



To: Goodrich Farm - Salisbury
Anaerobic Digester 1 Project File

Date: September 28, 2018

Memorandum

From: Peter Smiar, PE

Project #: 58073.00

Re: Section 248 Water Supply & Conservation, Waste Disposal,
and Soil Erosion Assessment

INTRODUCTION

Salisbury AD 1, LLC ("Salisbury AD 1") proposes to construct and operate an anaerobic digester ("AD") project at the Goodrich Farm in Salisbury, VT. The project received a Section 248 Certificate of Public Good ("CPG") from the Vermont Public Utility Commission ("PUC" or "Commission") on April 8, 2016 ("the As-Approved Project").¹ Lincoln RNG is no longer pursuing development of the project, and will transfer the CPG to Salisbury AD 1, subject to the Commission's prior approval. Salisbury AD 1 has revised the As-Approved Project's design in various respects ("the Proposed Modifications"), resulting in the Final Project.

The content of this technical memorandum presents the results of an assessment of any new or incremental impacts of the Final Project as compared with the As-Approved Project relating to the following Act 250 Criteria, which are given due consideration by the Vermont Public Utility Commission ("PUC") under 30 V.S.A. Section 248 review for a Certificate of Public Good ("CPG"):

- Waste Disposal (Section 248(b)(5) / 10 V.S.A. § 6086(a)(1)(B))
- Water Conservation (Section 248(b)(5)/ 10 V.S.A § 6086(a)(1)(C))
- Water Supply (Section 248(b)(5)/ 10 V.S.A § 6086(a)(2) and (3))
- Soil Erosion (Section 248(b)(5) / 10 V.S.A. § 6086(a)(4))

PROJECT DESCRIPTION

Consistent with the As-Approved Project, the Final Project will consist of the installation and operation of an anaerobic digester facility that will use agricultural waste from the Goodrich Farm and regionally sourced food waste to generate methane gas ("gas"), which will be used for energy generation. The Final Project's siting and layout reflected in these updated materials is based upon a combination of proposed equipment requirements, ongoing farm operational needs and circulation, minimization of impacts to wetland and stream resources and buffers, forested areas (to minimize tree cutting), setbacks from road and property lines, equipment sound levels, visual impact considerations, and existing features. The components of the Final Project and its Proposed Modifications are summarized and depicted in Exh. SAD1-1, Exh. SAD1-2, and Exh. SAD1-3 of the Motion to Amend CPG.

Waste Disposal (§ 6086(a)(1)(B))

The Waste Disposal criterion, given due consideration under Section 248 review, provides that the Project must meet applicable health and Vermont Department of Environmental Conservation ("DEC") regulations regarding the disposal

¹ See Docket #8596.



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of waste, and must not involve the injection of waste materials into groundwater or wells. For the Final Project, VHB's consideration of waste disposal involves sanitary wastewater, process wastewater, stormwater runoff, and general construction waste including tree and brush debris. VHB's consideration of the injection of waste materials into groundwater or wells also involves the Final Project's backup generator and the potential for a leak or spill of diesel fuel.

Sanitary Wastewater

The As-Approved and Final Projects are materially the same and in general result in little generation of sanitary wastewater. The As-Approved Project proposed use of a composting toilet and hand sanitizer for employee restroom and handwashing, respectively, and the Final Project will utilize the same approach for managing sanitary wastes. The Final Project will be permitted as needed through an amendment to the Wastewater System and Potable Water Supply Permit WW-9-1927, previously obtained for the As-Approved Project.

Process Wastewater

Consistent with the As-Approved Project, process water originating from the proposed gas upgrade equipment by DMT Clear Gas Solutions will either be recycled, evaporated or incorporated into the organic material streams leaving the Final Project. Wash water resulting from rinsing of delivery truck beds will drain into the hydrolyzer where it will be circulated through the digester system along with the influent feedstock. The approach to management of these wastes is consistent with the As-Approved Project.

Solid Waste

The Project will generate minor amounts of scrap and waste material during installation, and this waste will be disposed of or recycled at an approved disposal facility in accordance with Vermont Solid Waste Management Rules and Procedures (DEC 2012). General construction waste generated during construction, such as office trash from the contractor's operations trailer, or from portable toilets, would be the responsibility of the contractor to dispose of properly. The As-Approved and Final Project designs are materially the same with respect to these types of waste streams.

Tree cutting will be necessary along the western portion of the Final Project site where the AD tanks will be located (refer to the Natural Resource Memorandum and Map in Exh. SAD1-6 of this Motion to Amend CPG. Stumping, grubbing, and soil removal from this area will be required as the AD tanks will be partially buried. Soil will be kept on-site and reused to the extent practicable. Woody debris generated from tree cutting will be sold for lumber if merchantable, offered as firewood to the landowner, or adjacent landowners, or it will be chipped/hailed to an approved disposal site.

In accordance with the Vermont Solid Waste Management Rules, the Project (both As-Approved and Final Design) require a Solid Waste Certification for operation of an Anaerobic Waste Digester that proposes to accept food waste. Salisbury AD 1 has consulted with the VT DEC Solid Waste Management and Prevention Division and has been coordinating with the Town of Salisbury for inclusion into the Town's Solid Waste Implementation Plan. Digestate will be treated with a DAF nutrient recovery or similar system that will produce a solid nutrient "cake". Liquid, and solids as appropriate and in accordance with the farm's NMP, will be returned to the farmer for use as fertilizer. Salisbury AD 1 will find a market for exportation/sale of excess nutrient cake if it cannot all be utilized by the farm.



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Stormwater

The Proposed Modifications to the As-Approved Project generally consist of a revised digester and equipment layout to be located to the south of the existing silage bunker. The characteristics of operational phase stormwater runoff from the Project are not significantly changed by the Proposed Modifications. Operational phase stormwater treatment practices are expected to include constructed gravel wetlands and disconnection of runoff across vegetated filter strips. The Final Project results in more than one acre of proposed impervious surface and therefore treatment of runoff will be required in accordance with the Vermont Department of Environmental Conservation 2017 Vermont Stormwater Management Manual Rule and Guidance. Coverage will be sought under VT DEC General Permit 3-9015 for operational phase stormwater discharge from the Final Project. It should be noted that stormwater treatment standards of the 2017 Rules are more stringent than the pre-2017 treatment standards associated with the As-Approved Project.

Injection of Waste Materials into Groundwater or Wells

The Final Project will include one backup diesel generator that will have an approximately 900-gallon fuel tank and a Combined Heat and Power ("CHP") unit that holds approximately 150 gallons of motor oil in the unit, and 150 gallons of used motor oil that will temporarily be stored on a drum spill pallet until it is retrieved by a waste recycler. The Final Project is not subject to Spill Prevention Control and Countermeasure ("SPCC") planning regulations under 40 CFR 112 ("SPCC Regulations"), because the total volume of oil storage at the Project will not exceed 1,320 gallons. Although not subject to SPCC Regulations, the fuel tank will have rupture containment and alarms, and the spill pallet will be sized to capture the entire storage volume of the used oil from the CHP.

Though the generator and CHP will have secondary containment to prevent the release of oil to the environment, a VHB hydrogeologist evaluated the locations of these features with respect to sensitive receptors near the Project. According to the Agency of Natural Resources ("ANR") Natural Resources Atlas, there are no groundwater source protection areas or surface water source protection areas within the vicinity of the Project. The closest water supply well (a shallow dug well on the Goodrich Farm identified by VHB) is mapped approximately 600 feet to the northeast, but is hydrologically upgradient and disconnected from the generator and CHP location from an existing pond. The pond and its wetland fringe are also located upgradient of the generator and CHP location. The closest mapped stream is located approximately 350 feet west and hydrologically down-gradient from the generator and CHP. The secondary containment around the fuel tank would prevent the release of oil to waters of the U.S. or other sensitive receptors. Accordingly, VHB believes that the proposed generator and CHP do not pose a potential for adverse impacts to sensitive receptors (refer to the Natural Resource Map in Exh. SAD1-6 of this Motion to Amend CPG).

As indicated above, the Final Project will meet the applicable health and DEC regulations regarding the disposal of waste that have been considered and does not involve the injection of waste materials into groundwater or wells, therefore the Final Project will comply with this criterion.

Water Supply and Water Conservation (10 V.S.A § 6086(a)(1)(C), (2), and (3))

Act 250 Criterion 1(C) requires that the Project design considered water conservation, incorporates multiple use or recycling where technically and economically practical, and provides continued efficient operation of these systems. Criterion 2 and 3 provides that a Project demonstrates it has sufficient water available and will not cause an unreasonable burden on an existing water supply if one is to be used.



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The Final Project anticipates the use of up to 400 gallons per day ("gpd") as process water for the gas upgrader. Approximately 100 gpd will also be used for truck washing and in the laboratory. Water will be provided via installation of a new bedrock well as described in the As-Approved Project. The bedrock well and water distribution system will comply with all applicable parts of the Vermont DEC Drinking Water and Groundwater Protection Division, Wastewater System and Potable Water Supply Rules ("WW Rule") (DEC, 2007). As stated in the Sanitary Waste description above, the Project water supply and wastewater disposal will be permitted through an amendment to WW-9-1927, previously obtained for the As-Approved Project.

Based on a review of other bedrock wells in the immediate vicinity, as well as ANR mapping of bedrock geology, there is reasonable confidence that a bedrock well at this location will have sufficient yield to meet the Final Project demand, with storage provided as required based upon realized well yields.

Soil Erosion (Section 248(b)(5) / 10 V.S.A. § 6086(a)(4))

Act 250 Criterion 4, given due consideration as part of Section 248, requires a finding that the Project "will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result." (10 V.S.A. § 6086(a)(4)). The Proposed Modification to the As-Approved Project generally consist of a revised digester and equipment layout to be located to the south of the existing silage bunker. Soils in this area are of the similar characteristics with respect to erosivity, and the size and duration of expected earth disturbing activity is not significantly changed by the Proposed Modifications.

Consistent with the As-Approved Project, the Final Project is estimated to have more than one-acre of proposed earth disturbance and will seek coverage under Vermont DEC Construction General Permit 3-9020. VHB has completed the risk assessment of Appendix A of GP 3-9020, and has determined the Project would be eligible for coverage as a moderate-risk site. The Final Project will be required to comply with an approved site-specific EPSC plan to manage stormwater runoff from areas of exposed soil during construction. Examples of EPSC measures to be implemented include: limits of disturbance demarcation (e.g., construction fence and barrier tape) along the perimeter of the Project Site, silt fence or other similar perimeter controls between the Project Site and receiving waters, stabilized construction entrances/exits, construction phasing to limit concurrent earth disturbance, and on-going stabilization of exposed soil using seed and mulch, seed and rolled erosion control product ("RECP"), and/or a gravel surface. The Final Project intends to prepare an EPSC plan and submit a notice of intent to DEC for General Permit 3-9020 coverage after the PUC filing. As such, the Final Project will not result in unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition results.

CONCLUSIONS

The Final Project will comply with Vermont Department of Environmental Conservation regulations regarding the disposal of wastes, water supply and soil erosion. When compared with the As-Approved Project, the Proposed Modifications do not result in undue or adverse impacts under Section 248(b)(5)/ 10 V.S.A. § 6086(a)(1)(B) for Waste Disposal, (a)(1)(C) for Water Conservation, (a)(2) and (3) for Water Supply, and (a)(4) for Soil Erosion.