation, which means that the stacks do not break established ridgelines, largely preserving the existing line of the viewpoints analyzed. The Facility's visual impacts on nearfield viewpoints are largely unmitigable. While color and landscaping are used to soften some of the impacts, the scale of the development while viewed from the nearfield makes it impossible to fully mitigate the project's impact on visual resources.
The vapor plume from the two exhaust stacks will also add to the vertical image impact of the Facility during limited periods when temperature, relative humidity and wind speed are conducive to plume formation. The vapor plume will be a wispy light cloudy type of visual element approximately 16.7 percent of the daylight hours. At all other times there should be no visible plume seen from the stacks. When the plume is visible, it can increase a project's impact on visual resources, since the acuity of the human eye will notice the plume's movement and draw attention to the project.

Table 5-1
New York State Preservation Historical Information Network Exchange (SPHINX) Database Sites

ID No.	Street Address/Location/Bldg. Name	Town	Distance from Project (Miles)	NRHP Determination
91	6 ½ STATION RD NORTHWEST PARCEL OF STATION RD – CHEECHUNK RD INTERSECTION	GOSHEN	4.6	I
92	212 CHEECHUNK RD	GOSHEN	3.3	I
93	481 GOLF LINKS RD	GOSHEN	2.4	I
94	528 GOLF LINKS RD	GOSHEN	2.3	I
95	2 JOHN DOWNEY LN	GOSHEN	3.7	I
96	173 MAPLE AVENUE SAWYER FARMHOUSE	GOSHEN	3.7	I
97	PHILLIPSBURG RD FORMER ORANGE COUNTY HUNT CLUB/RICHARDSON HOUSE	GOSHEN	4.0	I
98	6 1/2 STATION RD, JOHN WELLS HOMESTEAD	GOSHEN	4.3	I
118	MIDDLETOWN PSYCHIATRIC CENTER	MIDDLETOWN	2.6	D
125	37-40 ACADEMY AVE	MIDDLETOWN	2.4	I
124	13 ADAMS ST	MIDDLETOWN	1.6	I
123	32 ADAMS ST	MIDDLETOWN	1.6	I
122	13 BENTON ST	MIDDLETOWN	2.5	I
121	1 BROWN AVE	MIDDLETOWN	2.2	I
120	CARMELITE DR , BRENDSMA HALL	MIDDLETOWN	1.6	I
119	COTTAGE ST, ST PAUL'S BAPTIST CHURCH	MIDDLETOWN	3.1	I
117	25 EAST AVENUE	MIDDLETOWN	2.4	I
115	WEBB HORTON MEMORIAL PRESBYTERIAN CHURCH	MIDDLETOWN	2.5	I
114, 116	12-16 EAST MAIN ST STORE-APT	MIDDLETOWN	2.4	I
109	112 GRAND AVE TWIN TOWERS SCHOOL	MIDDLETOWN	3.2	I
112	52-73 GRAND AVE	MIDDLETOWN	2.9	I
110	34 GROVE ST	MIDDLETOWN	2.8	I
111	9 GROVE ST	MIDDLETOWN	2.7	I
108	MIDDLETOWN ARMORY EAST SIDE; SOUTH OF WICKHAM AVE INTERSECTION	MIDDLETOWN	2.6	I
106	100 HIGHLAND AVE CL MERRITT HOUSE (LEVINE RESIDENCE)	MIDDLETOWN	2.9	I
107	10-19 HIGHLAND AVENUE	MIDDLETOWN	2.5	I
105	33 HIGHLAND AVENUE	MIDDLETOWN	2.6	I
105	37 HIGHLAND AVENUE	MIDDLETOWN	2.6	I
105	38 HIGHLAND AVENUE	MIDDLETOWN	2.6	I
104	48 HIGHLAND AVENUE	MIDDLETOWN	2.6	I
43	140 HIGHLAND MANOR	MIDDLETOWN	3.1	I
102	12 HOUSTON AVE	MIDDLETOWN	2.4	I
102	14 HOUSTON AVE	MIDDLETOWN	2.4	I
101	YOUNG's BREWERY	MIDDLETOWN	2.9	I
100	52-62 LINDEN AVE	MIDDLETOWN	2.9	I
99	14 LINDEN PL	MIDDLETOWN	2.9	I
99	15 LINDEN PL	MIDDLETOWN	2.9	I
25	21 LINDEN PL	MIDDLETOWN	2.8	I

Table 5-1
New York State Preservation Historical Information Network Exchange (SPHINX) Database Sites

ID No.	Street Address/Location/Bldg. Name	Town	Distance from Project (Miles)	NRHP Determination
26	3 LINDEN PL	MIDDLETOWN	2.9	I
27	27 MILLS AVE	MIDDLETOWN	1.9	I
28	106 MONHEGAN AVE	MIDDLETOWN	2.5	I
29	109 MONHEGAN AVE	MIDDLETOWN	2.5	I
30	10 MONTGOMERY ST	MIDDLETOWN	2.6	I
31	18 MONTGOMERY ST	MIDDLETOWN	2.6	I
32	7 MONTGOMERY ST	MIDDLETOWN	2.6	I
33	FIRST BAPTIST CHURCH	MIDDLETOWN	2.3	I
35	10 MULBERRY ST MULBERRY HOUSE	MIDDLETOWN	2.3	I
36	GRACE EPISCOPAL CHURCH	MIDDLETOWN	2.5	I
37	MASONIC LODGE	MIDDLETOWN	2.6	I
38	17 NORTH ST STORE OFFICES, APT	MIDDLETOWN	2.4	I
39	2-4 NORTH ST	MIDDLETOWN	2.4	I
40	40 NORTH ST (RUTHBERG'S)	MIDDLETOWN	2.4	I
42	ORCHARD ST OLD THRAIL LIBRARY	MIDDLETOWN	2.6	I
44	26 PROSPECT AVE	MIDDLETOWN	2.3	I
45	40 PROSPECT AVE	MIDDLETOWN	2.4	I
46	41 PROSPECT AVE	MIDDLETOWN	2.4	I
47	42 PROSPECT AVE	MIDDLETOWN	2.4	I
48	43 PROSPECT AVE	MIDDLETOWN	2.4	I
49	44 PROSPECT AVE	MIDDLETOWN	2.4	I
50	46 PROSPECT AVE	MIDDLETOWN	2.4	I
51	24-26 RAILROAD AVE	MIDDLETOWN	2.7	I
52	29 RAILROAD AVE (KLINK DENTAL OFFICE)	MIDDLETOWN	2.7	I
53	39 RAILROAD AVE	MIDDLETOWN	2.7	I
54	10 ROBERTS ST	MIDDLETOWN	2.5	I
55	24 ROBERTS ST CHARLES R. FULLER HOUSE	MIDDLETOWN	2.5	I
56	30 ROBERTS ST	MIDDLETOWN	2.6	I
57	46 ROBERTS ST	MIDDLETOWN	2.6	I
60	195 SOUTH ST	MIDDLETOWN	1.4	I
61	17 WASHINGTON ST CJ VAIL RESIDENCE	MIDDLETOWN	2.3	I
62	20 WASHINGTON ST	MIDDLETOWN	2.3	I
63	45 WASHINGTON ST	MIDDLETOWN	2.3	I
64	59 WEBB DR	MIDDLETOWN	1.3	I
66	ST. PAUL'S CHURCH	MIDDLETOWN	2.4	I
67	10 WEST MAIN ST	MIDDLETOWN	2.4	D
68	106 WEST MAIN ST	MIDDLETOWN	2.5	I
69	109 WEST MAIN ST	MIDDLETOWN	2.5	I
70	112 WEST MAIN ST	MIDDLETOWN	2.5	I
71	113 WEST MAIN ST	MIDDLETOWN	2.5	I
72	116 WEST MAIN ST	MIDDLETOWN	2.5	I
73	12 WEST MAIN ST APTS/ARMY NAVY STORE	MIDDLETOWN	2.4	D
74	13-15 WEST MAIN ST FRANGAS STORE/APT	MIDDLETOWN	2.4	D

Table 5-1
New York State Preservation Historical Information Network Exchange (SPHINX) Database Sites

ID No.	Street Address/Location/Bldg. Name	Town	Distance from Project (Miles)	NRHP Determination
75	2 WEST MAIN ST TAILER SHOP & APT	MIDDLETOWN	2.4	D
76	3 WEST MAIN ST LEATHER SHOP-BEAUTY PARLOR	MIDDLETOWN	2.4	D
77	5-11 WEST MAIN ST (CARLSON & TOWNER CLOTHING STORE)	MIDDLETOWN	2.4	D
78	6-8 WEST MAIN ST INCOME TAX FIRM & APTS	MIDDLETOWN	2.4	D
79	60 WEST MAIN ST	MIDDLETOWN	2.6	I
80	62-70 WEST MAIN ST	MIDDLETOWN	2.6	I
81	WALLKILL CEMETERY CEMETERY ROAD OFF OF PHILLIPSBURG	WALLKILL		I
82	733 EAST MAIN ST	WALLKILL	4.3	I
83	758 EAST MAIN ST	WALLKILL	4.2	I
84	225 HOWELLS RD	WALLKILL	4.2	I
85	320 HOWELLS RD	WALLKILL	4.3	I
86	105 MAPLES RD, HEINBACH	WALLKILL	4.7	I
87	220 MAPLES RD, HEINBACH	WALLKILL	4.8	I
88	94 MAPLES RD, OLIVER	WALKILL	4.6	I
89	80 SULLIVAN LN	WALKILL	5.0	I
1	US 6, MID-HUDSON PSYCHIATRIC CENTER AKA NEW HAMPTON TRAINING SCHOOL (8 BUILDINGS)	WAWAYANDA	2.4	D
	96-97 DEBLOCK RD	WAWAYANDA	2.5	I
2	1197 DOLSONTOWN RD	WAWAYANDA	1.6	I
3	29 GONZALEZ DR	WAWAYANDA	0.6	I
4	169 GREEVES RD	WAWAYANDA	1.04	I
5	106 MCBRIDE RD	WAWAYANDA	1.7	I
6	THOS. ELLIS HOUSE, NORTH SIDE RIDGEBURY RD AT GUINEA HILL RD	WAWAYANDA	2.05	I
7	439 RIDGEBURY RD	WAWAYANDA	3	I
8	535 RIDGEBURY RD	WAWAYANDA	2.5	I
10	699 RIDGEBURY RD	WAWAYANDA	1.8	I
11	820 RIDGEBURY RD	WAWAYANDA	1.4	I
12	138 SEWARD RD	WAWAYANDA	0.9	I

D = eligible as a historic district or as part of a historic district
I = eligible as an individual historic resource

Table 5-2
Summary of Visual Resources and Viewpoints Selected for Photosimulations

ID #	Distance from Site	Description of Viewpoint	Land Use	Historic-Scenic Significance	Potential Visibility Based on Viewshed Map (Topography and Vegetation)	Potential Visibility Based on Viewshed Map (Topography only)	Comments	Selected Viewpoint for Photo-Simulations
State Inventory								
H1	1.97 miles	Webb Horton House	Developed	NRHP	no	yes	Proximate to VP8	-
H2	2.1 miles	Hillside Cemetery	Cemetery	NRHP	partial	yes	Proximate to VP8 and VP 1.	-
H3	2.1 miles	Dunning House	Residential	NRHP	no	yes	Not visible based on viewshed mapping and balloon study.	-
H4	2.4 miles	Primitive Baptist Church of Brookfield	Residential	NRHP	yes	yes	Photosimulation confirms as not visible.	VP 7
H5	2.4 miles	Paramount Theater	Developed	NRHP	yes	yes	Appeared to be not visible based on field assessment. Photosimulation shows as barely visible.	VP 1
H6	2. 9 miles	Oliver Avenue Bridge	Developed	NRHP	no	no	-	-
H7	4.1 miles	Sawyer Farmhouse	Developed	NRHP	no	no	-	-
H9	2.5 miles	Woodlawn Farm	Residential	NRHP	no	borderline visible	Not visible based on viewshed mapping and Balloon study.	-
H10	2.5 miles	Christ Church 6 Orchard Street in Middletown	Developed	NRHP	yes	yes	Proximate to VP1	-
H11	2.5 miles	First Congregational Church of Middletown 35 East Main Street in Middletown	Developed	NRHP	yes	yes	Proximate to VP1	-
P2	1.6 miles	Proposed Orange Heritage Trail	Recreation	NRT	yes	yes	Visible in some areas. Photosimulation shows small portion of stack visible through trees at selected viewpoint.	VP 2
Local								
S21	4.4 miles	Minisink Valley Elementary School	School		no	no	Not visible based on line of sight location and balloon study.	-
S22	4.5 miles	Minisink Valley Middle School	School		yes	yes	Not visible based on line of sight location and balloon study.	-

Table 5-2
Summary of Visual Resources and Viewpoints Selected for Photosimulations

ID #	Distance from Site	Description of Viewpoint	Land Use	Historic-Scenic Significance	Potential Visibility Based on Viewshed Map (Topography and Vegetation)	Potential Visibility Based on Viewshed Map (Topography only)	Comments	Selected Viewpoint for Photo-Simulations
P1	1.0 mile	Ben and Paula Amchir Park	Recreation		no	yes	Selected as a viewpoint to confirm Facility cannot be seen from this location. Photosimulation confirms as not visible	VP 3
P3	2.1 miles	Maple Hill Park	Recreation		no	no	-	-
P4	2.9 miles	Shannen Park	Recreation		no	yes	Selected as a viewpoint to confirm Facility cannot be seen from this location. Photosimulation confirms as not visible.	VP 4
P5	2.9 miles	City Park – Wallkill	Recreation		no	yes	-	-
P6	3.0 miles	Francher-Davidge Park	Recreation		no	yes	-	-
P7	3.5 miles	Watts Memorial Park	Recreation		no	no	-	-
P8	4.2 miles	City Park – Middletown	Recreation		no	borderline visible	-	-
-		New York State Bike Route 17	Developed		yes	yes	Visible from nearfield locations.	VP11
G1	3.5 miles	Orange County Golf Club	Recreation		no	partial	-	-
O1	2.3 miles	Hunter Farm Preserve	Nature Preserve		partial	partial	-	-
O2	2.5 miles	Mount Orange Easement	Conservation		no	partial	-	-
O3	4.6 miles	Orange County Audubon Sanctuary	Nature Preserve		no	no	-	-
O4	4.7 miles	Orange County Farmland	Conservation easement		no	partial	-	-
Identified by Applicant (closest residential areas)								
	0.3 - 0.4 miles	Residential Area along Kirbytown Road	Residential		yes VP 6/ borderline visible for VP 12	yes	Likely visible, based on field assessment in select locations. Photosimulations shows as visible.	VP 6 and VP 12
	0.6 miles	Bates Gates Road	Rural Residential		yes	yes	Likely visible based on field assessment. Photosimulation shows as visible.	VP 5
	0.8 miles	Balchem Corporation	Commercial		yes	yes	Balloon was visible	VP 9

Table 5-2
Summary of Visual Resources and Viewpoints Selected for Photosimulations

ID #	Distance from Site	Description of Viewpoint	Land Use	Historic-Scenic Significance	Potential Visibility Based on Viewshed Map (Topography and Vegetation)	Potential Visibility Based on Viewshed Map (Topography only)	Comments	Selected Viewpoint for Photo-Simulations
Identified during Planning Board Meeting for EAF								
	1.7 miles	Truman Moon School	School		no	yes	Not visible based on field assessment due to topography, vegetation, and houses/structures blocking views. Viewpoint selected to document no views. Photosimulation shows as not visible	VP 8
Identified by Lead Agency								
	0.25 mile	Route 6	Residential Commercial		yes	yes	Visible at locations near Facility. Photosimulation shows as visible.	VP 11
	0.25 mile	I-84	Commercial Industrial		yes	yes	Visible at locations near Facility. Photosimulation shows as visible	VP 13
PB1	3.2 miles	Stony Bar Road	Rural Residential		no	no	Balloon not visible	-
PB2	1.5 miles	349 Greeves Road	Residential		yes	yes	Balloon is visible. Photosimulation shows partial views of stack.	VP 14
PB3	0.9 mile	Sutton Apartments	Residential		yes	yes	Balloon is visible Photosimulation shows upper portion of stack visible through trees.	VP 15
PB4	1 mile	Creeden Hill	Residential		yes	yes	Balloon barely visible	-
PB5	1.8 miles	McBride Road	Rural Residential		no	yes	Balloon not visible	-
PB6	2.5 miles	20 Mount Orange Road	Residential		no	borderline visible	Balloon not visible	-
PB7	1.6 miles	Koutney Lane	Residential		no	yes	Balloon not visible	-
PB8	4.4 miles	Minisink Valley High School	School		yes	yes	Balloon not visible	-
PB9	4.0 miles	Mount Orange Road	Rural Residential		no	borderline visible	Balloon not visible	-
PB10	2.5 miles	Delmar Hill	Rural Residential		no	yes	Balloon not visible	-
PB11	2.1 miles	Dunning House	Residential		no	yes	Balloon not visible	-
PB12	2.2 miles	Guinea Hill	Residential		no	yes	Balloon not visible	-
PB13	1.6 miles	Still Water Road	Residential		yes	yes	Balloon not visible	-
PB14	1.8 miles	Post Road	Rural Residential		no	yes	Balloon not visible	-

Table 5-2
Summary of Visual Resources and Viewpoints Selected for Photosimulations

ID #	Distance from Site	Description of Viewpoint	Land Use	Historic-Scenic Significance	Potential Visibility Based on Viewshed Map (Topography and Vegetation)	Potential Visibility Based on Viewshed Map (Topography only)	Comments	Selected Viewpoint for Photo-Simulations
PB15	0.5 mile	Horizons at Wawayanda	Residential		borderline visible	yes	Balloon is visible. Photosimulation shows upper portion of east side of facility visible.	VP 10

Table 5-3
New York State Preservation Historical Information Network Exchange (SPHINX) Database Sites within the Theoretical Viewshed of Project

ID No.	Street Address/Location/Bldg. Name	Town	Distance from Project (Miles)	NRHP Determination	Representative Viewpoint
124	13 ADAMS ST	MIDDLETOWN	1.6	I	VP8
123	32 ADAMS ST	MIDDLETOWN	1.6	I	VP8
119	COTTAGE ST, ST PAUL'S BAPTIST CHURCH	MIDDLETOWN	3.1	I	VP1
115	WEBB HORTON MEMORIAL PRESBYTERIAN CHURCH	MIDDLETOWN	2.5	I	VP1
114, 116	12-16 EAST MAIN ST STORE-APT	MIDDLETOWN	2.4	I	VP1
112	52-73 GRAND AVE	MIDDLETOWN	2.9	I	VP1
111	9 GROVE ST	MIDDLETOWN	2.7	I	VP1
108	MIDDLETOWN ARMORY EAST SIDE; SOUTH OF WICKHAM AVE INTERSECTION	MIDDLETOWN	2.6	I	VP1
106	100 HIGHLAND AVE CL MERRITT HOUSE (LEVINE RESIDENCE)	MIDDLETOWN	2.9	I	VP1
107	10-19 HIGHLAND AVENUE	MIDDLETOWN	2.5	I	VP1
105	37 HIGHLAND AVENUE	MIDDLETOWN	2.6	I	VP1
105	38 HIGHLAND AVENUE	MIDDLETOWN	2.6	I	VP1
104	48 HIGHLAND AVENUE	MIDDLETOWN	2.6	I	VP1
102	12 HOUSTON AVE	MIDDLETOWN	2.4	I	VP1
102	14 HOUSTON AVE	MIDDLETOWN	2.4	I	VP1
100	52-62 LINDEN AVE	MIDDLETOWN	2.9	I	VP1
99	14 LINDEN PL	MIDDLETOWN	2.9	I	VP1
99	15 LINDEN PL	MIDDLETOWN	2.9	I	VP1
25	21 LINDEN PL	MIDDLETOWN	2.8	I	VP1
38	17 NORTH ST STORE OFFICES, APT	MIDDLETOWN	2.4	I	VP1
39	2-4 NORTH ST	MIDDLETOWN	2.4	I	VP1
40	40 NORTH ST (RUTHBERG'S)	MIDDLETOWN	2.4	I	VP1
42	ORCHARD ST OLD THRAIL LIBRARY	MIDDLETOWN	2.6	I	VP1
52	29 RAILROAD AVE (KLINK DENTAL OFFICE)	MIDDLETOWN	2.7	I	VP1
53	39 RAILROAD AVE	MIDDLETOWN	2.7	I	VP1
61	17 WASHINGTON ST CJ VAIL RESIDENCE	MIDDLETOWN	2.3	I	VP1
62	20 WASHINGTON ST	MIDDLETOWN	2.3	I	VP1
66	ST. PAUL'S CHURCH	MIDDLETOWN	2.4	I	VP1
67	10 WEST MAIN ST	MIDDLETOWN	2.4	D	VP1
73	12 WEST MAIN ST APTS/ARMY NAVY STORE	MIDDLETOWN	2.4	D	VP1
74	13-15 WEST MAIN ST FRANGAS STORE/APT	MIDDLETOWN	2.4	D	VP1
75	2 WEST MAIN ST TAILOR SHOP & APT	MIDDLETOWN	2.4	D	VP1
76	3 WEST MAIN ST LEATHER SHOP-BEAUTY PARLOR	MIDDLETOWN	2.4	D	VP1
77	5-11 WEST MAIN ST (CARLSON & TOWNER CLOTHING STORE)	MIDDLETOWN	2.4	D	VP1

Table 5-3
New York State Preservation Historical Information Network Exchange (SPHINX) Database Sites within the Theoretical Viewshed of Project

ID No.	Street Address/Location/Bldg. Name	Town	Distance from Project (Miles)	NRHP Determination	Representative Viewpoint
78	6-8 WEST MAIN ST INCOME TAX FIRM & APTS	MIDDLETOWN	2.4	D	VP1
2	1197 DOLSONTOWN RD	WAWAYANDA	1.6	I	VP-2
4	169 GREEVES RD	WAWAYANDA	1.04	I	VP-14

D = eligible as a historic district or as part of a historic district
I = eligible as an individual historic resource