

**EXHIBIT V**

**WASTE MINIMIZATION**

OAR 345-021-0010(1)(v)

**TABLE OF CONTENTS**

	<b>Page</b>
V.1 INTRODUCTION .....	V-1
V.2 TYPES OF WASTE .....	V-1
V.3 PLANS FOR MANAGEMENT AND DISPOSAL .....	V-2
V.4 PLANS FOR CONSUMPTIVE WATER.....	V-3
V.5 PLANS FOR SOLID WASTE AND WASTEWATER.....	V-3
V.6 ADVERSE IMPACT FROM SOLID WASTE, WASTEWATER AND STORMWATER..	V-4
V.7 EVIDENCE THAT ADVERSE IMPACTS WOULD BE MINIMAL .....	V-4
V.8 PROPOSED MONITORING PROGRAM.....	V-5



## V.1 INTRODUCTION

**OAR 345-021-0010(1)(v)** *Information about the Applicant's plans to minimize the generation of solid waste and wastewater and to recycle or reuse solid waste and wastewater, providing evidence to support a finding by the Council as required by OAR 345-022-0120. The Applicant shall include:*

Response: The Applicant, as shown in the responses below, meets the Council standards with its solid waste and wastewater plans designed to minimize the generation of solid waste and wastewater and lead to recycling and reuse of such wastes. The Applicant's plans to manage generated waste will result in a minimal impact on the surrounding and adjacent areas.

## V.2 TYPES OF WASTE

**OAR 345-021-0010(1)(v)(A)** *A description of the major types of solid waste and wastewater that construction, operation and retirement of the facility are likely to generate, including an estimate of the amount of solid waste and wastewater.*

Response:

### **Construction-Related Waste Materials**

Several types of non-hazardous solid waste will be generated during construction, primarily concrete and wood waste from turbine pad construction, and scrap steel from turbine construction. Miscellaneous materials such as packing materials for turbine parts and electrical equipment, and erosion control materials (straw bales, silt fencing) could also be generated during construction. The local garbage hauler will transport construction-related waste to a regional landfill (see Exhibit U).

Wastewater from vehicle wash down will occur at a local batch plant. Wastewater from portable toilets will be pumped regularly by the toilet contractor. No other wastewater will be generated during construction.

### **Operation-Related Waste Materials**

Little solid waste will be generated during the Project's operation. The primary solid waste from operation of the Project will be paper and other office waste such as food packaging and food scraps at the O & M building. Maintenance at the facility may generate waste such as oily rags and empty containers previously containing lubricants and cleaning supplies (see Exhibit G). Periodic replacement of turbine parts could also generate some solid waste. The local garbage hauler will pick up solid waste and transport it to a regional landfill.

Operation of the Project will not generate any industrial wastewater. The O&M building will generate wastewater from sinks and flushing toilets, which will be disposed of in an on-site septic system. The on-site wells will provide less than 5,000 gallons per day each,

therefore, the amount of wastewater generated from operation of the facility will be less than 5,000 gallon per day.

The Project will also generate used oils, which will be recycled. Universal wastes, such as light bulbs and batteries will also be generated, and recycled or disposed of in accordance with applicable regulations.

### **Decommissioning-Related Waste Materials**

When the facility is retired or decommissioned, turbines and other above ground equipment will be removed and reused or sold for scrap metal. This is estimated to be approximately 69,100 tons of steel. Inert underground electrical cables and concrete turbine pads will be left in place with landowner permission. Concrete turbine and transformer pads will be removed up to three feet below the surface of the ground so that agricultural activities can continue. Existing access roads on private property will remain with landowner approval unless the landowner wishes them to be removed. Any improvement to public roads will remain in place with Sherman County approval.

## **V.3 PLANS FOR MANAGEMENT AND DISPOSAL**

**OAR 345-021-0010(1)(v)(B)** *A description of any structures, systems and equipment for management and disposal of solid waste, wastewater and stormwater.*

Response: Waste minimization and recycling will be implemented during the Project's construction and operation, as described below.

### **Recycling During Construction**

Generation of wastes from construction will be minimized through estimating of materials needs and through efficient construction practices. Waste generated during construction or operation of the Project will be recycled when feasible. Solid waste such as steel, wood, paper and other materials will be sorted and stored in dumpsters, which will be transported by a local garbage hauler to the regional landfill that provides recycling services (see Exhibit U). Any concrete waste will be used onsite as fill or transported to the regional landfill. Packaging wastes will be separated and recycled. Non-recyclable materials will be collected and transported to the regional landfill.

Wastewater from vehicle wash down will occur at a local batch plant on pervious surface, and is expected to infiltrate into the ground. Wastewater from portable toilets will be pumped regularly by the toilet contractor.

No construction-related storm water measures are proposed other than erosion-control measures such as using straw bales and silt fencing, as needed (see Exhibit I).

### **Recycling During Operations**

Minimal solid waste will be generated during operation and will be primarily paper and other typical office waste. Operations solid waste will be collected in garbage cans and

transported by a local garbage hauler to the regional landfill. A solid waste recycling program will be implemented at the O&M facility.

Little wastewater will be generated during operations. The O&M building will generate wastewater from sinks and flushing toilets, which will be disposed of in an on-site septic system. The on-site well will provide less than 5,000 gallons per day, therefore, the amount of wastewater generated from operation of the facility will be less than 5,000 gallons per day. Operation of the Project will not generate any industrial wastewater.

No operation-related storm water measures are proposed because the area will have minimal impervious surface; all storm water will infiltrate into the soils.

### **Recycling During Retirement**

In the event of decommissioning, waste will be removed and reused as described in *Recycling During Construction*, above.

## **V.4 PLANS FOR CONSUMPTIVE WATER**

**OAR 345-021-0010(1)(v)(C)** *A discussion of any actions or restrictions proposed by the Applicant to reduce consumptive water use during construction and operation of the facility.*

Response: Water, as described in Exhibit G, will be used for dust suppression, road compacting and concrete mixing. This water will be transported to the Project via water truck and will be used only as needed for construction of the facility. Water used during construction will likely come from an offsite permitted source capable of meeting the water demand for construction of the Project.

The O&M facilities will have a dedicated well for domestic water uses (see Exhibit O) that will produce less than 5,000 gallons per day each. Periodically, turbine rotors and other equipment may be washed. No other water use is anticipated.

## **V.5 PLANS FOR SOLID WASTE AND WASTEWATER**

**OAR 345-021-0010(1)(v)(D)** *The Applicant's plans to minimize, recycle or reuse the solid waste and wastewater described in (A).*

Response: As described in response to OAR 345-021-0010(1)(v)(B), the Applicant plans to minimize construction waste through detailed estimating of materials needs and through efficient construction practices to sort construction and operational-related waste to recycle as much as is practical.

Little solid waste or wastewater are expected to be generated during the construction or operation of the Project. Operations-related waste will be sorted and recycled to the extent feasible.

## V.6 ADVERSE IMPACT FROM SOLID WASTE, WASTEWATER AND STORMWATER

**OAR 345-021-0010(1)(v)(E)** *A description of any adverse impact on surrounding and adjacent areas from the accumulation, storage, disposal and transportation of solid waste, wastewater and stormwater during construction and operation of the facility.*

Response: No large accumulation of solid waste, wastewater, or storm water will occur that would constitute an adverse impact. Solid waste from construction and operation of the Project will be separated and loaded into dumpsters and transported as needed to the regional landfill by a local garbage hauler. The landfill has adequate capacity to accommodate the small amount of construction debris (Exhibit U). Where practical construction and operation-related waste will be recycled.

Little wastewater will be generated. Truck wash down will occur in designated areas on pervious surface to allow the water to infiltrate the ground. Wastewater generated during operation of the O&M building will be collected in an on-site septic system approved by the County. No adverse impacts are anticipated.

No storm water facilities are proposed. The Project would add little impervious surface, generally from the turbine and transformer pads and roadways. Any stormwater would drain to the surrounding land and infiltrate the ground.

## V.7 EVIDENCE THAT ADVERSE IMPACTS WOULD BE MINIMAL

**OAR 345-021-0010(1)(v)(F)** *Evidence that adverse impacts described in (D) are likely to be minimal, taking into account any measures the Applicant proposes to avoid, reduce, or otherwise mitigate the impacts.*

Response: The Applicant's proposed measures to avoid, reduce, and recycle materials will result in minimal impacts on the site or to adjacent land; these measures are discussed above and in Exhibit G. They include storing all oily waste, such as rags or dirt, in sealable drums and removing it for recycling or disposal by a licensed contractor. In addition, spill kits containing items such as absorbent pads will be located on equipment and in the on-site temporary storage facilities to respond to accidental spills that may occur. Further, during construction, equipment (*e.g.*, graders, dozers) will be available to respond to spills and to quickly construct berms or ditches for containment and cleanup if necessary.

Disposal of materials as fill on-site will be conducted in accordance with OAR 340-093-0080 and other applicable regulations. OAR 340-093-0080 provides a permit exemption to the disposal permit requirement for disposal of inert wastes such as soil, rock, and concrete that does not contain contaminants that could adversely affect waters of the state or the United States. To meet the clean fill definition, any inert construction debris to be disposed of on-site will be separated from other debris that is not inert.

The only clean fill that has the potential to be disposed of on-site is waste concrete generated during construction. The construction contractor may, with agreement of the landowner, bury waste concrete (excess cement mix from a construction site; batches of

concrete that do not meet specifications) on-site. In such cases, the material will be placed in an excavated hole, covered with at least three feet of topsoil, and regraded to match existing contours.

Any packing materials, paper, and office materials will be separated, accumulated in dumpsters, and periodically removed for recycling or disposal by a licensed waste hauler. Portable toilets will be provided for on-site sewage handling during construction and will be pumped and cleaned regularly by the construction contractor.

#### **V.8 PROPOSED MONITORING PROGRAM**

**OAR 345-021-0010(1)(v)(G)** *The Applicant's proposed monitoring program, if any, for minimization of solid waste and wastewater impacts.*

Response: Because no significant impact is anticipated, no monitoring program is proposed. Waste-management activities will be subject to periodic inspections by the Applicant to ensure compliance with applicable regulations.