LANDFILL GAS COLLECTION AND CONTROL SYSTEM DEWATERING MAINTENANCE PLAN

J.E.D. Solid Waste Management Facility
Osceola County, Florida

Submitted to: Florida Department of Environmental Protection
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1.0 MAINTENANCE PLAN

1.1 Introduction

Golder Associates Inc. (Golder) has prepared this Landfill Gas Collection and Control System (GCCS) Dewatering Maintenance Plan (GCCS Dewatering Plan) to describe the process and operations associated with the GCCS at the J.E.D. Solid Waste Management Facility (JED. Facility). Information included in this GCCS Dewatering Plan will be incorporated as Appendix H to the approved Operation Plan prepared by Geosyntec Consultants dated June 30, 2015.

1.2 GCCS Dewatering System General Information

The proposed GCCS dewatering system will be located within the waste mass as shown on the design and permitting drawings. For existing wells, piping will be run to wells as needed based upon watered-in conditions at each well. For future phases of the GCCS, the dewatering system will be installed at the same time and in the same trenches as the landfill gas lateral and header piping. The GCCS Dewatering System will be owned and operated by Omni Waste of Osceola County, LLC (Omni).

The goal of the dewatering system is to remove perched liquids in the vicinity of gas extraction wells to optimize landfill gas extraction and associated flow rates. Generally, automatic pneumatic pumps supplied with compressed air will be utilized to pump liquid within well screens to increase the GCCS's ability to extract landfill gas. Pumped liquids will be conveyed to the leachate storage ponds via an independent forcemain located along the perimeter berm of the landfill. A second set of forcemain and air supply piping is installed as a backup in case the original (in service) pipes become damaged or unserviceable.

1.2.1 System Components

The dewatering system will consist of the following items as shown on the design and permitting drawings:

- Pneumatic Pumps (Pumpone Environmental XP4-BL, or similar)
- Wellhead cap and accessories (air isolation valve, pressure regulator, liquid check valve, liquid isolation valve, air hose, liquid discharge hose, and associated fittings)
- Air compressor (existing – Champion R-Series, Model HRA20-12), augmented as needed.
- Oil Coalescing Filters
- Air supply piping, 2-inch SDR9 HDPE pipe
- Forcemain piping, 2-inch and 4-inch SDR 11 HDPE pipe
- Air release valves (for forcemain piping)
- Isolation valves (for air supply and forcemain piping)

- Air blow-off valves (for air supply piping)
- Associated appurtenances

1.3 System Operation

Pumps will be installed in gas extraction wells as determined by liquid level measurements, total well depth, and landfill gas flow rates. Pumps may be moved from one gas extraction well to another to minimize cost and allow for phased dewatering.

Typically, at a minimum a pump will be installed at approximately 50% of the determined water column depth to limit siltation of the well. Pump depth may be adjusted based upon operational conditions and demands of the GCCS such as liquid depths and other well operating factors including LFG production and temperatures. Pump elevations may be adjusted as dewatering operations progress. Operation of each pump is automatic and will cycle as the head above the pump increases to the pump's setpoint. Pumps can be shut off by isolating the air supply from the pump, reducing the supplied pressure, or by closing the liquid discharge valve.

Pumped liquids will flow through the forcemain piping within the landfill and along the east side perimeter berm which will discharge into the leachate storage ponds. Once the liquid reaches the leachate storage ponds, it will be managed as leachate in accordance with the facility's existing permits.

Air release valves will be located along the forcemain to prevent buildup of air, which may decrease the flow capacity of the forcemain. Cleanout pipes will also be located along the forcemain pipe approximately every 1,000 feet to allow for period cleaning and inspection.

1.3.1 System Inspection/Maintenance

Routine checks of the integrity of the dewatering system will be conducted with routine landfill gas well adjustments and monitoring. Should leaks develop within the system, replacement parts will be ordered and replaced as needed.

Pumps will have to be pulled for maintenance and cleaning on a regular basis. Procedures from the pump manufacturer will be followed. In addition to routine pump maintenance, cleaning of air release valves may be required, as well as periodic blowing off of water from the air supply piping.

1.4 Closure

Closure of the dewatering system will be dependent on the need to remove liquids from the GCCS and the owner's desire to optimize landfill gas flow rates. The dewatering system may be shutdown at any point. Typical operation will be associated with the landfill gas to energy facility, located adjacent to the landfill gas management area and leachate storage ponds. Closure of the dewatering system can be

performed by isolating (closing) air valves to each pump. No formal closure construction/removal of the dewatering system is required once the dewatering system ceases operation.