

15.0 GROUNDWATER

15.1 LOCATION AND MAPS

The Bingham Wind Project (project) is located across six U.S. Geological Survey quadrangles: Dimmick Mountain, Foster Ridge, Whetstone Pond, Guilford, Kingsbury, and Mahoney Hill. Maine Geological Survey Significant Sand and Gravel Aquifer Maps¹ show that there are two mapped significant sand and gravel aquifers in the general vicinity of the project (Figure 15-1). The nearest proposed turbine location is approximately 895 feet from a mapped aquifer in the Mahoney Hill quadrangle. Also in the Mahoney Hill quadrangle in Mayfield, a mapped aquifer intersects the electrical collector line, as well as the proposed Operations and Maintenance (O&M) building. A mapped aquifer in the Kingsbury quadrangle also intersects the proposed electrical collector line. It is located 2.5 miles from the proposed project substation in Mayfield, and is 1 mile from the nearest turbine location.

According to the Maine Drinking Water Program database,² there are no known public drinking water supply wells in the area within 100 feet of the project. During surveys, one abandoned well was observed approximately 130 feet from the proposed collector line (Figure 15-1; Photo 15-1). There are no U.S. Environmental Protection Agency-designated sole source aquifers located in the project area.³



Photo 15-1. Abandoned well observed during surveys.

¹ Maine Geological Survey, Online Significant Sand and Gravel Aquifers Maps. [Online] URL: <http://www.maine.gov/doc/nrimc/mgs/pubs/online/aquifers/aquifers-ad.htm> (Accessed August 8, 2012)

² Maine Office of Geographic Information Systems. Maine Department of Human Services, Drinking Water Program GPS, 1991-2003. [Online] URL: <http://geolibportal.usm.maine.edu/geonetwork/srv/en/metadata.show?id=146> (Accessed March 12, 2013)

³ USEPA, Designated Sole Source Aquifers in EPA Region 1. [Online] URL: http://www.epa.gov/region01/eco/drinkwater/pc_solesource_aquifer.html (Accessed August 8, 2012)

15.2 QUANTITY

A single bedrock well is proposed to serve the domestic water needs at the O&M building (Section 16). This well location occurs on a mapped significant sand and gravel aquifer. Daily withdrawal is expected to be less than 1,000 gallons.

15.3 SOURCES OF CONTAMINATION

The potential sources of groundwater contamination during construction will be fuel and hydraulic and lubricating oils used in the operation of vehicles and construction equipment. Any potential spills of these materials from vehicles or equipment are typically small and of very short duration. Spills that are properly cleaned in a timely manner should not pose any risk to groundwater quality. Procedures for handling these materials and preventing spills are located in the Construction Spill Prevention, Containment, and Control (SPCC) Plan for the project (Exhibit 15A). The plan provides descriptive procedures for safe storage and handling of materials in order to prevent spills, as well as spill reporting procedures, emergency contact telephone numbers (including state and federal environmental agencies), and oil spill cleanup guidelines. In the event of an oil or hazardous material spill, employees working on-site will be trained to promptly contain, report, and clean up the spill in accordance with these procedures. In addition, as a standard operating procedure, operational vehicles and the O&M building carry an oil spill kit that contains material for conducting initial containment and clean-up of potential spills. The O&M Building contains product and waste oils, which are inventoried within the operational SPCC plan and are stored within secondary containment inside the building. There is no drain within the O&M building to prevent a pathway for a release to the environment, and the O&M staff are trained to properly respond to and report spills.

15.4 VEGETATION MAINTENANCE ON ELECTRICAL COLLECTOR SYSTEM

In accordance with the Post-Construction Vegetation Management Plan (Section 10), the proposed electrical collector system and electrical generator lead will be maintained to keep vegetation a safe distance from electrical components. In addition to hand or mechanical cutting of vegetation that poses a safety or reliability hazard to the lines, low volume, targeted foliar application of herbicides will be conducted as necessary. Herbicides may also be applied to cut stumps and surfaces of larger trees to control future growth. All herbicides used will be low-toxicity with low soil mobility and are registered with the U.S. Environmental Protection Agency and approved for use by the Maine Board of Pesticides Control. Application of any herbicide will be carried out in accordance with approved state guidelines as described in the Post-Construction Vegetation Management Plan, and, when used in accordance with their label specifications and guidelines, is designed to prevent adverse impact on groundwater quality.

15.5 MEASURES TO PREVENT DEGRADATION

The methods, plans, and procedures established to prevent groundwater degradation during construction of the proposed project are incorporated in the Basic Standards (Section 14), and the Construction SPCC Plan (Exhibit 15A). These procedures establish a set of minimum

requirements for spill prevention and response during construction. The procedures incorporate measures developed and fine-tuned from experience during other wind turbine construction projects, including input from the Maine Department of Environmental Protection (MDEP) and other review agencies. The procedures incorporated into the plan have proven successful for preventing spills and for addressing spills should they occur. Both the contractors and environmental inspectors will train all personnel working on the project to follow these procedures.

15.6 GROUNDWATER PROTECTION PLAN

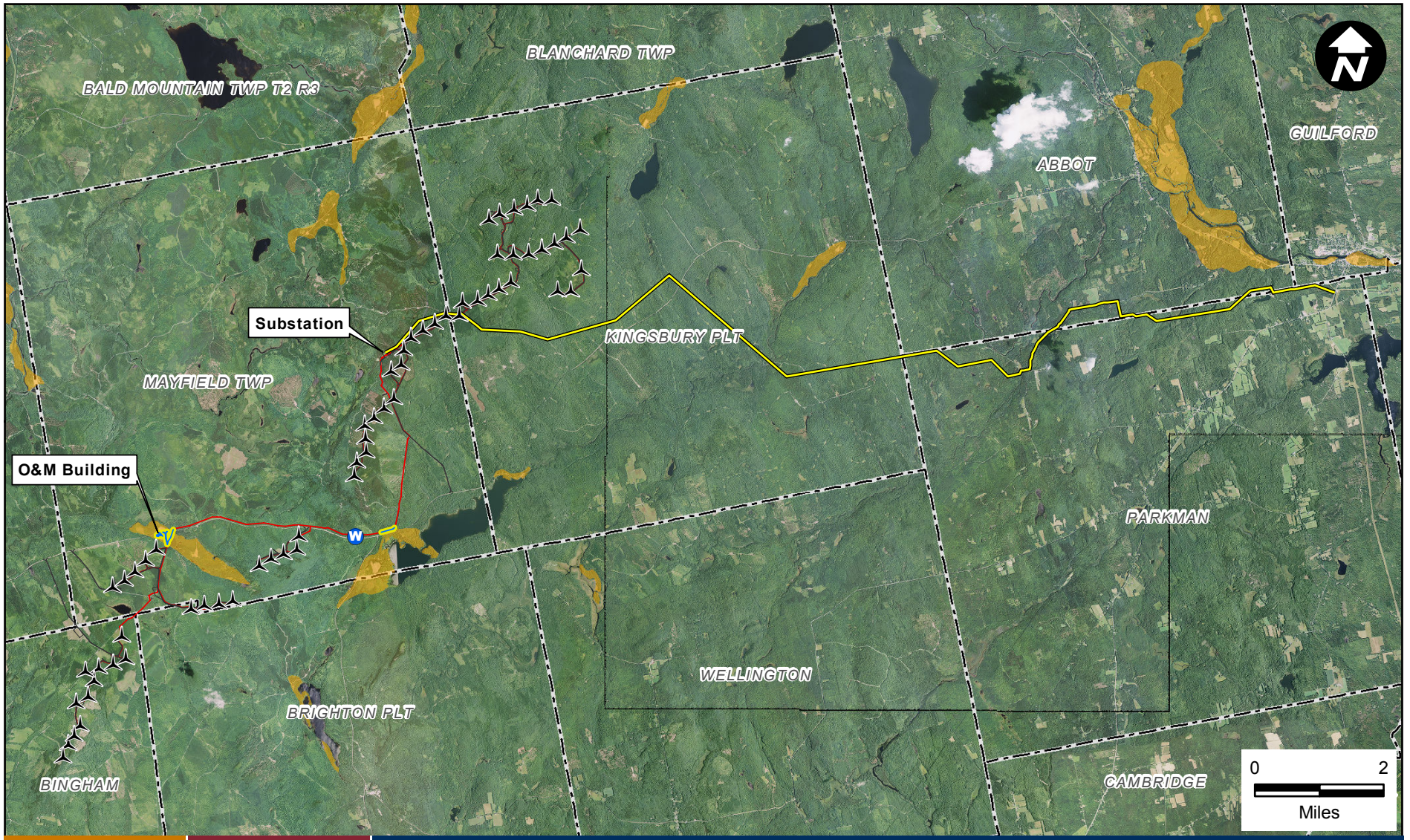
The project will not significantly alter existing surface water drainage characteristics, as described in Section 12, Stormwater Management. Temporary impacts to surface water drainage may occur during construction. The use of herbicides, petroleum, and other hydrocarbon products during construction and operation represent a potential threat to groundwater quality. Measures to address potential impacts are included in the procedures found in this section, as well as Sections 10 and 14 of this application. These documents, and adherence to the design and procedural requirements they contain, represent the groundwater protection and monitoring plans for the project. Accordingly, the construction or operation of the project is not expected to adversely affect groundwater resources.

15.6.1 Groundwater Protection During Operation

Prior to operation, an SPCC Plan associated with turbine operation, the O&M building, and the substation will be completed in accordance with 40 CFR 112 and filed with the MDEP upon completion. An example of the standard operational SPCC Plan used by First Wind and approved by the State is included as Exhibit 15A.

Figure 15-1

Significant Sand and Gravel Aquifer Map



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Legend

- Turbine Layout
- Abandoned Well
- Edge of Gravel
- Summit Collector
- Electrical Generator Lead
- Infrastructure Aquifer Crossing
- Significant Sand And Gravel Aquifer

Client/Project
 Bingham Wind Project

Figure No.
 15-1

Title
 Significant Sand and
 Gravel Aquifer Map

4/9/2013

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Exhibit 15A: Construction Spill Prevention, Containment, and Control Plan

Construction Spill Prevention, Containment, and Control (SPCC) Plan

Bingham Wind Project
Bingham, Moscow, Mayfield Township,
Kingsbury Plantation, Abbot, and Parkman
Somerset and Piscataquis Counties, Maine

Prepared for:

**Blue Sky West, LLC
Blue Sky West II, LLC**

Prepared by:

Stantec Consulting

March 2013

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1.0 INTRODUCTION

Blue Sky West, LLC and Blue Sky West II, LLC (Applicants) contracted Stantec Consulting to prepare this Construction Spill Prevention, Containment, and Control Plan (SPCC) as a stand-alone document identifying the general requirements during the construction phase for spill prevention, containment, and control.

The potential sources of groundwater contamination during construction will primarily be fuel and hydraulic and lubricating oils used in the operation of vehicles and construction equipment. Any spills of these materials from the vehicles or equipment are typically small and of very short duration. Spills that are properly cleaned up in a timely manner should not pose any risk to groundwater quality. Procedures for handling these materials and preventing spills are detailed below. The basic elements of these respective plans provide descriptive procedures for safe storage and handling of materials in order to prevent spills, as well as spill reporting procedures, emergency contact telephone numbers (including state and federal environmental agencies), and oil and hazardous material spill cleanup guidelines. In the event of an oil or hazardous material spill, on-site employees will be trained to promptly contain, report, and clean up the spill in accordance with these procedures. In addition, as a standard operating procedure, operational vehicles carry an oil spill kit that contains material for conducting initial containment and clean-up of spills.

2.0 GENERAL REQUIREMENTS

- Contractors/subcontractors will store, transport, and use oil, hazardous materials, and wastes in accordance with all applicable local, state, and federal regulations and the requirements set forth in this plan.
- At a minimum, contractors/subcontractors will follow Maine Erosion and Sediment Control Best Management Practices as set forth by the Maine Department of Environmental Protection (MDEP) when storing, transporting, or using oil, hazardous materials, and wastes.
- Vehicles and equipment containing petroleum that are in use in the project area will be inspected regularly for leaks or signs of deterioration that could cause a leak or spill. Leaking or deteriorated conditions will be repaired prior to use.
- Contractors/subcontractors will take care not to cause an uncontrolled spill or release of oil or hazardous materials to the environment.
- Contractors/subcontractors will provide and maintain sufficient on-site spill cleanup and containment supplies (e.g., absorbent pads, containment booms, protective clothing, debris containers) to control releases of oil, hazardous materials, or wastes. In addition, operational vehicles will carry an oil spill kit that contains material for conducting initial containment and clean-up of spills.
- Contractors/subcontractors will remove oils, hazardous materials, wastes, and unused materials from the work site at the completion of the job. This includes full and partially full containers of waste material such as, but not limited to, rags, gloves, trash, scrap material, and empty containers.
- Within six months after the beginning of facility operations, an SPCC Plan associated with turbine operation, the Operations and Maintenance building, and electrical substation will be completed in accordance with 40 CFR 112 and filed with the MDEP upon completion.

3.0 STORAGE AND HANDLING REQUIREMENTS

- Contractors/subcontractors will store only the minimal amount of material (at each work site) necessary to complete the work.
- Handling and application of pesticides and herbicides shall only be in accordance with regulations under the Maine Pesticide Control Act of 1975, as amended, Title 7 M.R.S.A., Section 601.
- Petroleum products and other hazardous materials will not be stored or transferred, including fueling of vehicles and equipment, within 100 feet of waterbodies, wetlands, rare plant or unique natural community locations, within 200 feet from known water supply wells, or over any sand and gravel aquifer.

- Overnight parking of equipment will not occur within 100 feet of waterbodies and wetlands, within 200 feet of known water supply wells.
- Petroleum products will be stored in Maine Department of Transportation-approved containers or approved tanks in areas not considered to be environmentally sensitive.
- Containers will be kept closed unless material is being transferred.
- Contractors/subcontractors will ensure that all transferring operations are monitored and not left unattended.
- Containers will not be stored on the ground, but will be stored in cabinets or on a firm working surface such as a portable trailer bed or other secure decking.
- If at any time a contractor/subcontractor needs to store oil including, but not limited to, fuel oil, petroleum products, sludge, and oil refuse in excess of an aggregate amount of 1,320 gallons (excluding 55-gallon or less containers) that is located near a pathway to navigable waters, the federal requirements for oil pollution prevention (40 CFR Part 112) must be met. Contractor/subcontractor SPCC plans must be approved by a licensed, professional engineer, and a copy must be sent to the Applicants no later than one week prior to the commencement of the oil storage activities.
- Storage and handling of flammable and combustible liquids, including gasoline and diesel fuel, will be in accordance with rules developed under Title 25 M.R.S.A., Section 2441 (Fire Prevention and Fire Protection), as amended (see also Code of Maine Rules 16-219 Chapter 317). These regulations include, but are not limited to, bonding and grounding during transfer operations, fire protection requirements, storage quantity limitations, and spacing and location requirements.
- Gasoline and fuel storage tanks with greater than a 25-gallon capacity must have secondary containment constructed of an impervious material and be capable of holding 110 percent of tank capacity.
- Handling and disposal of hazardous wastes will be in accordance with MDEP Hazardous Waste Management rules (06-096 Chapters 850 through 857) developed pursuant to Title 38 M.R.S.A., Section 1301 et. seq., and U. S. Environmental Protection Agency regulations (40 CFR 260 through 272). Handling and disposal of waste oil will be in accordance with MDEP Waste Oil Management Rules (06-096 Chapter 860) and U. S. Environmental Protection Agency regulations (40 CFR 279).

4.0 SPILL REPORTING REQUIREMENTS

- Spill reporting requirements are the responsibility of the contractors/subcontractors. As required by Title 38 M.R.S.A., Section 543 and MDEP regulations (06-096 Chapters 600 4.B and 800 4.1), spills of oil or hazardous materials in any amount and under any circumstances must be reported to the MDEP within two hours from the time the spill was discovered at **1-800-482-0777**.
- As required by the federal Clean Water Act (40 CFR Part 110.4), a discharge of oil "which causes a sheen upon the surface of the water or adjoining shore line or oily sludge deposits beneath the surface of the water" must be reported within 24 hours to the National Response Center at **1-800-424-8802**.
- The need to report spills to the National Response Center of hazardous materials other than oil will be determined by the contractors/subcontractors by consulting the Comprehensive Environmental Response, Compensation, and Liability Act list of hazardous substances and reportable quantities (40 CFR Table 302.4). Any spills that involve a reportable quantity of any hazardous substance must be reported to the National Response Center by the contractors/subcontractors. All records of reports will be kept by the contractors/subcontractors.
- The contractors/subcontractors must also report all spills immediately to the Applicants, the Project and/or Construction Manager, and local emergency response officials.

5.0 SPILL CLEAN-UP REQUIREMENTS

- It is the responsibility of the contractors/subcontractors to ensure and oversee immediate and complete cleanup of all spills involving oil or hazardous materials in accordance with state and federal requirements. The contractors/subcontractors are also responsible for all health and safety issues related to the cleanup of oil or hazardous materials. The contractors/subcontractors are also

responsible for expediting the appropriate disposal of spill debris waste and restoring the site to its original condition.

- If the spill cannot be safely handled by personnel on site, the contractors/subcontractors will immediately arrange for a licensed spill response contractor to contain, clean up, and perform required sampling and disposal of spilled materials and debris and comply with applicable reporting requirements.

6.0 PERSONNEL TRAINING REQUIREMENTS

Prior to construction, the contractors/subcontractors will instruct on-site personnel on the operation and maintenance of construction equipment to prevent the accidental discharge or spill of fuel, oil, and lubricants. Personnel will also be made aware of the pollution control laws, rules, and regulations applicable to their work. During construction, spill prevention refresher briefings with the construction crew will be conducted monthly. These briefings will highlight the following:

- Precautionary measures to prevent spills;
- Areas where fueling, storage of liquids or overnight parking is prohibited;
- Potential sources of spills, such as equipment failure or malfunction;
- Standard operating procedures in case of a spill, including applicable notification requirements;
- Equipment, materials, and supplies available for clean-up of a spill; and
- A list of known spill events.