

**WASTE MANAGEMENT OF NEW YORK  
CHAFFEE FACILITY**

**WESTERN LANDFILL EXPANSION**

**6 NYCRR PART 360 SOLID WASTE MANAGEMENT PERMIT  
MODIFICATION APPLICATION**

**PART VIII  
OPERATION AND MAINTENANCE MANUAL**

Prepared for:



**Waste Management of New York**  
10860 Olean Road  
Chaffee, New York 14030

Prepared by:

**McMahon & Mann Consulting Engineers, P.C.**  
2495 Main Street  
Buffalo, New York 14214

---

**Thomas R. Heins, P.E.**  
**NYSPE License No. 065443**

**FEBRUARY 2005**

## TABLE OF CONTENTS

	<b>Page</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>2. LANDFILL DISPOSAL METHODS .....</b>	<b>1</b>
2.1    LANDFILL LINER AND CONTAINMENT .....	2
2.2    LEACHATE COLLECTION AND REMOVAL .....	3
<b>3. PERSONNEL REQUIREMENTS .....</b>	<b>4</b>
3.1    MANAGEMENT ORGANIZATION .....	4
3.2    PERSONNEL RESPONSIBILITIES.....	4
3.3    EMPLOYEE SAFETY AND TRAINING PROGRAM .....	5
<b>4. LANDFILL FACILITIES AND EQUIPMENT.....</b>	<b>7</b>
4.1    LANDFILL FACILITIES .....	7
4.2    LANDFILL EQUIPMENT .....	8
4.3    GAS MONITORING EQUIPMENT .....	9
4.4    INTERNAL COMMUNICATION SYSTEM.....	9
<b>5. LANDFILL OPERATIONAL CONTROLS.....</b>	<b>9</b>
5.1    HOURS OF OPERATION .....	9
5.2    ACCESS AND TRAFFIC FLOW CONTROLS .....	10
5.3    LANDFILL RULES AND REGULATIONS .....	10
<b>6. FILL PROGRESSION .....</b>	<b>10</b>
6.1    PROPOSED STORMWATER CONTROLS .....	12
6.2    WASTE FILL MONITORING.....	13
<b>7. WASTE AMOUNTS AND CHARACTERIZATION.....</b>	<b>14</b>
7.1    WASTE AMOUNTS.....	14
7.2    WASTE CHARACTERIZATION.....	14
7.3    PLACEMENT AND COMPACTION OF SOLID WASTE .....	15
<b>8. SOLID WASTE RECEIVING PROCESS.....</b>	<b>16</b>
8.1    WASTE PLACEMENT CONTROL .....	16
8.2    RECEIPT AND MONITORING OF INCOMING SOLID WASTE .....	17
8.3    SPECIAL WASTES .....	20
8.3.1    Overview.....	20

8.3.2	Customers Served and Types of Waste Streams.....	21
8.3.3	State and Local Regulatory Requirements.....	21
8.3.4	Asbestos Landfill Procedures .....	22
8.3.5	Asbestos Spill Reporting Requirements .....	25
<b>9.</b>	<b>COVER MATERIAL MANAGEMENT PLAN .....</b>	<b>26</b>
9.1	METHOD OF COVER PLACEMENT .....	27
9.1.1	Daily Cover.....	27
9.1.2	Crushed C&D as Daily Cover .....	28
9.1.3	Intermediate Cover .....	29
9.1.4	Final Cover .....	29
9.2	COVER MAINTENANCE.....	35
9.2.1	Seeding and Mulching .....	35
9.2.2	Mowing.....	35
9.2.3	Cover Assessment.....	36
9.3	QUANTITY OF COVER MATERIAL .....	36
<b>10.</b>	<b>ENVIRONMENTAL MONITORING PLAN.....</b>	<b>37</b>
10.1	GROUNDWATER COLLECTION SYSTEM .....	37
<b>11.</b>	<b>LEACHATE MANAGEMENT PLAN.....</b>	<b>39</b>
11.1	INTRODUCTION .....	39
11.1.1	Existing Landfill Leachate Collection System .....	39
11.1.2	Proposed Landfill Leachate Collection System.....	40
11.2	PRESENT LEACHATE COLLECTION, TRANSMISSION AND STORAGE SYSTEM .....	41
11.2.1	Introduction.....	41
11.2.2	Leachate System 1 and 2.....	42
11.2.3	Leachate System 3/4 .....	50
11.2.4	Leachate System 5 .....	54
11.2.5	Gas Condensate Knockout Tank.....	58
11.2.6	Routine Maintenance .....	60
11.3	PROPOSED LEACHATE COLLECTION, TRANSMISSION AND STORAGE SYSTEM.....	61
11.3.1	Introduction.....	61
11.3.2	Leachate Collection System.....	62
11.3.3	Leachate Transmission System.....	64

---

11.3.4	Leachate Storage Tank System.....	65
11.3.5	Modifications to LST 3/4 and LCS 5.....	71
11.3.6	Routine Maintenance .....	75
<b>12.</b>	<b>GAS MONITORING PROGRAM.....</b>	<b>76</b>
<b>13.</b>	<b>ODOR ABATEMENT/MANAGEMENT PROGRAM .....</b>	<b>78</b>
<b>14.</b>	<b>WINTER AND INCLEMENT WEATHER OPERATION.....</b>	<b>81</b>
14.1	FREEZING CONDITIONS .....	81
14.2	SNOWFALL.....	81
14.3	HEAVY RAINS .....	82
14.4	ELECTRICAL STORMS.....	82
14.5	WINDY CONDITIONS .....	82
<b>15.</b>	<b>CONVENIENCE STATION OPERATION .....</b>	<b>83</b>
<b>16.</b>	<b>ROLL-OFF STORAGE AREA.....</b>	<b>83</b>
<b>17.</b>	<b>FIRE PREVENTION PLAN .....</b>	<b>84</b>
<b>18.</b>	<b>FACILITY INSPECTIONS.....</b>	<b>85</b>
<b>19.</b>	<b>RECORD KEEPING AND REPORTING.....</b>	<b>86</b>
19.1	RECORD KEEPING .....	86
19.2	REPORTING .....	86
19.2.1	Quarterly Reports.....	87
19.2.2	Annual Report.....	88
19.2.3	Annual Gas Recovery Facility Report.....	89

## LIST OF FIGURES

Figure No.	Title
1.	Organizational Chart
2.	General Site Plan
3.	Existing Landfill Fill Progression Plan
4.	Proposed General Fill Progression Plans
5.	Proposed General Fill Progression Sections
6.	Proposed Operational Detail
7.	Stormwater Diversion Berm
8.	Stormwater Diversion Flap
9.	Cells 5 & 6 Construction
10.	Cell 4 Construction
11.	Cell 3 Construction
12.	Cell 2 Construction
13.	Cell 1 Construction
14.	Proposed Capping Sequence
15.	Former Leachate Collection System
16.	Present Leachate Collection System
17.	Proposed Leachate Collection System

## APPENDICES

### Appendix

A	Leachate Sumps/Storage Tanks
1.	Sump1/Tank1
2.	Sump2/Tank 2
3.	Tank 3/4
4.	Tank 5
5.	Gas Condensate Knockout Tank
6.	R-972-01 Recommended Practice, Addition of Supplemental Anodes to STI-P3 UST's

- B Forms
  - 1. Special Waste Profile
  - 2. Waste Hauler Inspection Form
  - 3. Facility Inspection Forms
    - a. Facility Inspection
    - b. Gas Monitoring
    - c. Daily Leachate Readings
    - d. Weekly Leachate Inspection Schedule
    - e. Monthly Leachate Inspection Schedule
    - f. Semi Annual Leachate Inspection Schedule
    - g. Annual Leachate Inspection Schedule
    - h. Leachate System Alarm Log
    - i. Leachate Readings
    - j. Existing Landfill Routine Leachate System Maintenance
    - k. Proposed Landfill Routine Leachate System Maintenance
    - l. Daily Stormwater Pumping / Inspection Log
  
- C Equipment List
- D Leachate Disposal Permits
- E Tanker Hauling Agreements
- F Reports
- G Safety Training Schedule
- H Breeding Bird Study
- I Existing Backup Generator
- J Gem 2000 Gas Analyzer
- K Phonetics, Inc. Autodialer, Model 1104

## **1. INTRODUCTION**

Chaffee Landfill is located in the Town of Sardinia, Erie County, New York. Landfilling operations began at the site in 1958. The currently permitted landfill has an area of 50.93 acres and operates under a New York State Department of Environmental Conservation (NYSDEC) 6 NYCRR Part 360 Solid Waste Management Facility Operation Permit No. 9-1462-00001/00006 issued on March 8, 2002.

This Operations and Maintenance Manual addresses the requirements of 6 NYCRR Part 360-2.9. This is part of a submittal to the New York State Department of Environmental Conservation (NYSDEC) for modification of the current Solid Waste Management Facility Operations Permit to include an additional 74 acres of land area. The proposed Western Landfill Expansion is described in the Engineering Report (Part IV, Part 360 application) and is shown graphically on the Engineering Drawings.

## **2. LANDFILL DISPOSAL METHODS**

The Chaffee Landfill will be operated in accordance with the requirements of 6 NYCRR Part 360 relating to landfill operation, as described in this manual. Only permitted wastes will be disposed at the facility. The Chaffee Landfill is permitted for the disposal of residential and commercial refuse, sludges, and other special wastes as defined in this manual. The Chaffee Landfill accepts these types of wastes and has a waste-screening program in place to prevent the disposal of wastes that are not permitted for disposal in the landfill (see Section 8).

The working face of the disposal area is the center of landfill operations. Traffic routing within the disposal area, the location of litter fences, and the operation of landfill equipment are coordinated to allow proper filling operations at the working face. Solid waste is managed at the landfill in a manner intended to limit the potential for adverse impacts on human health and the environment.

To prevent litter, waste received at the site will be contained in covered vehicles, and fencing will be placed around the landfill working face to contain blown material. The size of the working face is limited to an area that can be effectively maintained, operated, and controlled. Vectors are controlled by limiting the size of the working face and by using effective daily and intermediate cover material. Odors will be controlled by limiting the size of the working face, using effective

daily cover and through the installation of interim gas collection devices (see section 13). Dust will be controlled by maintaining clean access roads and by applying water when conditions require.

The Chaffee Facility is surrounded by a buffer of woodland on three sides that helps control noise and provides a visual screen in several directions from landfill related activities. Since landfill construction activities are usually concentrated in areas removed from most local residences, the noise generated from construction at the landfill is not expected to cause off-site impacts as was discussed in Appendix N of the Chaffee Facility Western Landfill Expansion Draft Environmental Impact Statement. The landfill equipment has mufflers to further reduce potential nuisance from noise. As the existing landfill is capped, and the proposed expansion constructed vegetation will be established along the berms to provide screening as shown on the Landscaping Plan included in the Engineering Drawings.

The Chaffee Facility currently monitors the groundwater and surface water surrounding the existing landfill on a quarterly basis and as part of the expansion additional wells will be installed to allow further groundwater monitoring (see Section 10). Operations include the ability to collect stormwater that contacts waste and treat it as leachate. This also includes the construction and maintenance of the leachate collection systems and the ability to divert stormwater runoff that potentially may be impacted by leachate to a lined detention pond for proper disposal.

The landfill accepts approved Beneficial Use Determination (BUD) materials for use in internal landfill roadway construction and as alternative materials for daily cover. The Chaffee Facility continually reviews the availability of alternate daily cover materials (e.g., C & D debris, petroleum impacted soils, synthetic materials, etc.) for potential use at the site (see Section 9).

## **2.1 Landfill Liner and Containment**

The existing landfill has a footprint area of 50.93 acres. It is separated into the original fill area and a lined area as described below.

The original fill area is on top of the 30 to 50 foot thick natural clay till layer that exists beneath the footprint of the landfill. The liner beneath the cells constructed outside of the original fill area consists of a minimum of 24 inches of compacted barrier soil with an in-place hydraulic conductivity of less than  $1.0 \times 10^{-7}$  cm/sec. This layer was placed directly on the in-situ clay till subsoil. The liner was constructed at a minimum 3 percent slope towards leachate collection

lines that surround the 50.93 acre landfill area. The base liner system connects to a vertical containment berm that surrounds the landfill.

The proposed Western Landfill Expansion has a waste area of approximately 56 acres, of which 3.4 acres will be constructed on the west berm of the existing landfill. The landfill will be constructed with a double composite liner system as described in the Engineering Report (Part IV, Part 360 application) and is shown graphically on the Engineering Drawings.

The proposed landfill is subdivided into six cells, each of which will contain a primary leachate collection system, primary liner, secondary leachate collection system and secondary liner. Each of the cells are designed with a minimum 2.5% floor slope, to allow liquid to flow into the collection pipes and sumps to allow for removal by pumps.

## **2.2 Leachate Collection and Removal**

The development of the existing landfill's leachate collection system is described in Section 11. The present leachate collection system is constructed with a series of interior leachate collection pipes leading to either side riser sumps which discharge to tanks (i.e., tanks #1 and #2), gravity transmission lines discharging to tanks (i.e. tank #3/#4) or interior sumps which are pumped manually (i.e., sump #5, formerly known as leachate well #5).

The proposed expansion will consist of a primary and secondary leachate collection system that discharges to a transmission line that will flow by gravity to the proposed storage tanks and loadout facility. During the proposed expansion, the existing landfill's leachate collection system will be modified, to allow Tank #3/#4 and Sump #5 to discharge to the proposed leachate storage tanks.

Both the existing and proposed leachate collection systems are designed to collect and remove leachate generated by infiltration of storm and melt water through the daily, intermediate and final cover systems into the fill area. The leachate is pumped into tank trucks and transported to the Buffalo Sewer Authority. The Chaffee Landfill has made arrangements with the City of Niagara Falls Wastewater Treatment Facility as a back up to the Buffalo Sewer Authority in the event the Buffalo Sewer Authority is not able to accept the leachate loads.

### **3. PERSONNEL REQUIREMENTS**

#### **3.1 Management Organization**

WMNY is responsible for the management of the landfill and related facilities. The organizational structure is presented in Figure 1. The District Manager is responsible for making all primary decisions related to the administration and operation of the site. The management of site related activities is the responsibility of the Operations Manager who reports directly to the District Manager.

A total of fifteen to twenty employees carry out solid waste permitting, billing, tracking, inspection, disposal, and construction operations under the direction of the various supervisors. This number varies based on the amount of ongoing landfill construction. All of these employees are located at the landfill, including the District Manager, Operations Manager, Scale Operator, Mechanic, Laborers, and Equipment Operators.

#### **3.2 Personnel Responsibilities**

The following presents an overview of personnel responsibilities and duties including lines of authority. The staff members can vary in number and level of responsibility. However, in general staff members and their responsibilities are as follows:

- District Manager, who will (i) supervise and manage overall operation and maintenance of the landfill and associated facilities, (ii) make and manage contracts with waste hauling companies, (iii) oversee construction at the site, and (iv) ensure that the landfill is operating in compliance with the terms and conditions of the permit;
- Operations Manager who will (i) supervise and manage the day to day operation and maintenance of the landfill and associated facilities, (ii) ensure that facility performance monitoring is completed as required, (iii) conduct the required daily, monthly, quarterly and annual inspections, and (iv) ensure that the landfill is operating in compliance with the terms and conditions of the permit;
- A Site Engineer, who will (i) ensure that the landfill is developed according to the engineering plans; (ii) record any variations from the engineering plans; and (iii) monitor environmental compliance of the facility;

- Equipment Operators, who will operate the landfill equipment for the purposes of waste placement and site maintenance, and ensuring that safety procedures, and landfill policies are adhered to as applicable;
- Mechanics, who will perform routine maintenance on the equipment at the facility;
- Scale Operator, who will record the weights and physical condition (i.e., covered, etc.) of all waste hauling vehicles that enter the site; and
- Laborers, who will perform miscellaneous tasks at the site, including litter control, grounds maintenance, etc.

In addition, part-time personnel may be added to the Chaffee Landfill staff as necessary during periods of construction, during routine cleaning of the facility, and during special projects. If conditions warrant, additional engineering, operations and safety personnel, may be obtained from other WMNY facilities in the area. During landfill construction events, several contractors may be present on site. The number of personnel employed by the contractor varies based on the particular requirements of each project.

Each employee is trained to perform any of the duties of the job classification under him/her and is required to perform those tasks when asked by a supervising landfill employee.

### **3.3 Employee Safety And Training Program**

All site personnel are trained to perform their specific duties and to recognize potentially hazardous or dangerous situations at the landfill. Training for operations employees includes but is not limited to the following topics under supervised review:

- Part 360 Operating Permit Conditions
- Facility Performance Monitoring (i.e., environmental monitoring, leachate collection and leachate storage)
- Spill Prevention
- Emergency Management Procedures
- Lock Out Tag Out
- Confined Space Entry Identification

- Waste Identification
- Special Waste Management
- Asbestos Management

Specifically the Operations Manager must attend and successfully complete a course of instruction in solid waste management procedures. This course must meet the requirements as stated in 6 NYCRR Part 360-1.14(u)(2).

The Employee Safety and Training Program for the landfill provides personnel with a structured and organized instruction program for the performance of their assigned duties at the facility, during both routine and emergency conditions. A record of training for each employee is maintained on file at the landfill. Regular facility-wide monthly training programs have been developed and are given on a monthly basis. A sample annual schedule of the regular Monthly Training/Safety Meetings is shown in Appendix G.

#### Introductory Training Program Outline

New employees will be provided with introductory training in the following areas;

- An introduction to the layout of the landfill and a general landfill tour;
- Relationship between their job classification and the landfill;
- An overview of the contents of the Operations and Maintenance Manual and Contingency Plan;
- An overview of the monitoring facilities, various landfill structures, and equipment used on site;
- Instruction on the location, importance, and use of safety and emergency equipment; and
- An overview of the emergency response procedures that are presented in the Contingency Plan.

Employees involved directly with the solid waste receiving and management aspects of the facility will learn the proper handling of each type of solid waste material (municipal solid waste, sludges, asbestos, industrial waste, etc.) along with the practical implementation of

applicable regulatory guidelines. In addition, these employees will be trained in the recognition of acceptable and unacceptable wastes as well as the steps to be taken in the situation when unauthorized waste is received. Emphasis will be continually placed on safe and proper solid waste handling.

### Record Keeping

Documentation of the training provided to each employee will be maintained on file in the office (see Figure 2 for location). This documentation will consist of the actual training/safety meeting held for that month with the date of meeting and the copies of any Training/Safety Meeting records. The Monthly Training/Safety Meeting record includes the date training was given, topic of training or instruction, and the names of employees in attendance. This form also serves as a record that the instruction was given and successfully completed by the employee.

A copy of the Training/Safety Meeting record is also put in each individual employee's personnel file. A copy of any test is also kept in the employee's personnel file.

## **4. LANDFILL FACILITIES AND EQUIPMENT**

### **4.1 Landfill Facilities**

The entrance to the landfill site is located at 10860 Olean Road in the Town of Sardinia. There is a sign at the entrance with information for the public. It displays the permit number, days of operation, and hours of operation. The site has five major structures including a scale house, a maintenance facility, which includes a truck wash area, a recycling facility, a grounds maintenance building, and the main office. Location of these structures are shown on Figure 2.

The scale house is a one story, concrete block and frame building located along the main access road to the scale. One in-coming (gross) and one out-going (tare) scale is located adjacent to the scale house. The scales are connected to a computer system for tracking, billing, reporting, etc. In case of emergency, either scale can be used for both gross and tare weights.

The maintenance facility is a two-and-a-half story steel frame building located south of the scale house. Maintenance of landfill equipment is performed in this structure. The truck wash portion of this building is used by trucks to wash off accumulated soil/solid waste when necessary.

The grounds maintenance facility is a one-story concrete block and steel structure. This building houses the Operations Manager's office and is used for storage of tools, supplies and small equipment. This building also houses the landfill equipment operator's break room and a record storage area, which is secured from the rest of the building. This building is also used for the introduction to the landfill segment of the many tours of the site, which are given to various groups (school children, civic groups, government agencies, etc.).

The recycling/transfer building is a three-story concrete and steel building with an office wing. The recycling facility is equipped with compacting and baling equipment and is designed to accommodate the sorting, storage, and shipping of recyclables which are delivered by private and municipal solid waste haulers. It will also be used to store and transfer recyclables to other facilities.

The office building is a one story concrete block and wood frame structure. This building houses the landfill's administrative staff and District manager. The building is equipped with offices and a conference room.

## **4.2 Landfill Equipment**

The type of motorized equipment utilized at the landfill is listed in Appendix C. The equipment is used to complete the site activities related daily waste placement operations, soil borrow activities and site maintenance.

Routine maintenance and major repair of all equipment and machinery is handled on site in the maintenance facility.

Landfill equipment that routinely operates at the active face is equipped with fire extinguishers that may be used in the event of a fire. Extinguishers are maintained in conformance with State and local fire codes and regulations.

In the event that a piece of equipment is inoperable or additional equipment is needed, rental equipment is available on two hours notice.

### **4.3 Gas Monitoring Equipment**

A GEM 2000 Combustible Gas Meter or equivalent combustible gas meter is utilized on-site for the detection of landfill gases at the landfill boundaries and in onsite structures. The detection range of the meter is 0-100% LEL and is calibrated on a schedule recommended by the manufacturer.

### **4.4 Internal Communication System**

An internal communication system consisting of telephones and two-way radios is utilized at the site. Motorola GTX or equivalent two-way radios, and telephones are located in the maintenance facilities, main office building, recycling facility, and at the scale house. In addition, two-way radios are located in site vehicles and carried by Managers and Supervisors. The District Manager and Operations Manager also carry cellular telephones. A fax machine is available in the main office building.

## **5. LANDFILL OPERATIONAL CONTROLS**

### **5.1 Hours Of Operation**

The landfill is open to receive solid waste from 7:00 AM to 5:00 PM Monday through Friday and 8:00 AM to 1:00 PM on Saturdays as required. A sign is installed at the entrance to the landfill, which indicates the hours of operation. The landfill is closed on six (6) holidays; New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If any of the above holidays fall on a weekday, the landfill is usually open on the following Saturday (7:00 AM to 5:00 PM) as if it were a weekday.

Hours and days may change in case of specific emergencies. If night operation is contemplated, the landfill will supply adequate lights for the active area or any construction areas.

Even though the landfill operation is limited to certain times, the operating systems, including the leachate collection and storage system and the landfill gas collection and control system, are designed to function twenty four hours per day, seven days per week, and three hundred sixty-five days per year. Personnel are assigned to operate and maintain the systems as required by the regulations.

## **5.2 Access And Traffic Flow Controls**

The landfill has a chain link fence with locking gates in all areas where the public has access. The existing landfill access road, in conjunction with the perimeter access roads, provide a significant amount of space for the queuing of incoming and exiting vehicles at the landfill. Internal access roads are constructed as close as practical to the working face. Access roads are maintained on a regular basis to allow passage by vehicular traffic and to ensure proper drainage.

Traffic speed is controlled by signs posted along the access road.

## **5.3 Landfill Rules And Regulations**

The landfill is operated and maintained in substantial compliance with the rules and regulations set forth by the NYSDEC in 6 NYCRR Part 360, and the rules and regulations set forth and periodically changed by Chaffee Landfill management and this manual.

Access control, operations, maintenance, inspection, monitoring, record keeping and reporting shall be in conformance with the requirements of this manual.

No burning will take place without a permit from the NYSDEC.

If salvaging is performed, the Operations Manager is responsible for ensuring that salvaging is controlled and performed in a designated area and that there is no interference with the landfill operations or creation of hazards or nuisances.

## **6. FILL PROGRESSION**

The fill progression plan for the Existing Chaffee Landfill is presented on Figure 3 based on a plan prepared by Golder Associates Inc. (June 16, 2003). The intent of this plan is to provide a conceptual systematic plan for fill progression activities at the Chaffee Landfill under the current permit. This plan provides a conceptual progression of waste filling and interim cover construction, but the specific limits of each stage may be modified depending upon actual waste volumes and rate of filling of the landfill, management of stormwater run-off and the gas collection system, and other operational conditions.

The proposed landfill will be constructed in five phases as shown on the attached Figures 9 through 13. The filling of a cell during each phase will proceed as shown on Figures 4 through

6. Initially, the cell will be divided into 3.5-acre areas, to limit the amount of stormwater collected in the leachate collection system as described below. First a five-foot lift of select waste will be placed over the leachate collection layer followed by five-feet of waste and then daily cover. The initial ten-feet of waste may not contain sludges, C&D, soils, industrial wastes, or any waste containing significant quantities of fines. At the completion of each day, a complete ten-foot lift must be installed in all areas that were opened during the day. This layer will then be covered with daily cover, excluding the leading edges to prevent fines from migrating into the leachate collection layer. Daily cover will not be placed between the two five foot lifts. Following the first ten-foot layer, subsequent lifts will be placed approximately ten-foot in thickness until reaching final grade. As the cell is filled above the perimeter berm, the lifts along the outside slopes of the waste will be constructed first and covered with interim final cover. This process is shown on Figure 6, and will allow for landfill operations to occur behind a visual screen.

Prior to placing waste and after construction has been completed on each of the phases, the Chaffee Facility will maintain the leachate collection layer in the following manner. Stormwater that does not fall directly on the collection layer or waste placed on it will be directed away from the collection layer to prevent clogging and sedimentation. No traffic will be allowed on the collection layer. Haul roads to provide access for waste haulers or construction vehicles will not be allowed on the collection layer. Dust will be minimized from entering the collection layer by keeping surrounding roads and surfaces clean and watered. Each cell will be allowed to remain open (i.e., top of finished primary leachate collection layer) for only one winter season, if the cell remains open for longer periods, a plan to protect the liner system will be required by the NYSDEC.

Each of the six proposed cells is designed with both a primary leachate collection system and a secondary leachate collection system. Each of these systems is designed to operate independently of each other and for each cell. This will allow for an individual cell to be shut down and monitored if a problem is detected, allowing for the landfill to continue operating in one of the other constructed cells.

As each phase of the proposed landfill is constructed and filled, interim final cover will be placed on areas that reach final grade. Figure 14, presents a conceptual progression of cover construction, corresponding to approximate cell construction. As shown on the figure, "Capping Event I" will occur prior to the construction of Cell 2, the actual area capped may vary based on fill conditions at that point in time. The final capping events will proceed as final grades are achieved and sufficient settlement has occurred to allow placement of the final cap.

The filling and placement of interim cover and final cover is described in more detail in Sections 9.1.3 and 9.1.4.

## 6.1 Proposed Stormwater Controls

Stormwater diversion within each cell during filling will be accomplished by using either a berm and sump pump or flap as diversion devices. Each cell will be divided into active waste placement areas of approximately 3.5 acres. The details of the diversion devices are shown on Figures 7 and 8. The stormwater diversion berms will be constructed across the floor of the proposed cells by placing a flap upslope of the berm along the primary liner and then up and over the berm. The berm will be constructed out of additional primary drainage material and will vary in height depending on the drainage area upslope. The berm will be sized to contain a 25-year, 24-hour storm. A sump will be installed at the low point behind the berm as shown on the figure to allow for a sump pump to remove the stormwater. Stormwater will be removed from these sump areas on a daily basis and following rain events to prevent excessive heads and prevent leakage through the diversion berms (see form in Appendix B31). Stormwater diversion flaps might be used in place of the diversion berms/sumps in cells where the intercell berm elevation is low enough to allow runoff to be diverted out of the cell. The stormwater diversion flap will be constructed along a contour crossing the cell floor, which will allow for stormwater to flow over the intercell berm and onto the adjacent runout area. The diversion flap will be placed upslope of the active waste area and be placed to stand approximately vertical in the primary drainage material. The material covering the diversion berm or forming the flap will be a suitable plastic material. The material shall be extended a sufficient length upslope of the berm or flap to prevent significant water migration between the material and the liner. Stormwater will be kept out of the perforated leachate collection pipes upstream of the diversion berm/flap by either tarping the leachate collection material or blocking the pipes at the berm.

Upon completing the filling of a 3.5 acre area, the next upslope area will be prepared for filling. A diversion berm or flap will be constructed as shown on Figures 7 or 8 and the existing berm or flap will be cut to allow for leachate flow. Extra drainage material placed to form the berm or along the flap may either be removed and reused or graded across the top of the drainage layer.

The current operation at the working face limits run-on/runoff. The operation of the landfill includes limiting the size of the working face. A smaller working face results in better control of waste placement procedures for limiting run-on/runoff.

The slopes of the working face and the area around the working face are prepared (sloped inward) to collect the precipitation that comes into contact with the waste and daily cover. Precipitation that comes into contact with the working face waste or daily cover, percolates through the waste mass into the landfill.

If the working face is located in a large flat area, run-on control is primarily performed through limitation of the size of the working face. In areas where the working face is adjacent to a large upslope area, a diversion swale will be constructed between the upslope area and the working face to intercept surface runoff from the slope and divert the runoff away from the working face. The decision to construct a diversion swale is based on daily field conditions and the fact that surface water which contacts either waste or daily cover must be collected and treated as leachate.

Stormwater controls outside the cell will consist of the perimeter drainage channels, culverts and sedimentation basins. These devices will be constructed as each cell is developed, therefore runoff from the perimeter berms and roads will be initially directed to these structures. Upon placing intermediate cover, interim final cover or final cover, stormwater will be directed into the perimeter drainage structures as described above.

The design of proposed sedimentation basin #5 allows for the basin to be closed in the event that stormwater runoff from the landfill has been contaminated. This will allow for the stormwater to be tested and disposed of properly. The basin inlet and outlet are equipped with valves, which will be typically open, and on a daily basis the water will be visually inspected (see form in Appendix B31). If a problem is detected the valves will be closed and the Operations Manager will initiate an investigation to determine the source and concentration of the contamination as discussed in the Contingency Plan (Part VI of this submittal).

## **6.2 Waste Fill Monitoring**

Acceptable wastes and the waste receiving process are described in Section 7 and 8. As waste is placed each day, a daily log will be maintained to include the following information:

- Waste Type
- Waste Quantity
- Waste Origin and or Hauler
- Date Waste was Received

In addition to the daily log, each days waste placement will be indicated on a copy of the fill progression drawings, noting the horizontal and vertical location of the days waste placement. This information will be recorded by the Scale House Operator as each load is accepted for disposal.

Select waste deposited within the first five foot lift above the leachate collection layer will be placed in a manner which prevents damage to the liner system. To achieve this, the landfill will position a spotter on the leachate collection layer to inspect the select waste and ensure removal of rigid objects (i.e. objects greater than two feet in length including wood, metal, bed springs and etc.). Trucks depositing the waste and landfill equipment placing the waste will be located on haul roads and platforms of significant thickness to prevent damage to the liner and collection systems. Low ground pressure equipment will be utilized to place the lift of select waste. Upon completing the placement of the select lift, the Operations Manager will monitoring both the primary and secondary leachate collection systems to ensure that damage did not occur.

## **7. WASTE AMOUNTS AND CHARACTERIZATION**

### **7.1 Waste Amounts**

The Chaffee Landfill is presently permitted to accept up to 600,000 tons of solid waste annually. The quarterly waste receipts must not exceed 180,000 tons per quarter for any one quarter ending March 31, June 30, September 30 and December 31. The Chaffee Landfill can also accept BUD materials in addition to the solid waste. BUD materials used as alternate daily cover (ADC), cannot exceed 20 percent of the total annual amount of non-BUD solid waste disposed in the landfill. Therefore the Chaffee Landfill could theoretically accept 120,000 tons of BUD material to be used as ADC annually in addition to the 600,000 tons per year of solid waste. Other potential BUD materials used within the landfill for access roads, etc. are not limited by the 20 percent rule, but will be subject to NYSDEC approval on a case by case basis. All BUD materials must be approved on a case by case basis by the NYSDEC prior to acceptance at the landfill.

### **7.2 Waste Characterization**

The only wastes accepted for disposal at the Chaffee Facility are municipal waste and nonhazardous industrial solid wastes, construction and demolition (C&D) debris, contaminated soil and sludges. Industrial wastes, commercial wastes, and sludges will be accepted only upon written acceptance by the NYSDEC Regional Solid Material Engineer (RSME) except that waste streams less than 100 tons per year and virgin petroleum contaminated soils (i.e. spill of pure

petroleum product) meeting the landfill acceptance requirements may be received by the Chaffee Landfill without approval by the NYSDEC. For waste streams less than 100 tons per year and virgin petroleum soils, the landfill must maintain adequate documentation that the material is non-hazardous and meets the landfill acceptance criteria. Drum disposal at the landfill may be allowed based on the information provided in Section 8. All requests for acceptance will be submitted on the WMNY Waste Material Profile form approved by NYSDEC. Neither bulk liquid wastes, nor wastes containing free liquids or wastes with a solids content of less than 20 percent shall be received at the landfill. Wastes containing liquid shall be approved by the department. No hazardous waste (as defined in 6 NYCRR Part 371), which is subject to regulation under 6 NYCRR Parts 370 through 374 and no radioactive waste (as defined and regulated in 6 NYCRR Part 380) will be received at the facility.

### **7.3 Placement And Compaction Of Solid Waste**

Waste will be placed in the landfill as stated in Section 6 of this manual, which includes proper cover management and stormwater controls. Solid waste, excluding industrial waste and ash, will be spread and compacted on the preceding lift of solid waste. Cover material is soil or other suitable material, or a combination of same, acceptable to the NYSDEC that is used to cover compacted solid waste in a landfill.

When solid waste is deposited at the working face by incoming trucks, the following conditions will be adhered to during operations;

1. The working face width will be restricted to the smallest area practicable based upon the peak daily incoming waste rate.
2. Trucks will be unloaded as close to the working face as possible to limit tracking waste out of the landfill.
3. Before additional waste filling occurs in an area that has received daily or intermediate cover, the soil may be scraped off and stockpiled for continued use as daily cover material. When BUD soils have been used as alternate daily cover, the cover may not be removed and reused. When the amount of waste contaminating the soil prohibits its use as daily cover, the soil shall be disposed of in the landfill.

4. Lift height will be a maximum of ten (10) feet, except that the first lift placed over the leachate collection layer will be installed as five (5) feet of select waste followed by five (5) feet of waste.
5. The Equipment Operator will watch for any unauthorized waste, including tires or white goods, and if any is encountered, will follow the unauthorized waste procedures (see Section 8.2).
6. Waste will be spread and compacted in layers not to exceed two (2) feet in thickness. Each layer shall be compacted with a minimum of three (3) passes of the equipment.
7. Maximum working face slope will be no greater than three (3) horizontal to one (1) vertical.
8. A minimum of six (6) inches of cover material or ADC will be applied to the top surface of waste at the end of each day.
9. At least twelve (12) inches of compacted soil (intermediate cover) shall be placed over all areas that will not receive wastes within 30 days.

Based on fill volume calculations, the expected in-place density of waste at the landfill is approximately 1,400 pounds per cubic yard.

## **8. SOLID WASTE RECEIVING PROCESS**

### **8.1 Waste Placement Control**

The landfill is routinely surveyed to estimate available airspace and to calculate remaining site life. Annual Aerial surveys and quarterly ground surveys are performed to provided the Chaffee Landfill with volume data to evaluate airspace utilization. Grade stakes are placed along the exterior berms and slope staking is performed during final grade waste placement. These surveys are also performed to ensure sideslopes and waste elevations are within approved limits.

## 8.2 Receipt And Monitoring Of Incoming Solid Waste

Incoming traffic enters at the main entrance off Olean Road and proceeds to the scale house.

Procedures for receiving vehicles at the scale house are as follows;

1. Vehicles drive onto the in-coming scale and stop.
2. The Scale Operator makes sure that the driver has an agreement on file with the landfill. The Scale Operator records the date and time, account number (this will reference the waste origin/hauler), waste type, approved application number if applicable, the current location of solid waste placement, gross vehicle weight, tare weight, and the net weight of solid waste in the computer, which generates a scale ticket.
3. Scale tickets are verified and signed by the driver of the vehicle. The Scale Operator gives one copy of the scale ticket to the driver and the other copies are retained for future reference and compiling the monthly invoicing.
4. Vehicles are directed to the active working area of the landfill.
5. For loads containing industrial waste or when tare weights are not available, the vehicle is reweighed on the outgoing scale after depositing solid waste in the disposal area.
6. WMNY will maintain copies of completed forms for a period of three (3) years after they have been completed.

The landfill accepts a variety of residential, commercial, and non-hazardous industrial wastes. Customers of the landfill are required to sign a Service Agreement prior to disposing of solid waste. The Agreement clearly outlines what is and what is not acceptable at the landfill.

Acceptance of hazardous waste as defined in 6 NYCRR Part 371 is prohibited. Radioactive waste subject to the regulations of 6 NYCRR Part 382 is prohibited from disposal in the landfill. "Below Regulatory Control" radioactive waste will be treated as radioactive waste.

Disposal of solid waste at the landfill from industrial operations is prohibited except as approved in accordance with the Special Waste approval process and accepted by the NYSDEC. Commercial waste streams are allowed for disposal at the landfill, but must be approved by the

NYSDEC. Sludges with a solid content less than 20 percent, and sludges, which have free moisture, are not accepted for disposal. Sludge accepted at the landfill must be de-watered to 20 percent solids, and digested or otherwise stabilized by the generator. Waste water treatment plant sludge must be stabilized by the generator in accordance with the Criteria for Sludge Stabilization for Disposal in New York State, established September 24, 2003 by the NYSDEC. At the working face, the sludge will be mixed with other refuse during spreading and compaction at the working face or placed into a pit excavated into the previous lift of waste. If sludge is placed in a pit excavated in solid waste, no mixing will occur. Odors should be reported to the operations manager to determine if any action must be taken concerning odor control (see Section 13).

Incinerator ash from the incineration of non-hazardous municipal, commercial, or industrial solid waste will be accepted at the landfill if the ash is tested and shown to be non-hazardous. Incinerator ash is approved in accordance with the Special Waste approval process and accepted by the NYSDEC.

Drum and tank disposal at the landfill will be allowed as described here. The drums shall be empty as described by the RCRA definition stated in 40 CFR 261.7, and must be opened. If closed drums, full or partially full drums are delivered to the site, they must be rejected or held in the landfill until inspected by the NYSDEC RSME. The contents of the drums will be verified with the generator prior to opening to ensure that proper safety precautions are taken. These drums will then be opened and inspected by the NYSDEC RSME, if acceptable they will be disposed of in the landfill. If a generator plans on disposing of several similar drums over a period of time, the NYSDEC may allow the site to perform inspections of the drums. Acceptance of tanks for disposal will be allowed if: the tanks are empty according to the RCRA definition referenced above; and each end of the tank ends is removed to allow for the tank to be crushed flat upon placement in the landfill.

Other wastes which are specifically excluded are whole tanks, except as allowed under 6 NYCRR Part 360-2.17(r), septic tank pumpings, flammables, whole cars, whole tires, lead acid batteries, regulated medical waste and explosive bottle gas containers which have not had pressure fittings removed.

Landfill personnel will be on duty during operational hours to ensure that only NYSDEC approved wastes are disposed at the landfill. In the event unauthorized wastes are received at the landfill, landfill personnel shall refuse to accept unapproved wastes for deposit at the landfill and shall immediately notify the NYSDEC RSME and/or the on-site monitor of the incident within 2

hours of discovery on a business day or on the next business day following a weekend or holiday, providing the hauler's name and (if possible) license number of the vehicle, the type of waste thought to have been transported, and the generator of the waste. If the waste has already been dumped and cannot be reloaded, the waste shall be segregated and secured until proper disposal can be arranged for within 30 days. A written report on the incident shall be forwarded to the NYSDEC on-site monitor and the NYSDEC RSME within five (5) working days.

At least one solid waste collection vehicle is chosen at random on a weekly basis for inspection of unacceptable waste at the working face. The District Manager or Operations Manager will pick a number between one and one hundred and a particular date in a week. On that day, the Scale Operator will add that number to the beginning scale ticket number and the resulting number will be the vehicle inspected. Inspection activities include both screening before and after the solid waste has been deposited at the working face. The results of this inspection are recorded and maintained on file at the landfill (Appendix B2). Additional random inspections will be performed as requested by the NYSDEC on-site monitor.

As industrial wastes are brought onto the site, the procedures for receiving vehicles at the scale house will be followed and upon acceptance of the load, the scale operator will notify the landfill operators of the industrial waste (identify the truck/hauler and the type of waste). Loads of industrial waste will then be checked at the active area by the landfill operators prior to disposal to ensure compliance with the accepted waste. Sampling and analysis of these loads will be conducted if the landfill operator observes unusual conditions (difference in color, odor, consistency, etc.).

The Equipment Operator checks all loads of waste at the time of disposal. Any waste, which, because of its appearance, odor, physical properties or packaging does not appear to be acceptable waste, is considered unacceptable waste.

If whole tires are identified in the waste as it is being unloaded from trucks or as it is being placed by the compactors, the landfill operators will move the tires to the edges of the working face. Upon completing the waste placement for the day, the tires will be collected and properly disposed of.

The Operations Manager is responsible for insuring that the unacceptable waste is segregated on the site as promptly as practicable. The Operations Manager is responsible for completing a waste hauler inspection form for the suspicious waste received, specifying its temporary disposition on-site and notification as stated above.

The landfill's disposal agreements address what is to be done with suspicious wastes and places all responsibility on the generator to prove that the waste is acceptable for disposal at the landfill.

If the waste is determined to be unacceptable waste it will be handled as outlined in the Contingency Plan.

### **8.3 Special Wastes**

#### **8.3.1 Overview**

The goal of the Special Waste Program is to ensure that only non-hazardous wastes are received for disposal at the Chaffee Facility. A waste is hazardous if it is listed in 40 CFR 261.31-261.3 or 6 NYCRR Part 371 or, if by its characteristics, it is determined to be hazardous. Part of the approval process is ensuring that documentation is provided that fully characterizes the waste.

When profiling a Special Waste stream into the Chaffee Facility, a Generator's Waste Profile (Appendix B1) must be completed. This document can be obtained from the facility or by contacting the Special Waste Approvals Person. Each section of the Generator Profile are typed or filled out in ink with detailed information and signed by an authorized representative for the generator. If someone other than the generator is signing the profile, a letter of authorization from the generator must be provided.

Paperwork including analytical test results, Material safety data Sheets (MSDS), site history and description describing the waste along with the profile must be included with the profile. The information is then sent to the Special Waste Approval Person at Waste Management, WNY Industrial Sales, Customer Service/Waste Approvals, 1550 Balmer Road, Model City, NY 14107.

Analytical test results if required must come from a laboratory certified by the New York State Department of Health for analysis of hazardous waste characteristics. Analytical reports must be signed by the lab and include the chain of custody report.

Once the completed package (Generator's Waste Profile, test results, MSDS, supplemental information, supporting letters, service agreement, etc.) is received by the approvals person, a decision can be made on the acceptability of the waste within a two to three day time period.

A hauler must possess a NYS Department of Environmental Conservation Waste Transporter Permit, to haul industrial processed waste or special waste. This permit must be in the vehicle and available for inspection if requested. Loads must be tarped in order to be accepted into the facility. In addition, manifests are required for friable asbestos wastes.

The NYSDEC must approve all industrial waste, commercial waste and sludge special waste streams that exceed 100 tons per year. For waste streams less than 100 tons per year and virgin petroleum soils, the landfill must maintain adequate documentation that the material is non-hazardous and meets the landfill acceptance criteria. A copy of the profile and associated paper work is submitted to the NYSDEC for review and approval, after the Special Waste Approvals Person has reviewed and accepted the profile. The generator is notified in writing when the waste stream has been approved for acceptance into the facility. A copy of the Special Waste Management Decision is then sent to the generator along with any special conditions of disposal noted on the approval. Special handling may be required depending on waste type. Generally any special handling requirements will be noted on the profile.

### **8.3.2 Customers Served and Types of Waste Streams**

The Chaffee Facility provides disposal services for Special Waste customers primarily in New York. One customer may have a number of different special waste streams. Examples of special waste streams include; grinding sludge from a manufacturing process, incinerator ash from a hospital, and outdated or off-spec products from a pharmaceutical manufacturer. Approximately 10 to 20 percent of the total volume at the Chaffee Facility is identified as special waste. Each special waste stream is documented and appropriately managed according to its individual Special Waste Management Decision.

### **8.3.3 State and Local Regulatory Requirements**

The following New York State regulations govern the management of special waste handled by the Chaffee Landfill;

6 NYCRR Part 360	Solid Waste Facility Regulations
6 NYCRR Part 364	Transport of Waste
6 NYCRR Part 703	Groundwater Standards
6 NYCRR Part 370-373	Relating to Identifying Standards for Hazardous Wastes

These regulations are followed in conjunction with the Special Waste program. The additional procedures followed in this plan are to ensure compliance with the above referenced regulations. Prior to the site's acceptance of any industrial/commercial waste stream as defined in 6 NYCRR Part 364.1 (d) (3), all necessary permits must be secured and approved.

### 8.3.4 Asbestos Landfill Procedures

“Friable” asbestos means that the material can be easily crumbled under hand pressure and would likely emit or release fibers. This type of asbestos is regulated by the USEPA and NYSDEC. Examples of friable asbestos are; pipe insulation and boiler wrap.

Conditions for hauling and disposal are:

- 24 hour notification to the Chaffee Facility;
- A 2212 placard, indicating the presence of asbestos, on 4 sides of the container;
- Class 9 Label on opposing 2 sides near the closure of container for bulk shipments;
- Manifest requirements:
  - 1) Full address of generator.
  - 2) Emergency phone number in the event of a spill.
  - 3) DOT shipping information **MUST READ**; **Asbestos, 9, NA2212, III, RQ.**
  - 4) All information must be printed or typed.
  - 5) Signatures where appropriate.
- Drivers should wear respirators with filters designated to remove asbestos;
- Material must be double bagged in 3 mil bags and labeled, packaged, and transported in accordance with OSHA (1910-1001,1910-1200), DOT 49 CFR (172 & 173) and National Emission Standards for Asbestos NESHAPS (Subpart M). Each bag must have a label with the generator's name and address;
- Transporter must be trained in accordance with OSHA, DOT and NESHAPS;
- Disposed of in trench between 8 – 11 am;
- Non-perforated tarp required;

- Must list the Chaffee Landfill on Waste Transporter permit; and
- Material must be profiled.

Non-Friable asbestos is not a regulated substance, provided it cannot or does not become friable due to handling or off-loading at the landfill. Non-friable asbestos containing materials must be landfilled and not used as a Beneficial Use Determination (BUD) material such as daily cover. Upon arrival at the working face, the operator or designated landfill personnel will direct the hauler to the selected disposal area away from the active face. The operator(s) should remain in the cab and spotter and operator should remain up wind of the disposal location and be sure to keep other haul vehicles away from the area until the load is buried.

If the loading/unloading warning sign is not already up, then keep the container/vehicles away from the area until the load is buried.

The equipment operator shall direct the hauler to the excavated trench, swale or other designated area large enough to accept the load. While backing up to the trench, if the container door is open, the waste must be secured so that bags or drums do not fall out before reaching the designated area. The area should be such that it is perpendicular to prevailing winds and refuse should be pushed toward the windward side of the designated area. To minimize the amount of trash/cover required, the designated area should be kept as narrow as possible.

Dumping of the asbestos-containing load shall be done with care to reduce the potential for puncturing a container and prevent visible emissions. The dumped load is not compacted, but should be covered from the up wind side with refuse or soil. This procedure should be conducted carefully with the intent to "bridge" the asbestos-containing load with refuse. At least 3 feet of refuse or 18 inches of soil will be pushed over the load prior to passing over it with compaction equipment. Do not run machinery over exposed asbestos.

After the asbestos has been unloaded, the designated landfill personnel signs the shipping paper as received and gives the hauler a copy. Another copy must be mailed by the landfill to the generator within 30 days.

### Reporting Requirements

In the event that small amounts of bags or containers are ruptured, the designated landfill personnel witnessing the disposal should note it on the shipping paper.

If there is a significant amount of improperly enclosed or uncovered waste, or any ACM not sealed in leak-tight containers, a report must be submitted by the following work day along with a copy of the Waste Shipment Report to the generator's NESHAP administering agency and the landfill's NESHAP administering agency.

If quantity discrepancies of contained waste are discovered, the site must reconcile the discrepancy with the generator within 15 days of receipt. If the discrepancy cannot be reconciled, the site must immediately report the discrepancy and reconciliation attempts to Federal or State Agency Administrator in writing with a copy of the shipping paper.

The disposal location of asbestos-containing loads must be identified horizontally and vertically within the landfill. Disposal locations are to be recorded so that proper precautionary measures can be taken in the event the material required excavation. The landfill must generate a map indicating the location, depth, area and volume of waste. This will require the use of a global positioning system (GPS) or similar unit that can be used to record vertical and horizontal positioning of the asbestos disposal area. The GPS information is then used to establish the location on a site map of the landfill.

Asbestos disposal will not take place within a minimum of 10 feet of the perimeter of the fill or within 15 feet of final contour elevations. Disposal shall be conducted away from the active face. Asbestos Containing Material shall not be placed in any roadway including access roads for any purpose.

The landfill must notify Federal or State Agency Administrator in writing at least 45 days prior to excavating or disturbing asbestos waste deposited and covered. If excavation begins on a date other than that on the original notice, notice of the new start date must be provided at least 10 working days before excavation begins. The notice must include the scheduled start and completion dates, procedures to control emission during excavation, storage, transport and ultimate disposal, and the location of any temporary storage site and final disposal site. The proper personal protective equipment for the operators and spotter includes head, respiratory, body, and foot protection.

### Landfill Closure Requirements

Within 60 days of site closure, a notation must be recorded on the deed to facility property and on any other instrument that would be examined during a title search to notify any potential

purchaser that the land was used for disposal of asbestos-containing waste, a survey plot and record of location and quantity of waste disposed have been filed with Federal or State Agency Administrator and the site is subject to 40 CFR 61, Subpart M.

### **8.3.5 Asbestos Spill Reporting Requirements**

Persons in charge of a vehicle or facility (landfill) from which asbestos has been released in a quantity that is equal to or greater than its reportable quantity (RQ) must immediately notify the National Response Center (NRC). Friable asbestos equal to or greater than one (1) pound is a reportable quantity and a spill must be reported immediately.

The following procedure should be followed if a reportable quantity (RQ) of asbestos is released to the environment either while on the road or at the landfill. (This procedure must also be used for reporting oil spills or other hazardous substance spills greater than their RQ.) Failure to report a spill could result in those persons having knowledge of the release being subject to criminal penalties.

Initially, the spill should cautiously be contained with the nearby available equipment. The hauler should contact the dispatcher who should contact the emergency coordinator. The dispatcher, the safety officer or other supervisor should make the necessary phone calls. The dispatcher or whoever gets the first call must keep a record of the time all calls were made and other pertinent information. The truck driver must remain at the spill site until a supervisor allows him to leave.

The following agencies need to be notified:

National Response Center(NRC)(U.S. Coast Guard) 1-800-424-8802 or 1-202-267-2675.

In New York notify the NRC and the Department of Labor 1-518-457-1255.

The following information will be required;

- Caller's name and company.
- Company phone, address, city, county, state, and zip.
- Who is the spiller?
- Spiller's phone, address, city, county, state, and zip.
- Spill date and time.

- Discovered after the fact?
- Directly observed?
- Type of spill material.
- Total quantity spilled/released (to the environment).
- Source and cause of release.
- Effected medium.
  - Injuries, fatalities, evacuations?
- Response actions (clean up).
- Anyone else notified?
- Any other comments?

After you have provided this information, you will be given a case number and the name of the case officer, which should be recorded. The National Response Center forwards the information to appropriate EPA regional offices.

Several hypothetical instances follow to help determine if you have a reportable spill. If a bag of asbestos falls from the transport vehicle and is not broken, or if it breaks and less than one (1) pound escapes, this is not considered a reportable spill or release. If a bag ruptures inside the trailer or scaled roll off box and more than one (1) pound escapes inside the box and not to the environment, this is also not a reportable release. Other releases greater than one (1) pound are considered reportable.

## **9. COVER MATERIAL MANAGEMENT PLAN**

In accordance with 6 NYCRR Part 360-2.9(h), the following sections detail the cover material management plan for the Chaffee Landfill.

Cover materials, excluding gravel, geomembrane and geonet/geotextiles, are imported from offsite or are excavated from areas on Chaffee Landfill property. These areas include existing Borrow Areas A and B, which are located to the south and west of the landfill and Proposed Borrow Area C located to the north of the landfill (see Figure 2).

## **9.1 Method Of Cover Placement**

### **9.1.1 Daily Cover**

A minimum of six inches of compacted cover material is applied on exposed surfaces of solid waste at the close of each operating day to control vectors, fires, odors, blowing litter, and scavenging. In addition to soil, the NYSDEC may approve on a case-by-case basis, the use of wastes and contaminated soils for alternate daily cover (ADC). This material can consist of soil, foundry sand, and synthetic cover. Requests for the use of ADC will be made to the NYSDEC prior to its use. The landfill shall contact the NYSDEC to schedule a date and time for inspecting the potential ADC. In the event that nuisance conditions develop as a result of the use of an ADC, the NYSDEC may rescind the approval to utilize the ADC. ADC shall not be stripped after placement and must be covered the following operating day with either waste or virgin soil. When virgin soil is used for daily cover it may be removed at the start of the workday and prior to the placement of any additional lifts. The previous day's daily cover is removed prior to placement of refuse to integrate the new waste with the previous day's waste to promote downward (rather than lateral) migration of leachate to the leachate collection system and to provide better compaction of refuse. Virgin soil will be used as cover on external slopes.

The daily cover material is placed in one lift. Material is dumped adjacent to the open face and is spread over the waste with a bulldozer. The material is compacted by tracking with a bulldozer. Any stormwater or runoff contacting the daily cover must be directed into the landfill and be collected and treated as leachate.

The storage of ADC is limited to areas where runoff can be collected (i.e., not on sideslopes) as leachate and where windblown materials will not land on intermediate and final covered areas. A soil berm will be constructed around ADC storage areas to collect the runoff and prohibit runoff from entering the ADC. This collected runoff will percolate back into the landfill. If an excess of runoff exists within the bermed storage area, the leachate tanker is to be utilized to collect the runoff and transfer the runoff to a permitted treatment plant. ADC stockpiles shall not create nuisances, disrupt daily operations, and should be received as they are used to minimize the amount to be stockpiled.

### 9.1.2 Crushed C&D as Daily Cover

The Chaffee Landfill has approval to use crushed C&D as daily cover, as follows:

#### C&D Material Acceptance/Storage

Chaffee Landfill will only accept recognizable C&D debris as defined by Part 360-1.2(b)(38). Incoming loads of C&D will be inspected for unacceptable articles of debris including, but not limited to metal and plastic containers larger than 1 gallon, white goods, bulky items such as furniture, friable asbestos, paper, plastic, cardboard, and electrical fixtures. These unacceptable articles of debris will be removed at the time of inspection and landfilled. The recognizable C&D that has been inspected and accepted will then be stockpiled and /or processed by crushing on an as needed basis.

Incoming loads of C&D that are not immediately crushed for daily cover will be stockpiled within the landfill footprint. C&D loads that are dusty or may cause a littering nuisance shall be immediately disposed of and will not be used ADC. As C&D debris is needed for daily cover it will be removed from the stockpile for crushing. Chaffee Landfill anticipates stockpiling no more than 10,000 tons of C&D debris at any given time. Unprocessed C&D debris storage piles will not exceed 20 feet in height, and the area of the storage piles at the base of the pile will not exceed 5,000 square feet. A minimum separation distance of 25 feet will be maintained between adjacent piles.

Separate piles of unprocessed C&D debris will not be covered as long as weather conditions allow. C&D will not be stored in any one pile for more than 30 days.

#### Leachate Management and Drainage

All unprocessed C&D debris will be stored and managed to limit rainwater run-on and run-off. C&D debris stockpiles will be located within the landfill footprint. Each pile that will not be used during the current operating day will be surrounded by a soil berm to limit run-on and run-off. Run-off from the stockpiles will be directed into the waste mass for collection as leachate.

#### C&D Crushing /Spreading

C&D debris used as daily cover will be removed from the stockpile or tipped directly onto the working face. The C&D debris will be spread in a 2-4 foot lift using a bulldozer or trash

compactor. The C&D debris will then be crushed using the trash compactor. The trash compactor will pass over the C&D debris until the C&D pieces are small enough to be effective daily cover. The crushed C&D will then be spread using a bulldozer or compactor into a minimum 12-inch layer of daily cover. The C&D shall not be stripped after placement and must be covered within 72-hours of placement with either waste or virgin soil.

### Documentation/Reporting

As required by 6 NYCRR Part 360-16.4(h)(i)(1&2) and 360-16.4 (k)(1), Chaffee Landfill will continue to document the quantity of C&D debris that is stockpiled and crushed for use as daily cover. The volume of C&D debris accepted for use as alternate daily cover will be reported quarterly.

As with other BUD materials, any C&D debris that is stockpiled and crushed for ADC will not be counted against Chaffee Landfill's annual permitted tonnage. However, the total amount of ADC cannot exceed 20 percent of the total annual amount of non-BUD solid waste disposed in the landfill.

### 9.1.3 Intermediate Cover

A minimum of 12 inches of compacted virgin soils is to be applied as intermediate cover in areas that will not receive wastes within thirty days. The virgin soils used shall be a clayey soil so as to limit the amount of stormwater infiltration. Intermediate cover does not include topsoil or vegetation. Erosion damage to the intermediate cover is repaired as necessary when weather conditions permit. This cover material is placed in one twelve (12) inch lift. Material is dumped adjacent to the area to be covered and is spread over the area with a bulldozer. The material is then compacted by tracking with a bulldozer. Stormwater generated from the intermediate cover surfaces or passing over this surface from other capped surfaces shall be directed to the perimeter drainage structures to minimize leachate generation.

### 9.1.4 Final Cover

A permit condition has been included to allow an initial settlement period (after reaching top of waste elevations) prior to construction of the final cover system for the existing landfill. As part of the proposed permit conditions for the proposed Western Landfill Expansion, the NYSDEC will require that an interim final cover be placed on all surfaces upon reaching top of waste elevations. This will allow for an initial settlement period prior to constructing the final cover

system. The purpose of the interim final cover is to control surface water runoff, leachate generation and containment, odor control and provides a visual appearance similar to the surrounding area. Interim final cover will also be installed on areas of the landfill that have not or will not receive waste within one year, regardless of the area reaching final waste elevations.

### Interim Final Cover

Interim final cover soil for the existing landfill will consist of relatively homogeneous, natural soil, which is free of material that, due to nature, size or shape, is deleterious to the intended use. No particles larger than 6-inch in maximum dimension (per ASTM D 422) will be allowed. The material will have at least 30 percent passing the No. 200 sieve by weight and will be classified according to the Unified Soil Classification System (per ASTM D 2487) as CL, ML, SC, SM, GM, or GC.

The interim final cover soil will be placed on the existing landfill in two or more lifts as required to meet the minimum 24-inch thickness requirement. The initial lift of soil will be spread over the underlying waste/temporary cover soils to a loose thickness not exceeding 14 inches and the soil will be uniformly compacted with a minimum of two passes by a minimum 10 ton padfoot compactor, or by other acceptable means. The succeeding lift(s) of interim final cover soil will be placed to a loose thickness of 14 inches or less as needed to meet the 24-inch thickness requirement and uniformly compact the soil. Additional soil will be placed or grades as needed to meet the minimum 24-inch thickness requirement. A pass is defined as one back and forth traverse by the compactor over the same area.

The interim final cover for the proposed landfill will be constructed 27-inches in thickness, consisting of 24-inches of soil having the ability to achieve a permeability of  $1 \times 10^{-6}$  cm/sec and 3-inches of topsoil. The lower 24-inches of soil shall be placed in two loose lifts of sufficient thickness to achieve a compacted thickness of 12-inches for each lift. The placement and compaction criteria for this soil shall be determined based on developing a moisture density relationship with comparisons to remolded permeability tests. If the soil is similar to the soils being used at the site for low permeability liner construction, sufficient data should exist to allow for placement of the soil following the same compaction criteria as was used for the liner. If the soil source is different, or significant changes in index properties are noted, additional testing will be required in combination with the construction of a test pad to determine the required compaction criteria.

In areas within 2 feet of gas wells the material will be compacted with hand-held compaction equipment. Heavy equipment and trucks will be prohibited from traveling on the finished interim cover soil areas, and any ruts or low areas will be filled to provide positive drainage and promote stormwater runoff from the interim cover area.

### Existing Landfill Schedule

In general, the site will be filled and final cover will be applied in five stages as shown in Figure 3. Stage 1 has already been completed and final cover was applied over this area in 2001 and 2002. The remaining Sections 2 through 5 will be filled and allowed to settle for a period of time before the final cover system is constructed. As each section of the landfill reaches final grade, the interim final cover will be applied to the area. After the rate of waste settlement in a completed area has diminished significantly, the final cover system will be applied. In areas where significant settlement has taken place, additional waste will be placed to achieve the final permitted waste grades prior to application of the final cover system.

Interim final cover will be placed on areas of waste that will not or have not received waste for one year in accordance with Condition 3 of the current Part 360 Permit.

### **Construction Seasons 2001 and 2002**

Applied final cover system to Section 1.

Completed construction of the east and southwest berms within the limits of Sections 2, 3, and 5.

### **Construction Season 2003**

Fill Section 2 to top of waste elevation 1655 feet. Total estimated volume is 180,000 cubic yards (approximately 146,000 tons). Grade upper plateau of waste area at 4 percent slope and outer final slopes at three horizontal to one vertical (3H:1V). Grade interim south slope at 3H:1V slope to Sections 3, 4, and 5.

Apply interim final cover to Section 2.

Complete construction of southeast berm within limits around Section 4.

### **Construction Season 2004**

Fill Section 3 to top of waste elevation 1647 feet. Total estimated volume is 450,000 cubic yards (approximately 365,000 tons). Grade outer final slopes along west and south sides at 3H:1V. Grade interim east slope at 3H:1V toward Section 5.

Apply interim final cover to Section 3.

### **Construction Season 2005**

Fill Section 4 to top of waste elevation 1627 feet. Total estimated volume is 450,000 cubic yards (approximately 360,000 tons). Grade outer final slopes along east and south sides at 3H:1V. Grade interim west slope at 3H:1V toward Section 5.

Apply interim final cover to Section 4.

### **Construction Season 2006**

Complete filling of landfill (Section 5) to top of waste elevation 1655 feet. Total estimated volume is 360,000 cubic yards (approximately 292,000 tons). Grade upper plateau of waste area at 4 percent slope and outer final slope along south side at 3H:1V.

Apply interim final cover to Section 5.

Apply final cover to Section 2.

### **Construction Season 2007**

Apply final cover system to Section 3 as rate of settlement of waste diminishes.

### **Construction Season 2008**

Apply final cover system to Section 4 as rate of settlement of waste diminishes.

### **Construction Season 2009**

Apply final cover system to Section 5 as rate of settlement of waste diminishes.

### Proposed Landfill Schedule

As shown in Figures 9 through 13, the site will be constructed and filled in five stages. The schedule for installing the interim final cover will be based upon waste placement schedules and development of the proposed cells. In general, interim final cover will be placed on the outside slopes of the landfill upon reaching grade and will be placed in the following order. The interim final cover will also be installed on areas of the landfill that have not or will not receive waste within one year, regardless of the area reaching final waste elevations. Upon reaching final waste grades, 12-inches of intermediate cover will be placed to comply with 6NYCRR 360-2.17(d). As time and weather allows, the intermediate cover might be removed and replaced with interim final cover followed by seeding and mulching as per Section 9.2.1. Seeding of the interim final cover will not take place during freezing or inclement weather periods, and will be completed as soon as practical.

The schedule for installing the final cover is shown on Figure 14. The areas proposed for final cover placement are divided into five capping events that are scheduled based on the anticipated cell construction sequence and a waste receipt rate of 600,000 tons per year (exclusive of BUD). The figure presents the approximate area scheduled for final cover placement, the year since initial construction and the year that the capping event is scheduled to take place. As shown on the figure, capping events one and two will be performed prior to completing the landfill cell construction. Events three through five will occur over several construction seasons depending upon the rate of waste receipt.

In general, the site will be filled and final cover will be applied in five events. As each section of the landfill reaches final grade, the interim final cover will be applied to the area. After the rate of waste settlement in a completed area has diminished significantly, the final cover system will be applied. In areas where significant settlement has taken place, additional waste will be placed to achieve the final permitted waste grades prior to application of the final cover system.

### Final Cover

Prior to the installation of the final cover system, the interim cover will be stripped and removed to a minimum thickness of 6 inches. The final cover system will be constructed once portions of the site have reached design height and initial settling has occurred.

The final cover system for the existing landfill will consist of the following components in the ascending order:

For all slopes

- Prepared grading layer over the waste
- Geocomposite gas venting layer
- Geomembrane liner
- Geocomposite drainage layer
- 24-inch barrier protection layer
- 6-inch topsoil layer

The final cover system for the proposed landfill will consist of the following components:

For 3H:1V slopes

- Prepared grading layer over the waste
- Geocomposite gas venting layer
- Geomembrane liner
- Geocomposite drainage layer
- 24-inch barrier protection layer
- 6-inch topsoil layer

For 4% slopes

- Prepared grading layer over the waste
- Geocomposite gas venting layer
- Minimum 18-inch barrier soil layer (Permeability less than  $1 \times 10^{-6}$  cm/sec. The thickness shall be verified through permeability testing.)
- Geomembrane liner
- Geocomposite drainage layer
- 24-inch barrier protection layer
- 6-inch topsoil layer

The specifications and construction requirements for the final cap materials will meet the requirements of 6 NYCRR Part 360-2.13(r). Engineering design and Construction QA/QC procedures must be submitted and approved by the NYSDEC prior to constructing the final cap. A construction certification report will be submitted to the Department within 45 days after the completion of landfill closure construction. The report will include all items required under §360-2.15(d)(7).

## 9.2 Cover Maintenance

### 9.2.1 Seeding and Mulching

Seeding and mulching will occur within 14 days of completion of intermediate, interim or final cover construction. The seed mixture will be in accordance with following seed mixture for either temporary or permanent uses.

<u>Name of Grass</u>	<u>Application</u>		
	<u>Rate Per Acre</u>	<u>Purity</u>	<u>Germination</u>
Perennial Ryegrass	10 pounds	95%	85%
Kentucky Bluegrass	20 pounds	85%	75%
Strong Creeping Red Fescue	20 pounds	95%	80%
Chewing Fescue	20 pounds	95%	80%
Hard Fescue	20 pounds	95%	80%
White Clover	10 pounds	98%	75%

The seeded areas will be mulched to conserve soil moisture and provide additional temporary erosion protection. Mulch may consist of clean hay, straw or wood-fiber. Alternatively hydro seeding may be used or the inclusion of a natural or synthetic erosion mat may be installed prior to seeding.

### 9.2.2 Mowing

Vegetated cover areas will be mowed on an annual basis. Initial mowing will not begin until after vegetated areas have completed one growing season and the grasses have set and dropped seeds.

One of Chaffee Landfill's goals is to establish grassland bird habitat on areas of the landfill that have been final capped. In order to best manage the final capped areas for grassland birds, half of the final capped areas of the landfill should be mowed each year. This mowing practice is based on the findings of the breeding bird surveys performed at the several final capped Waste Management landfills in Western New York (see Appendix H). The results of the breeding bird surveys on the capped landfill indicate that the sites were excellent habitat for several grassland species that are either absent or uncommon in the general area.

### 9.2.3 Cover Assessment

Chaffee Landfill will implement a program of assessing daily and intermediate cover in accordance with the Cover Integrity Assessment form in Appendix B3a. Other cover inspections are also performed in accordance with the Stormwater Pollution Prevention Plan (SWPPP) and the gas Collection and Control System (GCCS) Plan cover integrity inspection. The inspection frequency and reporting requirements are discussed in those plans. Copies of the SWPPP and GCCS plan are on file at the facility.

### 9.3 Quantity Of Cover Material

The following are the estimated material needs for the existing landfill's final cover system;

6" Suitable Subbase Soil;	41,000 CY
Gas Venting Geocomposite;	250,000 SY
LLDPE Liner;	250,000 SY
Drainage Geocomposite;	250,000 SY
Barrier Protection Soil (24 inches);	165,000 CY
Topsoil (6 inches);	41,000 CY

These quantity estimates are based on approximately 50 acres of cover system construction. The components of the cover and their thickness are as stated in the current 6 NYCRR Part 360 regulations. Criteria for placement of the final cap materials can be found in the final cap design drawings prepared by Benchmark in 2001, Chaffee Landfill Berm, Cover System, Gas Collection & Leachate Storage Construction drawings, and 2002, Chaffee Landfill 2002 Construction Project drawings, and by Golder Associates in 2003 Final Cover and Berm Construction Project drawings.

The following are the estimated materials needs for the proposed landfill's final cover system;

6" Suitable Subbase Soil;	48,671 CY
Gas Venting Geocomposite;	292,025 SY
Barrier Soil (18 inches on 4% slopes)	25,229 CY
LLDPE Liner;	292,025 SY
Drainage Geocomposite;	292,025 SY
Barrier Protection Soil (24 inches);	194,683 CY

Topsoil (6 inches);

48,671 CY

These quantity estimates are based on approximately 58 acres of cover system construction. The components of the cover and their thickness are as stated in the current 6 NYCRR Part 360 regulations. Criteria for placement of the final cap materials will be based upon design drawings, specifications and QA/QC plans developed for each capping event. These plans will be submitted to the NYSDEC for review and approval prior to beginning the construction of each capping event.

Stockpiles of materials will be made available for emergency, daily, intermediate or interim covers.

## **10. ENVIRONMENTAL MONITORING PLAN**

The Environmental Monitoring Plan for the existing Chaffee Landfill is a separate stand alone document that includes groundwater, surface water and leachate monitoring. The February 1999 revision to the EMP was submitted to the NYSDEC and approved as part of the Part 360 permit renewal in October 1999. The existing EMP includes discussions pertaining to the operation and maintenance of the monitoring points.

For the proposed western landfill expansion, the Environmental Monitoring Plan is included as Part IX of this submittal. The proposed EMP includes discussions pertaining to the operation and maintenance of the monitoring points.

### **10.1 Groundwater Collection System**

For the proposed western landfill expansion, Cell 6 has been designed with a groundwater collection system in accordance with 6 NYCRR Part 360-2.13(d). This system will collect potential groundwater through a geocomposite drainage material, which will direct the water to a collection trench and pipe, which then flows to a collection sump where a submersible pump will discharge the water into the perimeter drainage swale.

The groundwater collection pump will consist of an EPG wheeled sump drainer, model WSD2-2 and be installed into a 12-inch HDPE sideslope riser. Associated flow meters and valves will also be installed within each of the sideslope riser. The riser pipe will allow for the pump to be removed for repair and replacement if necessary. The groundwater pump is sized to remove 10.5 gpm at 32 feet of total head.

## Groundwater Sump Pumping System Control/Operation

The groundwater collection pump will be configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the sump. This is activated when the sump has a liquid level of 12-inches.
- Pump-On: initiated by a high-level conductance probe located in the sump and interlocked to the pump starter in the pump control panel. This is activated when the sump has a liquid level of 18-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. This alarm is activated when the liquid level in the sump reaches a level of 24-inches and will deactivate when the liquid level in the sump drops to a level of 23-inches.

An Autodialer will also be installed as part of the leachate storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the groundwater sump occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The groundwater sump pumps are operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the "On" position. Note; both disconnect switch and circuit breaker should normally be in the "On" position.
- Sump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the groundwater level in the sump reaches the "pump on" level probe, and turns off automatically when the groundwater level in the sump reaches the "pump off" level probe.

- Typically the sump would only operate with the Hand-Off-Auto Switch (H-O-A) switch in the "Hand" position if there were problems with the sump level probes.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

### Groundwater Sump Pumping System Inspection

Inspection of the groundwater collection sumps consists of daily and monthly activities and are listed in Appendix B3c and B3e. Once a day, the flow meter in the sump will be read and the amount of groundwater generated will be recorded on the form in Appendix B3c. Each month, the high level alarm and flow meter for the sump will be checked to ensure proper functioning (form in Appendix B3e).

## **11. LEACHATE MANAGEMENT PLAN**

### **11.1 Introduction**

This section addresses the requirements of 6 NYCRR Part 360-2.9(j) and 2.17(g) regarding leachate management. The existing and proposed Chaffee Landfill is constructed, operated, and maintained in a manner that is intended to limit the quantity of leachate generated, and to prevent the migration of leachate into surface water and groundwater. This section addresses how leachate has been and will be managed at the site to meet these goals.

#### **11.1.1 Existing Landfill Leachate Collection System**

The existing landfill's leachate collection system was constructed in two ways. The first included the construction of a perimeter leachate drain around the Original Fill Area (see Figure 15) with the installation of three collection tanks at location 1, 2 and 3. The second included construction of 24 inches of compacted liner material with an in-place hydraulic conductivity of less than  $1.0 \times 10^{-7}$  cm/sec to both the west and north of the Original Fill Area. The lined areas were constructed with approximately three percent slopes to allow leachate to drain to a series of leachate collection pipes and ultimately to collection tanks at locations 4 and 5. This complete system is referred to as the Former Leachate Collection System and is shown on Figure 15.

As the existing landfill began to reach capacity and portions were scheduled for closure, several components of the leachate collection system were replaced to allow for continued collection. This work allowed for the facility to better maintain and operate the collection system during closure and post closure. The work included retrofitting the existing leachate collection tanks at locations 1, 2, 3 and 4 by decommissioning the original tanks located within the landfill (see Figure 15), and replacing them with new tanks located outside of the landfill berm (see Figure 16). The leachate collection tanks at locations 3 and 4 were replaced with one double walled, cathodically protected steel tank. Leachate collection tanks at locations 1 and 2 were each replaced with a sump and riser located within the landfill and a double walled, cathodically protected steel tank located outside of the landfill. The existing leachate collection sump at location 5 remains in its original location. Leachate from sump 5 is manually pumped through a dual contained transfer line to the replacement tank for 3/4. The operation and maintenance plan for the existing system is discussed in Section 11.2.

### **11.1.2 Proposed Landfill Leachate Collection System**

Each cell of the proposed landfill will be constructed with a double composite liner system meeting the requirements of 6 NYCRR Part 360-2.13. The double composite liner system contains a primary leachate collection layer and secondary leachate collection layer. The primary system is constructed with a granular drainage layer, collection pipes, collection sump and sump pump to allow for removal of the leachate to the gravity transmission line and on-site storage tanks. The secondary leachate collection system is constructed with a geocomposite drainage layer, collection pipes, collection sump and sump pump to allow for removal of liquid to the gravity transmission line and on-site storage tanks. The leachate storage system consists of two above ground storage tanks located within a secondary containment tank. Leachate flow into and out of the tanks is controlled by piping, valves and a loadout pump located in the control vault, which is constructed within the secondary containment tank. Leachate is transferred to tanker trucks through the loadout pump. Trucks are loaded on the loadout pad, which is located within the enclosed loadout building. The components of the proposed collection system are shown on Figure 17 and the design of the leachate collection system is shown in the Engineering Report Appendix C (Part IV of this submittal) and on the Engineering Drawings, specifically sheets 16 through 26. The operation and maintenance plan for the proposed system is discussed in Section 11.3.

## 11.2 Present Leachate Collection, Transmission and Storage System

### 11.2.1 Introduction

The existing Chaffee Landfill leachate collection, transmission and storage system is designed to collect and store leachate generated from the landfill in a manner that limits impacts to public health and the environment. Due to the fact that the operation of the landfill includes limiting the size of the working face, smaller amounts of precipitation are introduced into the waste mass, which limits the generation of leachate. Limiting leachate generation is also a result of applying daily, intermediate and interim cover as required by the regulations and the installation of a NYSDEC approved final cover system at closure.

The existing Chaffee Landfill's present leachate transmission and storage system is constructed with a series of interior leachate collection sumps (LCS) and exterior leachate storage tanks (LST) used to manage the leachate collected within the landfill. As part of the gas control system there are currently three condensate knockouts, which either transmit condensate directly to a LST or collect it in a storage tank for subsequent disposal. Two of the condensate knockouts drain liquid directly into either LST 1 or LST 2. The third condensate knockout consists of a tank, which collects liquid from the gas header just prior to the gas entering the flare, the operation and maintenance of this tank will be discussed in this section. The LCS and LST designations and numbering has been revised to reflect the design and operation of the present system. The current layout and location of the various sumps and tanks can be seen in Figure 16.

For the purposes of this Operation and Maintenance Plan the existing Chaffee Landfill leachate collection, transmission, and storage facilities are designated as follows:

- Leachate System 1,
- Leachate System 2,
- Leachate System 3/4,
- Leachate System 5, and
- Gas Condensate Knockout Tank.

Leachate generated at the existing facility is transported off-site by tanker truck to a permitted wastewater treatment facility. Currently, the landfill maintains agreements with the City of Niagara Falls Wastewater Treatment Facility and the Buffalo Sewer Authority. The landfill will

maintain agreements with at least two (2) treatment facilities. Copies of current Discharge Permits are included in Appendix D.

Hauling of leachate is primarily provided by Chaffee Landfill. A contract with a secondary leachate hauler, Tonawanda Tank Transport Service Inc. is maintained by the facility. A copy of the contract is included in Appendix E.

### **11.2.2 Leachate System 1 and 2**

As shown on Figure 16, leachate generated along the eastern half of the existing facility is collected in perimeter perforated drain pipes that slope to either leachate collection sump 1 or 2 (LCS 1 or LCS 2). These sumps were installed in the location of the former leachate collection tanks 1 and 2, and consist of a manufactured HDPE sump with 24-inch diameter sideriser pipe daylighting along the outside of the landfill berm. Located within each of the siderisers is a sump pump equipped with level controls. Leachate is pumped from the siderisers to each of the new leachate storage tanks, denoted as either LST 1 or LST 2. These tanks are dual contained and have been equipped with a submersible pump, level controls, leak detection monitoring system and cathodic protection monitoring test station. The submersible pumps located within the tanks allow for leachate to be transferred to a tanker truck for off-site disposal. The tanker trucks are filled on concrete loadout pads, which have been constructed adjacent to the storage tanks.

In the event of a power failure, a diesel powered backup generator is located adjacent to the flare building. This generator can be manually started to operate both LCS 1 and 2 and LST 1 and 2. Instructions for operating the emergency generator can be found in Appendix I. If a power failure occurs at LCS 1 or 2 or at LST 1 or 2, an autodialer has been installed as part of these systems to transmit a power failure message to a list of site personnel. The receipt of this message will allow site personnel to initiate a manual startup of the generator.

### **Leachate Collection Sumps No. 1 and No. 2 Operation**

Leachate is collected and pumped from LCS 1 and LCS 2 located along the toe of the east berm of the existing landfill. Each sump is equipped with an EPG WSDPT 5-2 wheeled sump drainer. The pump and associated level probes are located inside a 24 inch diameter HDPE sideslope riser pipe which is welded to the HDPE sump. The pump control panel is located at the corresponding leachate storage tank. This riser pipe allows the pumps and level probes to be

accessed for service, if necessary. The pumps are sized to pump approximately 15 gpm at 45 feet of total head.

#### Leachate Sump Pumping System Control/Operation

The leachate sump pumps are configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high-level probe (see Appendix A1 and A2) which are also described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the sump. This is activated when the liquid level in the sump has a level of 8-inches.
- Pump-On: initiated by a high-level conductance probe located in the leachate sump and interlocked to the pump starter in the pump control panel. This is activated when the liquid level in the sump has a level of 36-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. The alarm is activated when the liquid level in the sump has a level of 42-inches and will deactivate when the sump drops to a liquid level of 41-inches.
- Interlock feature to shut down sump pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between LST 1 and LCS 1 or LST 2 and LCS 2 have been installed to automatically shut off the sump pumps and / or will not start if a high liquid level condition exists at LST 1 and LST 2.

An Autodialer has also been installed as part of the LST 1 and LST 2 controls and has been formatted to send an alarm in the event that a high liquid level alarm condition in the sump occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The leachate sump pumps are operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the flare building must be in the “On” position. Note; both disconnect switch and circuit breaker should normally be in the “On” position.
- Sump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the sump reaches the "pump on" level probe, and turns off automatically when the leachate level in the sump reaches the "pump off" level probe.
- Typically the sump would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the sump level probes.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

### Leachate Sump Pumping System Inspection

Inspection of the leachate collection sumps consists of both weekly and monthly activities and are listed in Appendix B3d and B3e. The weekly inspection involves monitoring of the sideslope riser secondary containment inspection ports for any signs of leakage (form in Appendix B3d). Each month, the high level alarm will be checked to ensure proper functioning (form in Appendix B3e).

### **Leachate Storage Tank No. 1 and No. 2 Operation**

Leachate that is collected and pumped from LCS 1 and LCS 2 will be directed to LST 1 and LST 2 respectively. Each of the leachate storage tanks were manufactured by Highland Tank and Manufacturing Company. Tank drawings and information are provided in Appendix A1 and A2. LST 1 and LST 2 are double-wall steel underground storage tanks with polyurethane coating for corrosion resistance, designated as Steel Tank Institute – P3 Tank (S.T.I. P-3). LST 1 has a 12,000-gallon capacity and LST 2 has a 25,000-gallon capacity. Both tanks have an interstitial space with a leak detection monitoring system to allow continuous monitoring of the entire interstice for the life of the tanks, a rectangular piping containment sump, and a Protection Prover 2 (PP2) cathodic protection monitor test station.

Each tank is equipped with a Flygt CP 3127 HT submersible pump, which transfer the leachate from the tank to the tanker trucks located at the loadout pads. The pump control panel is located adjacent to the loadout pad to allow the tanker truck driver to turn the pump on and off when required.

### Leachate Tank System Controls

The leachate tanks are configured with five different indicators that either indicate tank or pump operational problems (see Appendix A1 and A2). The following alarms are indicated at the LST 1 and LST 2 control panels;

- Tank High Level (“High Level” light on control panel), which is initiated when the tank reaches eighty percent of its volume.
- Liquid detected in the outer tank (“Leachate Detected” light on the control panel).
- Liquid accumulating in the rectangular containment chamber which could indicate a leak in one of the pipes going to the tank (“Containment Chamber Leak” light on the control panel), which is initiated when containment chamber has approximately 8-inches of liquid in it.
- Pump seal is leaking (“Seal Fail” light on the control panel).
- Pump over temperature (“Overtemp” light on the control panel).

Each of the submersible pumps is equipped with a control and status device referred to as “CAS”. The “CAS” is a device that monitors the pump operating temperature for a high temperature condition (“Overtemp” and monitors moisture within the pump casing to determine if the pump seal is leaking (“Seal Fail”). The submersible pumps will automatically shut off in the event an over temperature condition is detected. Once the temperature has decreased, the pump can be restarted after depressing the “CAS Reset” button.

A control interlock between LST 1 and LCS 1 or LST 2 and LCS 2 have been installed to automatically shut off the sump pumps and /or will not start if a high level condition exists at LST 1 and LST 2.

LST 1 and LST 2 are also equipped with an autodialer that is programmed to call the list of phone numbers in Appendix A1 and Appendix A2 in the event a problem is detected with the liquid level inside LST 1 and LST 2 or the secondary containment system for each tank.

- Autodialer Telephone Number; 496-5345
- Alarm conditions that are transmitted via the autodialer;
  - “Alert Condition 1” = Leachate Collection Sump High Level
  - “Alert Condition 2” = Liquid Detected in the outer tank of the double walled tank Sump
  - “Alert Condition 3” = Leachate Tank High Level
  - “Alert Condition 4” = Liquid Detected in Rectangular Containment Chamber
  - Power Failure
- If called by autodialer, acknowledge receipt of message by entering "555" on a touch tone phone.

Instructions for the operation and maintenance of the Phonetics, Inc. Model 1104 autodialer are included in Appendix K.

### Leachate Tank Pump Operation

Each of the leachate tanks are operated in the following order during routine tanker truck filling;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the flare building must be in the “On” position. Note: both disconnect switch and circuit breaker should normally be in the “On” position.
- Connect hose from loadout pad discharge to tank truck.
- Open tank truck valve.
- Verify that the control panel “Main Circuit Breaker” switch is in the “On” position.
- Record initial leachate level, date and time on form in Appendix B3i.
- Open valve at loadout pad discharge.

- Turn Pump #1 or #2 “On-Off” switch to the “On” position. Note; if leachate tank level is low, pump will not operate.
- When tank truck is full, turn Pump #1 or #2 “On-Off” switch to the “Off” position. Note: If the pump shuts off automatically due to low level in the tank, turn Pump #1/ or #2 “On-Off” switch to the “Off” position and proceed with the steps below. Failure to turn the pump “On-Off” switch to the “Off” position could result in accidental discharge of leachate since the pump would automatically turn back on when the low tank level condition was eliminated.
- Close tank truck valve.
- Drain hose back to loadout pad discharge.
- Disconnect hose from tank truck.
- Close valve at loadout pad discharge.
- Record final leachate level, after pumping, on form in Appendix B3i.

During normal operations, the onsite tank trucks will transport all of the generated leachate to the designated wastewater treatment facility. Additional tank trucks will only be used when either of the tanks exceed their designated high level. The additional trucks will be used until the volume can be consistently maintained below the tanks high level.

### Leachate Tank Inspections

Inspection of the leachate storage tanks consists of daily, weekly, monthly and semi-annual activities, which are listed in Appendix B3c through B3f. Daily inspection of the tanks involves checking and recording the current leachate level (form in Appendix B3c). The leachate levels are estimated by lowering a water meter into the tanks and recording the measurement from the top of the riser to the level of liquid within the tanks. This measurement can then be correlated to charts provided in Appendix A-1 and A-2 for each tank to estimate the stored gallons of leachate. The weekly inspection involves monitoring of the dual contained inlet and outlet piping for any signs of leakage, monitoring of the interstitial space sensor and checking of the cathodic protection terminals to ensure that the wiring and terminals are in good working order

(form in Appendix B3d). Each month, the autodialer, high level and containment chamber alarms will be checked to ensure proper functioning (form in Appendix B3e). The semi-annual inspection will involve testing the cathodic protection systems and monitoring the interstitial space by checking the functionality of the leak detection sensor (form in Appendix B3f). The leak detection sensor will be checked by removing it from the tank and subjecting it to water, an alarm will be produced from this action if the sensor is in good working condition.

The cathodic protection testing instructions for LST 1 and LST 2 are as follows;

1. Inspect equipment and accessories to ensure that they are free from any damage.
2. Twenty-four hours prior to use, remove the porous plug and fill the electrode body with distilled water-until it is at least three-fourths full. Replace the porous plug and tighten securely. Note: To avoid contamination and resultant erroneous readings, always be sure to use distilled water.
3. Allow the copper sulfate solution to saturate-the porous plug overnight. The reference electrode or half-cell, as it is commonly called, is an integral part of the equipment.
4. Verify the cathodic protection on the S.T.I.-P3 tank as described below.
  - Remove the manhole cover exposing the PP2 terminal.
  - To setup the meter, connect the black test wire to the port marked “COM”. Connect the red test wire to the port marked “FREQ”. Turn the dial of the meter clockwise to the DCV2 setting. The display screen should show a decimal point and three zeros (.000).
  - Connect the positive pole (red test lead) of the meter to the PP2 test terminal. If a PP2 test terminal is not available, the inside metal surface of the steel tank can be used for terminal location by connecting a wire to a nail driven through the bottom of a wooden gauge stick and lower the stick through the tank's fill pipe.
  - Connect the negative pole (the black test lead) of the meter to the copper/copper sulfate half cell (reference electrode).

- Remove the protective cap from the base of the reference electrode (copper/copper sulfate half cell) and place the porous plug in the earth around the tank. Typically, earth can be contacted through the submersible pump or fill manhole. For best results, place the half cell adjacent to the tank. Note: Readings can be taken through soil, sand or gravel. The application of water onto the earth will assist in obtaining accurate readings. The placement of the reference electrode onto concrete or asphalt may give false, inaccurate readings.
- The meter should read more negative than -850 millivolts or -0.85 volts. This voltage reading indicates the tank is properly protected. Reference the National Association of Corrosion Engineers' Recommended Practice of Corrosion Control for Underground Storage Tank Systems, RP-02-85, for additional information and cathodic protection criteria.
- This reading should be taken at time of installation and every 6 months thereafter for the life of the installation. The PP2 test terminal will be inspected weekly to ensure wiring and connectors are in good repair.
- If the voltage level falls below -850 millivolts or if the voltage level fluctuates significantly, this may indicate poor reference cell contact with the earth. Repositioning the reference cell in several locations around the tank may be necessary to get a true indication of cathodic protection levels. If the level is more negative than -1.800 volts, contact the Steel Tank Institute or the local STI-P3 supplier. Typically new tanks with zinc anodes will exhibit a potential of -1.100 volts and tanks with magnesium anodes will exhibit a potential near -1.650 volts.

Refer to Sections 5 and 6 of Appendix A6, R-972-01, Recommended Practice for the Addition of Supplemental Anodes to STI-P3 UST's for more information on reference electrode maintenance and cathodic protection testing.

### Leachate Loadout Pad Inspection

Prior to every use, the loadout pad drain will be checked to ensure that if a spill were to occur the pipe will allow flow back to the storage tank. On an annual basis, the leachate loadout pads for LST 1 and LST 2 will be checked to ensure proper functioning (form in Appendix B3g). The

concrete will be assessed for cracks and deterioration, the sump will be assessed for operational grate, cracks and deterioration and the drain pipe will be checked for any clogging.

### Leachate System Alarm Procedures

In the event that an alarm has been activated, the facility operations manager will initiate a log stating the date, time, which alarm has been activated and the subsequent repair to deactivate the alarm (form in Appendix B3h). In the following section, each alarm that has been provided in either leachate system 1 or 2 will be listed.

1. High Level Sump Alarm (light/horn at the LCS 1 or LCS 2 control panel in conjunction with “Alert Condition 1” sent via the Autodialer).
2. Leachate Detected in the interstitial space of the double walled tank (light on control panel in conjunction with “Alert Condition 2” sent via the Autodialer).
3. High Level Tank Alarm (light on control panel in conjunction with “Alert Condition 3” sent via the Autodialer).
4. Liquid Detected in the Rectangular Containment (light on control panel in conjunction with “Alert Condition 4” sent via the Autodialer).
5. Pump seal is leaking (“Seal Fail” light on the control panel).
6. Pump over temperature (“Overtemp” light on the control panel).

The alarms that are sent via the Autodialer are sent to four separate phone numbers as listed in Appendices A1 and A2, the Autodialer will phone each number waiting for an acknowledgement. The landfill personnel that acknowledges the alarm will immediately go to the source of the alarm to begin trouble shooting the problem and determining what repairs are required.

### **11.2.3 Leachate System 3/4**

As shown on Figure 16, leachate generated along the south and western sides of the existing facility is collected in perforated drain pipes which slope to two solid drain pipes which gravity drain into leachate storage tank 3 and 4 (LST 3/4). The tank is dual contained and has been equipped with two submersible pumps, level controls, leak detection monitoring system and cathodic protection monitoring test station. The submersible pumps located within the tanks allow for leachate to be transferred to a tanker truck for off-site disposal. The tanker trucks are filled on a concrete loadout pad, which has been constructed adjacent to the storage tank.

Currently a 6 inch, SDR-17, double walled HDPE pipe was installed connecting LCS 5 to section 4 of LST 3/4. Leachate is pumped manually from LCS 5 to section 4 of LST 3/4 as described under the discussion regarding LCS 5 below.

In the event of a power failure, the tanks will be manually checked for leachate levels and since the pumps are equipped with hydraulic and not electric pumps, leachate can continue to be removed with out the use of electricity.

### **Leachate Storage Tank No. 3 and No. 4 Operation**

The leachate storage tank was manufactured by Highland Tank and Manufacturing Company. Tank drawings and information are provided in Appendix A3. LST 3/4 is a double-wall, S.T.I. P-3 steel underground storage tanks with fiberglass reinforced polyester resin coating for corrosion resistance. LST 3/4 has a 25,000-gallon capacity, the tank is equipped with a center baffle set at eighty percent of the total volume. This allows the tank to act as two separate tanks, each with 10,000 gallon capacities. The design allows total amounts of leachate, which previously flowed into each of the existing tanks at locations 3 and 4 to flow into the respective locations in the new LST 3/4 and continue to be monitored separately. The tank has an interstitial space with a leak detection monitoring system to allow continuous monitoring of the entire interstice for the life of the tanks, and sacrificial anodes have been attached on each end of the LST 3/4 for corrosion protection (see Appendix A5).

A hydraulic pump is located on each side of the tank baffle wall, which transfers the leachate from the tank to the tanker trucks located at the loadout pad. Flexible discharge piping has been installed from the pumps to the manway covers. Quick disconnect couplings are located on top of the manways for connection to leachate tanker hoses.

### **Leachate Tank System Controls**

The leachate tank is equipped with an OMNTEC ELP21LU2 control unit that monitors the liquid high level in the tank and the presence of any liquid in the interstitial space between the primary and secondary containment tank.

- Tank High Level (“High Level” light on control panel), which is initiated when the tank reaches eighty percent of its total volume

- Liquid detected in the outer tank (“Leachate Detected” light on the control panel)

### Leachate Tank Pump Operation

Either half of the leachate tank is operated in the following order during routine tanker truck filling;

- Connect hose from manway cover to tank truck.
- Open tank truck valve.
- Record initial leachate level, date and time on form in Appendix B3i.
- Open valve at loadout pad discharge.
- Connect the hydraulic pump to the designated landfill equipment, which has been modified to run the pumps.
- Start the hydraulic pump.
- When tank truck is full, turn off the hydraulic pump. Note: check the tank level during pumping, the tank may be emptied prior to filling the tank truck.
- Close tank truck valve.
- Drain hose back to loadout pad discharge.
- Disconnect hose from tank truck.
- Close valve at loadout pad discharge.
- Record final leachate level, after pumping, on form in Appendix B3i.

During normal operations, the onsite tank trucks will transport all of the generated leachate to the designated wastewater treatment facility. Additional tank trucks will only be used when the

tank exceeds its designated high level. The additional trucks will be used until the volume can be consistently maintained below the tank high level.

### Leachate Tank Inspections

Inspection of the leachate storage tanks consists of daily, weekly, monthly and semi-annual activities, which are listed in Appendix B3c through B3f. Daily inspection of the tanks involves checking and recording the current leachate level (form in Appendix B3c). The leachate levels are estimated by lowering a water meter into each side of the tank and recording the measurement from the top of the riser to the level of liquid within the tank. This measurement can then be correlated to charts provided in Appendix A-3 for each tank to estimate the stored gallons of leachate. The weekly inspection involves monitoring of the dual contained inlet and outlet piping for any signs of leakage, monitoring of the interstitial space sensor and checking of the cathodic protection terminals to ensure that the wiring and terminals are in good working order (form in Appendix B3d). Each month, the high level alarm will be checked to ensure proper functioning (form in Appendix B3e). The semi annual inspection will involve testing the cathodic protection systems and monitoring the interstitial space by checking the functionality of the leak detection sensor (form in Appendix B3f). The leak detection sensor will be checked by removing it from the tank and subjecting it to water, an alarm will be produced from this action if the sensor is in good working condition.

The cathodic protection testing instructions for LST 3/4 is as follows;

1. Inspect equipment and accessories to ensure that they are free from any damage.
2. Verify the cathodic protection on the S.T.I.-P3 tank as described below.
  - Remove the cover exposing the PP4 terminal.
  - Connect the COREXCO-STI Model PP44 Cathodic Protection System Test Meter to the terminal.
  - The meter should read more negative than -850 millivolts or -0.85 volts. This voltage reading indicates the tank is properly protected. Reference the National Association of Corrosion Engineers' Recommended Practice of Corrosion Control for Underground Storage Tank Systems, RP-02-85, for additional information and cathodic protection criteria.

- This reading should be taken at time of installation and every 6 months thereafter for the life of the installation. The PP4 test terminal will be inspected weekly to ensure wiring and connectors are in good repair.
- If the voltage level falls below -850 millivolts or if the voltage level fluctuates significantly, this may indicate poor reference cell contact with the earth. Repositioning the reference cell in several locations around the tank may be necessary to get a true indication of cathodic protection levels. If the level is more negative than -1.800 volts, contact the Steel Tank Institute or the local STI-P3 supplier. Typically new tanks with zinc anodes will exhibit a potential of -1.100 volts and tanks with magnesium anodes will exhibit a potential near -1.650 volts.

Refer to Section 6 of Appendix A6, R-972-01, Recommended Practice for the Addition of Supplemental Anodes to STI-P3 UST's for more information on reference electrode maintenance and cathodic protection testing.

#### Leachate Loadout Pad Inspection

Prior to every use, the loadout pad drain will be checked to ensure that if a spill were to occur the pipe will allow flow back to the storage pipe. On an annual basis, the leachate loadout pad for LST 3/4 will be checked to ensure proper functioning (form in Appendix B3g). The concrete will be assessed for cracks and deterioration, the sump will be assessed for operational grate, cracks and deterioration and the drain pipe will be checked for any clogging.

#### **11.2.4 Leachate System 5**

As shown on Figure 16, leachate generated along the north and western sides of the existing facility is collected in perforated drain pipes, which slope to leachate collection sump 5 (LCS5). The sump is a concrete tank located at the floor of the landfill and has been constructed with a steel riser, which extends through the waste to the top of the existing landfill. The tank is equipped with a submersible pump and level controls. The submersible pump located within the tanks allow for leachate to be transferred to a tanker truck for off-site disposal.

Currently a 6 inch, SDR-17, double walled HDPE pipe was installed connecting LCS 5 to section 4 of LST 3/4. Leachate is now pumped manually from LCS 5 to section 4 of LST 3/4 as described under the discussion regarding LCS 5 below.

In the event of a power failure, a gas powered portable backup generator may be installed adjacent to the riser pipe. This generator can be manually connected to the pump to allow for continued transfer of leachate to LST 3/4 if required.

### **Leachate Collection Sumps No. 5 Operation**

Leachate Collection Sump 5 (LCS 5) is a 6,600 gallon reinforced rectangular concrete tank with approximate outside dimensions of 20 feet long by 17 feet wide by 10 feet high. The collection sump is equipped with an EPG VSDPT 17-6 vertical sump drainer. The pump and associated level probes are located inside the sump and can be removed through the steel riser pipe. The pump control panel is located adjacent to the steel riser. The pump is sized to pump approximately 100 gpm at 165 feet of total head.

#### Leachate Sump Pumping System Control/Operation

The leachate sump pump is configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high-level probe (see Appendix A4) which are also described below;

- Low Level Alarm: initiated by a low-level conductance probe and is activated when the liquid level in the sump has a level of 8-inches and will deactivate when the liquid level in the sump reaches a level of 9 inches.
- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the sump. This is activated when the sump has a liquid level of 10-inches.
- Pump-On: initiated by a high-level conductance probe located in the leachate sump and interlocked to the pump starter in the pump control panel. This is activated when the liquid level in the sump has a level of 40-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing

the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. The alarm is activated when the liquid level in the sump has a level of 53-inches and will deactivate when the sump drops to a liquid level of 52-inches.

It should be noted that the pump will only be operated in manual mode and will not be placed in automatic mode, therefore only the high level and low level alarms probes will be used to monitor the sump. This is due to the present operational condition where leachate is transferred from LCS 5 to LST 3/4, as described below.

### Leachate Sump Pump Operation

Leachate from LCS 5 is transferred to LST 3/4 via a 6 inch, SDR-17, double walled HDPE pipe connected to section 4 of LST 3/4 (see Figure 16 for location). Leachate is pumped from LCS 5 to section 4 of LST 3/4 as follows:

- Pump section 4 of LST 3/4 in accordance with the procedure described in the operations section for LST 3/4 to remove leachate before transferring leachate from LCS 5.
- In order to transfer leachate from LCS 5 to LST 3/4, place the leachate pump control switch to the “Manual” mode. Observe the liquid level indicator during the transfer operation and stop pumping when the liquid level indicator reads zero.
- Leachate is pumped from section 4 of LST 3/4 as needed.

LST 3/4 has a total capacity of approximately 25,000 gallons. Given that tank has a baffle to divide the tank into two equal sections (sections 3 and 4) of approximately 12,500 gallons, section 4 of LST 3/4 will hold the entire contents of LCS 5.

### Leachate Sump Inspections

Inspection of the leachate collection sump consists of daily, weekly and monthly activities, which are listed in Appendix B3c through B3e. Daily inspection of the tanks involves checking and recording the current leachate level (form in Appendix B3c). The leachate level is based on recording the measured liquid level as indicated on the digital readout. This measurement can then be correlated to charts provided in Appendix A-4 for the sump to estimate the stored gallons of leachate. The weekly inspection involves monitoring of the dual contained outlet piping for

any signs of leakage (form in Appendix B3d). Each month, the high level alarm will be checked to ensure proper functioning (form in Appendix B3e).

### **11.2.5 Gas Condensate Knockout Tank**

As shown on Figure 16, condensate generated in the gas header system can be discharged at three locations. Two of the condensate knockouts drain liquid directly into either LST 1 or LST 2. The third condensate knockout consists of a tank, which collects liquid from the gas header just prior to the gas entering the flare. The tank is dual contained and has been equipped with level controls and a leak detection monitoring system. Condensate drains into the tank via a 4” HDPE discharge pipe from both the incoming header and the flare knockout pot.

#### **Condensate Knockout Tank Operation**

The knockout tank is a double-wall, fiberglass tank with a 600-gallon capacity. The tank has an interstitial space with a leak detection monitoring system to allow continuous monitoring of the entire interstice for the life of the tank.

#### Condensate Knockout Tank System Controls

The condensate knockout tank is equipped with an OMNTEC ELP21LU2 control unit that monitors the liquid high level in the tank and the presence of any liquid in the interstitial space between the primary and secondary containment tank.

- Tank High Level (“High Level” light on control panel), which is initiated when the tank reaches eighty percent of its total volume
- Liquid detected in the outer tank (“Leachate Detected” light on the control panel)

#### Condensate Knockout Tank Pump Operation

The condensate knockout tank is operated in the following order during routine tanker truck filling;

- Set up portable pump adjacent to the manway.
- Connect vacuum pump to suction pipe, located within the 24-inch diameter manway.
- Connect discharge hose to the tanker.

- Open the tank truck valve.
- Record initial leachate level, date and time on form in Appendix B3i.
- Start the portable pump.
- When the condensate tank is empty, turn off the pump.
- Close tank truck valve.
- Disconnect hose from tank truck.
- Drain discharge and suction hoses back into the tank.
- Record final leachate level, after pumping, on form in Appendix B3i.

During normal operations, the condensate knockout tank is pumped upon reaching the designated high level.

### Condensate Knockout Tank Inspections

Inspection of the condensate knockout tank consists of daily, weekly, monthly and semi-annual activities, which are listed in Appendix B3c through B3f. Daily inspection of the tanks involves checking and recording the current liquid level (form in Appendix B3c). The leachate levels are estimated by lowering a water meter into the tank and recording the measurement from the top of the riser to the level of liquid within the tank. This measurement can then be correlated to charts provided in Appendix A-5 for the tank to estimate the stored gallons of liquid. The weekly inspection involves monitoring of the dual contained outlet piping for any signs of leakage and monitoring of the interstitial sensor (form in Appendix B3d). Each month, the high level alarm will be checked to ensure proper functioning (form in Appendix B3e). The semi annual inspection will involve monitoring the interstitial space by checking the functionality of the leak detection sensor (form in Appendix B3f). The leak detection sensor will be checked by removing it from the tank and subjecting it to water, an alarm will be produced from this action if the sensor is in good working condition.

### **11.2.6 Routine Maintenance**

A schedule for the routine semi-annual flushing and inspection of the leachate collection and removal system has been established to maintain the operational efficiency of the system. Portions of the older leachate collection system at the landfill do not have a means of access and are not maintained in accordance with this program. The leachate collection and transfer pipes are cleaned a minimum of twice annually. The cleaning will consist of inserting a power washer hose into the pipe with sufficient pressure and volume to remove accumulated sediment and biological growth. Written documentation of the cleaning shall be submitted to the NYSDEC RSME within 30 days of completion of the cleaning. The on-site monitor must be given a minimum of 5 days notice prior to the cleaning.

Routine video inspection will not be required by the NYSDEC, however in the event that a video inspection is deemed necessary, the accessible portions of all the leachate collection and transfer lines will be videoed as requested by the NYSDEC. The requested video inspections shall be recorded and maintained on file at the landfill. A written summary of the inspection shall be submitted to the NYSDEC RSME within 30 days following completion of the video inspection. The on-site monitor must be given a minimum of 5 days notice prior to the performing the video inspection.

Annually, the existing leachate storage tanks, sumps and condensate knockout tank will be emptied for cleaning and maintenance. Notification is to be provided to the NYSDEC on-site monitor a minimum of 5 days before the planned cleaning activities. The cleaning will consist of inserting a power washer hose (utilized for cleaning leachate lines) down the riser and into the leachate tanks or sump. The washer head (when in operation) will be manually moved around in the risers to agitate sediment buildup on the bottom of the tanks or sumps. This operation will be performed for approximately fifteen (15) minutes. Following agitation, the liquid and solids will be pumped or vacuumed into leachate transfer vehicles for transport to a permitted treatment plant. This cycle of washing and vacuuming will continue until all of the sediments have been removed. Written documentation of the tank cleanings shall be submitted to the NYSDEC RSME within 30 days of the completion of the cleanings.

Additionally the leachate loadout pads will be maintained on an annual basis by performing the following. The pad and sumps will be pressure washed and vacuumed, the drain pipes will also be pressure washed to ensure no blockages and the concrete portions of the pad and sump will be sealed to prevent corrosion of the concrete surfaces.

Included in Appendix B3j are typical routine maintenance forms for pipe cleaning and videoing, tank and sump cleaning and loadout pad cleaning.

## **11.3 Proposed Leachate Collection, Transmission and Storage System**

### **11.3.1 Introduction**

The proposed expansion to the Chaffee Landfill leachate collection, transmission and storage system is designed to collect and store leachate generated from the landfill in a manner that limits impacts to public health and the environment. Due to the fact that the operation of the landfill includes limiting the size of the working face, smaller amounts of precipitation are introduced into the waste mass, which limits the generation of leachate. Limiting leachate generation is also a result of applying daily, intermediate and interim cover as required by the regulations and the installation of a NYSDEC approved final cover system at closure.

The proposed leachate collection and storage system will include the construction of several components to collect, transmit and store leachate. Each cell will consist of both a primary and secondary leachate collection system. The transmission system will transmit leachate from each of the primary and secondary leachate collection systems through dual contained piping to the leachate storage tanks. The leachate storage system will consist of a two primary storage tanks placed within a secondary containment tank, also included will be a control vault and leachate loadout building.

As part of the proposed landfill expansion, leachate collection and transmission for existing LST 3/4 and LCS 5 will be modified to allow for continued use. LST 3/4 will be removed and replaced with a dual contained manhole to allow for collection and pumping into the proposed transmission system. LCS 5 will be refitted with a new pump and controls and will also be connected into the proposed transmission system. The procedures described in section 11.2 will be followed until the tanks have been modified to operate as discussed in this section.

The following sections of this Operations and Maintenance manual will discuss the proposed system as follows:

- Leachate Collection,
- Leachate Transmission,
- Leachate Storage,
- Modifications to LST 3/4 and LCS 5, and

- Routine Maintenance.

Leachate is transported off-site by tanker trucks to a permitted wastewater treatment facility. Currently, the landfill maintains agreements with the City of Niagara Falls Wastewater Treatment Facility and the Buffalo Sewer Authority. The landfill will maintain agreements with at least two (2) treatment facilities. Copies of current Discharge Permits are included in Appendix D.

Hauling of leachate is primarily provided by Chaffee Landfill. A contract with a secondary leachate hauler, Tonawanda Tank Transport Service Inc. is maintained by the facility. A copy of the contract is included in Appendix E.

In the event of a power failure, a diesel powered backup generator will be located adjacent to the leachate loadout building. This generator will be installed to automatically start upon a loss of power, it will be sized to handle operating the entire leachate collection system including temporary lights at the tank area, in the control vault and leachate loadout building. If a power failure occurs, an autodialer will be installed as part of the leachate system to transmit a power failure message to a list of site personnel. The receipt of this message will allow site personnel to know that the generator has started and that it must be maintained during its operation.

### **11.3.2 Leachate Collection System**

The proposed expansion to the Chaffee Landfill will include construction of its own leachate collection system as shown on Figure 17. As discussed previously, a primary leachate collection system and secondary leachate collection system will be constructed within each cell. Each of these systems will allow liquid to flow by gravity to a sump in the landfill, and then pumped out of the landfill and into the transmission and storage systems.

The primary leachate collection pumps will consist of an EPG wheeled sump drainer, model WSD12-2 and be installed into an 18-inch HDPE sideslope riser. Associated flow meters and valves will also be installed within each of the sideslope risers. The riser pipe will allow for the pumps to be removed for repair and replacement if necessary. The primary pumps are sized to remove 65 gpm at 36 feet of total head.

The secondary leachate collection pumps will consist of an EPG wheeled sump drainer, model WSD2-2 and be installed into a 12-inch HDPE sideslope riser. Associated flow meters and valves will also be installed within each of the sideslope risers. The riser pipe will allow for the

pumps to be removed for repair and replacement if necessary. The secondary pumps are sized to remove 12 gpm at 26 feet of total head.

### Leachate Sump Pumping System Control/Operation

Both the primary and secondary leachate collection pumps will be configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the sump. This is activated when either of the sumps has a liquid level of 12-inches.
- Pump-On: initiated by a high-level conductance probe located in the leachate sump and interlocked to the pump starter in the pump control panel. This is activated when the either of the sumps has a liquid level of 24-inches. The exception is that the overliner secondary sumps will be activated at a liquid level of 15-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. This alarm is activated when either of the liquid levels in the sumps reaches a level of 30-inches and will deactivate when the liquid level in the sump drops to a level of 29-inches. The exception is that the overliner secondary pumps will be activated when the liquid level is 18-inches and will deactivate when the liquid level in the sump drops to a level of 17-inches.
- Interlock feature to shut down sump pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between the primary storage tanks and all of the primary and secondary leachate sumps will be installed to automatically shut off the sump pumps and / or will not start if a high liquid level condition exists at storage tanks.

An Autodialer will also be installed as part of the storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the sump occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The leachate sump pumps are operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the “On” position. Note; both disconnect switch and circuit breaker should normally be in the “On” position.
- Sump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the sump reaches the "pump on" level probe, and turns off automatically when the leachate level in the sump reaches the "pump off" level probe.
- Typically the sump would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the sump level probes.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

### Leachate Sump Pumping System Inspection

Inspection of the leachate collection sumps consists of daily and monthly activities and are listed in Appendix B3c and B3e. Once a day, the flow meters for each of the primary and secondary sumps will be read and the amount of leachate generated by each system will be recorded on the form in Appendix B3c. Each month, the high level alarm and flow meters for every sump will be checked to ensure proper functioning (form in Appendix B3e).

### **11.3.3 Leachate Transmission System**

The proposed transmission system will be constructed as a dual contained HDPE pipe system, which flows by gravity to the control vault located adjacent to the storage tank and as shown on Engineering Drawings 23 and 24. From the control vault, the leachate can be directed to either of the storage tanks or directly to the loadout pad, the following discusses the operation of the control vault and transmission system. At several locations along the transmission line, both cleanouts and secondary containment monitoring points will be installed to allow for routine inspection and maintenance.

### Leachate Transmission System Control/Operation

Control of the leachate transmission system is provided at either the sump pumps or control vault. In the event that the transmission system needs to be repaired or maintained, the following procedure will be followed;

- Each sump pump will be manually turned off;
- The valve in the control vault will be closed to isolate the transmission piping;
- Leachate remaining in the system will be pumped out at an elevation above the highest liquid level in the pipe; and
- The required maintenance (i.e., pipe cleaning) or repair will be completed.

In the event that the leachate transmission pipe needs to be replaced and will remain out of service for more than 24-hours or cause leachate on the primary liner to exceed the 1-foot of head, a temporary leachate transmission system will be installed.

### Leachate Transmission System Inspection

Inspection of the leachate transmission system consists of weekly activities that are listed in Appendix B3d. The weekly inspection involves monitoring of the secondary containment ports for any signs of leakage (form in Appendix B3d).

#### **11.3.4 Leachate Storage Tank System**

The storage tanks are proposed as two 56-foot diameter by 23-feet high (405,366 gallons each) steel glass lined tanks located within a 154-foot diameter by 7-foot high (975,410 gallons) steel glass lined tank. The outer tank system provides the required secondary containment for both primary tanks in the event a failure occurs.

As stated above, the transmission lines are routed through a control vault located within the secondary containment tank, this vault contains all of the valves required to control leachate flow into or out of the tanks. The vault also contains the transfer pump and motor for the loadout pad and a sump pump to control small spills that occur on the loadout pad or within the secondary containment tank. The transfer pump has been designed as a Cornell 4NNTL 1800 rpm pump

with 8.25-inch 10 degree impeller and 7.5 hp motor. This pump has been designed to remove 290 gpm at 58 feet of total head. The pump controls will be located at the loadout pad, to allow the operator filling the tank trucks to turn off the pump in the event an emergency occurs.

As discussed in Section 6.0, landfill cells will be opened in 3.5-acre areas. The leachate levels in the proposed above ground storage tanks will be maintained at approximately 20 percent of the total volume to contain the 25-year, 24-hour storm during the opening of each 3.5-acre area. When the tank volume reaches 20 percent of the total volume, additional tank trucks will be used until the tank volume returns to 20 percent. During normal operation, where all operating cells are sufficiently covered with waste, additional tank trucks will be used when either of the tanks exceed their designated high level. The additional trucks will be used until the volume can be consistently maintained below the tanks high level. As was shown in Appendix C of the Engineering Report (Part IV of this submittal), the on site tank trucks (one 6000 gallon and one 7000 gallon) can transport approximately 261,000 gallons per week (approximately 20 loads per truck) and if required, the site has discharge permits for 396,000 gallons per week, which would require the use of additional tank trucks.

The secondary containment tank will be constructed with a sloped concrete floor to allow for liquid to flow to the center of the tank, where a sump is located. During normal operations, the piping leading from this sump to the vault sump pump will remain closed, and any collected stormwater will be discharged into the perimeter swale around the tank via a 2" portable construction pump located on the roof of the control vault. The storm water will be removed daily and after all rain events (see form in Appendix B31). As noted on the form, a visual confirmation of the water indicating that it is not contaminated with leachate must be made each time prior to discharging the stormwater. In the case of a small spill or over flow that occurs within the secondary tank, the sump piping will be allowed to discharge the liquid to the vault sump pump, which will then pump the liquid back into the tanks. If either of the primary tanks begins to have severe leakage or a failure occurs, the leachate will be stored in the secondary containment system for subsequent removal. After removing any quantity of leachate from within the secondary containment tank, the entire floor and sump shall be washed and rinsed prior to collecting and discharging the subsequent storm event.

### Leachate Tank System Controls

The leachate tanks are configured with five different indicators that either indicate tank or pump operational problems. The following alarms are indicated at the tank and pump control panels located within the leachate loadout building;

- Tank High Level (“High Level” light on control panel), which is initiated when either of the tanks reaches seventy-five percent of its volume.
- Liquid detected in the secondary containment tank (“Leachate Detected” light on the control panel), which is initiated when the secondary containment tanks has over 12-inches of liquid in it.
- Liquid accumulating in control vault which could indicate a leak in one of the pipes going to the tank (“Control Vault Leak” light on the control panel), which is initiated when the sump in the control vault has approximately 18-inches of liquid in it.
- Pump seal is leaking (“Seal Fail” light on the control panel).
- Pump over temperature (“Overtemp” light on the control panel).

The transfer pump will be equipped with a control and status device referred to as “CAS”. The “CAS” is a device that monitors the pump operating temperature for a high temperature condition (“Overtemp” and monitors moisture within the pump casing to determine if the pump seal is leaking (“Seal Fail”). The transfer pumps will automatically shut off in the event an over temperature condition is detected. Once the temperature has decreased, the pump can be restarted after depressing the “CAS Reset” button.

As stated above a control interlock between the primary storage tanks and all of the primary and secondary leachate sumps will be installed to automatically shut off the sump pumps and / or will not start if a high level condition exists at storage tanks.

The storage tank system is also equipped with an autodialer that is programmed to call a list of employee phone numbers in the event a problem is detected with the liquid level inside the storage tanks, secondary containment system, control vault sump, or any of the primary and secondary leachate collection sumps. The following alarm conditions will be transmitted via the autodialer.

- “Alert Condition 1” = Leachate Collection Sump High Level, autodialer will transmit which cell and whether it is the primary or secondary system.

- “Alert Condition 2” = Liquid Detected in the secondary containment tank of the leachate storage system
- “Alert Condition 3” = Leachate Tank High Level
- “Alert Condition 4” = Liquid Detected in Control Vault Sump
- Power Failure

### Leachate Tank Pump Operation

The leachate tanks are operated in the following order during routine tanker truck filling;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the “On” position. Note: both disconnect switch and circuit breaker should normally be in the “On” position.
- Pull tanker truck under the loadout arm.
- Open tank truck lid.
- Verify that the control panel “Main Circuit Breaker” switch is in the “On” position.
- Be sure that the inlet and outlet valves for the transfer pump are in the open position.
- Ensure that the tank valves are open or in the correct position to enable the required pumping.
- Record initial leachate level, date and time on form in Appendix B3i.
- Open valve at loadout pad discharge.
- Turn Transfer Pump “On-Off” switch to the “On” position.
- When tank truck is full, turn Transfer Pump “On-Off” switch to the “Off” position. Note: If the pump shuts off automatically due to low level in the tank, turn Transfer Pump “On-Off” switch to the “Off” position and proceed with the steps below. Failure to turn the pump “On-Off” switch to the “Off” position could result in accidental discharge of

leachate since the pump would automatically turn back on when the low tank level condition was eliminated.

- Allow loadout arm to drain.
- Close tank truck lid.
- Close valve at loadout pad discharge.
- Record final leachate level after pumping on form in Appendix B3i.

### Leachate Tank Inspections

Inspection of the leachate storage tanks consists of daily, weekly, monthly and annual activities, which are listed in Appendix B3c through B3e and B3g. Daily inspection of the tanks involves checking and recording the current leachate level (form in Appendix B3c) and removing stormwater from within the secondary containment tank. The leachate level within each of the tanks will be based upon a digital readout. The weekly inspection involves monitoring of the dual contained inlet and outlet piping in the control vault for any signs of leakage, monitoring of each of the primary tanks for any signs of leakage and verifying the digital tank level with an actual tank measurement (form in Appendix B3d). Each month, the autodialer, high level, secondary containment and control vault alarms will be checked to ensure proper functioning (form in Appendix B3e). On an annual basis, each of the valves and pipes located within the control vault will be inspected and all of the sensors and alarms will be checked. The control vault concrete will be assessed for cracks and deterioration, the sump will be assessed for cracks and deterioration, the sump pump will be checked and the drain pipes will be assessed for any clogging (form in Appendix B3g).

### Leachate Loadout Pad Inspection

Prior to every use, the loadout pad drain valve will be checked to ensure that it is in the closed position, the pad has been designed to contain an entire tanker truck spill. On an annual basis, the leachate loadout pad will be checked to ensure proper functioning, including piping and valves. The concrete will be assessed for cracks and deterioration, the sump will be checked for operational grate, cracks and deterioration and the drain pipe will be checked for any clogging (form in Appendix B3g).

### Secondary Tank Floor Inspection

On an annual basis, the secondary containment tank floor will be checked to ensure proper functioning. The concrete will be assessed for cracks and deterioration, the sump will be checked for operational grate, cracks and deterioration and the drain pipe will be checked for any clogging (form in Appendix B3g).

### Leachate Tank System Alarm Procedures

In the event that an alarm has been activated, the facility operations manager will initiate a log stating the date, time, which alarm has been activated and the subsequent repair to deactivate the alarm (form in Appendix B3h). In the following section, each alarm that has been provided in any portion of the leachate system will be listed.

1. High Level Sump Alarm (light/horn at any of the primary or secondary sump pump control panels in conjunction with “Alert Condition 1” sent via the Autodialer, which will transmit which cell and whether it is the primary, secondary or groundwater system).
2. Liquid Detected in the Secondary Containment Tank (light on control panel in conjunction with “Alert Condition 2” sent via the Autodialer).
3. High Level Tank Alarm (light on control panel in conjunction with “Alert Condition 3” sent via the Autodialer).
4. Liquid Detected in the Control Vault Sump (light on control panel in conjunction with “Alert Condition 4” sent via the Autodialer).
5. Pump seal is leaking (“Seal Fail” light on the control panel).
6. Pump over temperature (“Overtemp” light on the control panel).

The alarms that are sent via the Autodialer will phone each number programmed, waiting for an acknowledgement. The landfill personnel that acknowledges the alarm will immediately go to the source of the alarm to begin trouble shooting the problem and determining what repairs are required.

### 11.3.5 Modifications to LST 3/4 and LCS 5

#### Leachate Storage Tank 3/4 (LST3/4)

During construction of Cell 3 of the proposed Western Landfill Expansion, the existing LST 3/4 will be removed and replaced with a dual contained 5-foot diameter HDPE manhole as shown on sheet 26 of the Engineering Drawings. The installation of this manhole will require that the existing dual contained leachate transmission lines J and K be extended to the proposed manhole. This manhole will allow for the leachate to be pumped into the proposed transmission line and storage system, eliminating the need for a tank and loadout pad at this location. The required pump has been designed as an EPG vertical sump drainer, model VSD3-2 capable of pumping 16 gpm at 38 feet of total head.

#### Manhole Pumping System Control/Operation

The pump located within the manhole will be configured with four level probes (from bottom of manhole up); reference probe, pump off probe, pump on probe, and high level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum liquid level in the manhole. This is activated when the manhole has a liquid level of 18-inches.
- Pump-On: initiated by a high-level conductance probe located in the manhole and interlocked to the pump starter in the pump control panel. This is activated when the manhole has a liquid level of 84-inches.
- High Level Alarm Condition: Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. The alarm is activated when the manhole reaches a liquid level of 96-inches and deactivate when the liquid level drops to a level of 95-inches.
- Interlock feature to shut down pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between the primary storage tanks and the pump will be installed to automatically shut off the pump and / or will not start if a high liquid level condition exists at the storage tanks.

An Autodialer will also be installed as part of the storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the manhole occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The manhole pump is operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the "On" position. Note; both disconnect switch and circuit breaker should normally be in the "On" position.
- Pump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the manhole reaches the "pump on" level probe, and turns off automatically when the leachate level in the manhole reaches the "pump off" level probe.
- Typically the manhole would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the manhole level probes, for example.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

### Manhole Pumping System Inspection

Inspection of the replacement manhole consists of weekly, monthly and semi-annual activities, which are listed in Appendix B3d through B3f. Each week the manhole's interstitial space sensor and the dual contained inlet piping for leachate lines J and K will be monitored for any signs of leakage (form in Appendix B3d). Each month, the high level alarm and flow meter will be checked to ensure proper functioning (form in Appendix B3e). The semi annual inspection will involve testing and monitoring the interstitial space by checking the functionality of the leak detection sensor (form in Appendix B3f). The leak detection sensor will be checked by

removing it from the tank and subjecting it to water, an alarm will be produced from this action if the sensor is in good working condition.

### Leachate Collection Sump 5 (LCS 5)

During construction of cell 3 and prior to removal of existing LST 3/4, LCS 5 will be retrofitted with a new sump pump and transmission line to allow for the leachate to be pumped into the proposed transmission line and storage system as shown on sheet 16 of the Engineering Drawings. The required pump has been designed as an EPG vertical sump drainer, model VSD3-7 capable of pumping 20 gpm at 102 feet of total head. Leachate will be transferred from LCS 5 via a 6<sup>3</sup>/<sub>4</sub>" dual contained transmission line into the proposed dual contained transmission line.

### Leachate Sump Pumping System Control/Operation

The leachate sump pump will be configured with four level probes (from bottom of sump up); reference probe, pump off probe, pump on probe, and sump high-level probe, which are described below;

- Pump-Off: initiated by a low-level conductance probe interlocked to the pump starter to shut down the pump upon reaching a minimum level in the sump. This is activated when the sump has a liquid level of 18-inches.
- Pump-On: initiated by a high-level conductance probe located in the leachate sump and interlocked to the pump starter in the pump control panel. This is activated when the sump has a liquid level of 27-inches.
- High Level Alarm Condition; Initiated by a high-high point level conductance probe interlocked to an audio and visual alarm located in the pump control panel. Depressing the Acknowledge/Silence push button will silence alarm. The visual alarm light will remain energized until the alarm condition has cleared. The alarm is activated when the sump has a liquid level of 39-inches and will deactivate when the sump drops to a liquid level of 38-inches.
- Interlock feature to shut down pump based on high liquid level condition in the leachate storage tank (i.e., alarm signal relayed from Tank Control Panel).

As stated above a control interlock between the primary storage tanks and the pump will be installed to automatically shut off the pump and / or will not start if a high liquid level condition exists at the storage tanks.

An Autodialer will also be installed as part of the storage tank controls and will be formatted to send an alarm in the event that a high liquid level alarm condition in the sump occurs. The specifics of the Autodialer are discussed in the leachate storage tank operation section.

The sump pump is operated in the following manner;

- For panel and pump to operate, electric disconnect switch mounted behind the control panel and the circuit breaker in the leachate loadout building must be in the "On" position. Note; both disconnect switch and circuit breaker should normally be in the "On" position.
- Pump normally operates with Hand-Off-Auto Switch (H-0-A) switch in "Auto" position. In the "Auto" position, pump will turn on automatically when the leachate level in the manhole reaches the "pump on" level probe, and turns off automatically when the leachate level in the manhole reaches the "pump off" level probe.
- Typically the sump would only operate with the Hand-Off-Auto Switch (H-0-A) switch in the "Hand" position if there were problems with the manhole level probes, for example.
- Alarm horn can be shut off by pressing the "Alarm Silence" button. This does not eliminate the alarm condition.

### Leachate Pumping System Inspection

Inspection of the leachate collection sump consists of weekly and monthly activities, which are listed in Appendix B3d and B3e. The weekly inspection involves monitoring of the dual contained outlet piping for any signs of leakage (form in Appendix B3d). Each month, the high level alarm and flow meter will be checked to ensure proper functioning (form in Appendix B3e).

### **11.3.6 Routine Maintenance**

A schedule for the routine semi-annual flushing and inspection of the leachate collection and removal system will be established to maintain the operational efficiency of the proposed system. The leachate collection and transfer pipes will be cleaned a minimum of twice annually. The cleaning will consist of inserting a power washer hose into the pipe with sufficient pressure and volume to remove accumulated sediment and biological growth. Written documentation of the cleaning shall be submitted to the NYSDEC RSME within 30 days of completion of the cleaning. The on-site monitor must be given a minimum of 5 days notice prior to the cleaning.

In addition to the cleaning, routine video inspections of all the leachate collection and transfer lines is required by the NYSDEC, to be performed on a bi-annual basis. The video inspections shall be recorded and maintained on file at the landfill. A written summary of the inspection shall be submitted to the NYSDEC RSME within 30 days following completion of the video inspection. The on-site monitor must be given a minimum of 5 days notice prior to the performing the video inspection.

Annually, the proposed primary leachate collection sumps, leachate storage tanks and manhole will be emptied for cleaning and maintenance. Notification is to be provided to the NYSDEC on-site monitor a minimum of 5 days before the planned cleaning activities. The cleaning will consist of power washing and the interior of both primary tanks and removing any solids that have collected at the bottoms of the tanks. The proposed manhole replacing LST 3/4 will be cleaned by inserting a power washer hose (utilized for cleaning leachate lines) down the riser to the floor of the manhole. The washer head (when in operation) will be manually moved around in the manhole to agitate sediment buildup on the bottom of the manhole. This operation will be performed for approximately fifteen minutes(15) minutes. Following agitation, the liquid and solids will be pumped or vacuumed into leachate transfer vehicles for transport to a permitted treatment plant. This cycle of washing and vacuuming will continue until all of the sediments have been removed. Written documentation of the tank cleanings shall be submitted to the NYSDEC RSME within 30 days of the completion of the cleanings.

Additionally the leachate loadout pad and sump, secondary containment floor and sump and control vault interior and sump will maintained on an annual basis by performing the following. The loadout pad, secondary containment floor, control vault and their respective sumps will be pressure washed and vacuumed, the drain pipes will also be pressure washed to ensure no blockages and the concrete portions of each will be sealed to minimize deterioration of the concrete surfaces.

Included in Appendix B3k are typical routine maintenance forms for pipe cleaning and videoing, tank and sump cleaning and loadout pad cleaning.

## 12. GAS MONITORING PROGRAM

### Landfill Gas Control

Landfill gas is to be extracted from both the existing and proposed Chaffee Landfill by using the existing vertical and horizontal collection systems, the proposed vertical and horizontal collection systems and by the enclosed flare unit. The control of landfill gas is addressed in both the solid waste regulations, 6 NYCRR Part 360 as well as the federal air regulations, 40 CFR Part 60, Subpart WWW, and 40 CFR Part 63, Subpart AAAA. The Part 360 solid waste regulations control the migration of landfill gas off-site through subsoils. The federal regulations regulate the landfill emissions from the surface of the landfill as part of the New Source Performance Standards for MSW landfills.

The Part 360 regulations establish a limit for landfill concentrations not to exceed the lower explosive limit at the property boundary. The methane concentrations at the property boundary are measured through a series of landfill gas probes. The gas probes are similar to the groundwater monitoring well except the gas probe is typically installed across the seasonal low water table. The gas probes are monitored on a quarterly basis.

The 40 CFR Part 60, Subpart WWW NSPS requirements are addressed in the Gas Collection and Control System (GCCS) Plan (EarthTech, November, 2004).

Pursuant to 40 CFR Part 63, Subpart AAAA, MACT standards, WMNY has developed a Startup, Shutdown and Malfunction (SSM) Plan for the Chaffee Landfill EMCON, January, 2004) that describes in detail the procedures for operating and maintaining the landfill gas collection and control system and the continuous monitoring system (CMS) during periods of SSM.

Methane is highly explosive. In an effort to ensure that landfill gas will not create a hazard to health, safety or property, the Chaffee Landfill developed a gas monitoring program.

In accordance with 6 NYCRR Part 360-2.17(f), a monitoring program has been developed to monitor methane and other explosive gases generated by the facility. The concentration of these gases must not exceed;

1. Twenty-five percent of the lower explosive limit for gases in structures on or off-site, excluding gas control or recovery system components; and
2. The lower explosive limit for the gases at or beyond the property boundary.

A combustible gas meter is utilized on-site for the detection of landfill gases in the permanent gas probes at the landfill boundaries and all permanent onsite structures. The meter currently used is a GEM 2000 Combustible Gas Meter. The detection range of the meter is 0-100% LEL and is calibrated on a schedule recommended by the manufacturer. An instruction manual for the operation and maintenance of the GEM 2000 is included in Appendix J.

The proposed gas probes are discussed (i.e. location and construction) in the Environmental Monitoring Plan (Part IX of this submittal). Gas monitoring takes place quarterly at the landfill. More frequent monitoring may be required by the NYSDEC if landfill gas migration is detected.

If gas is detected above the levels stipulated above, Chaffee will immediately notify the NYSDEC and within seven (7) days of detection, will provide a description of the steps to be taken to protect human health. Within forty-five (45) days of detection, Chaffee will submit a plan to implement a remediation plan for the gas releases and schedule for the implementation of this plan within 60 days beyond the date of detection.

Copies of the gas monitoring forms can be found in Appendix B3b.

### Landfill Surface Scans

The surface of the landfill is required to be monitored for methane concentrations along the entire perimeter of the collection area, after installation of the collection system. The surface scans are to be performed in accordance with the GCCS Plan.

### 13. ODOR ABATEMENT/MANAGEMENT PROGRAM

#### Odor Control

The majority of the waste accepted for disposal at the Chaffee Landfill is mixed municipal solid waste (MSW). Mixed MSW has organic waste component that has the potential of being odorous if the organic component begins to decompose (rot). Loads of MSW that have set in a transfer trailer over the weekend tend to be more odorous than loads that are less than a day old. Chaffee Landfill does occasionally accept stabilized wastewater treatment plant (WWTP) sludge. However, even with stabilization in accordance with the Criteria for Sludge Stabilization for Disposal in New York State, established September 24, 2003 by the NYSDEC (see Section 8.2) the WWTP sludge might have some odor.

The Chaffee Landfill has developed a standard operating policy concerning wastes that have not been previously accepted for management at the landfill that might be odorous. Under the standard operating procedure potentially odorous waste will be taken as a “test load” where a full or partial load of the waste will be brought to the Chaffee Landfill for management. The waste is examined during the “test load” period to determine what if any special procedures will be needed to manage the waste so as to minimize any impacts due to odors. After the “test run” a determination is made as to whether or not the waste is acceptable for management at the facility.

Any potential odorous waste that is accepted for management at the Chaffee Landfill falls under the “3 strike” policy. The “3 strike” policy requires that the generator of the waste be notified whenever a waste stream emanates odors strong enough to potentially result in an odor complaint, even after all odors controls have been implemented. Acceptance of the waste stream at landfill is terminated after the third notification. Odors generated by waste material will be controlled by the application of six inches of daily cover or alternate material.

The Chaffee Facility currently has a number of procedures that are implemented on a daily basis to control odors leaving the facility. The odor control program components consist of activities, which are performed as standard operating procedures, and others, which are implemented on an as needed basis. A summary of the program follows;

- The existing landfill is equipped with a vertical and horizontal gas extraction system, which operates continually during disposal operations to minimize fugitive landfill gas and odor emissions.

- The proposed landfill will be constructed with a vertical and horizontal gas extraction system.
- Waste is covered daily with synthetic materials, soil, or other approved alternate daily cover materials.
- Additional soil cover is placed over waste if odors are not suppressed with the use of typical daily cover techniques.
- Waste materials, such as sludge, which have the potential for being particularly odorous are not accepted past 2:30 p.m. in order to avoid these materials being too close to the surface at the end of the operating day.

The landfill will apply odor control media to waste materials as needed. The odor control media, such as EcoCare Odor Control Solutions or equivalent, will be applied in accordance with the manufacturer's recommendations for odor control. At least one drum of this material will be available at the Chaffee Landfill. A copy of the odor control media product data sheet is on file with the Operations Manager.

Following application, traffic will be minimized over the area of application to limit disruption and the subsequent potential release of odors. If necessary, additional odor control media will be applied to areas that have been disturbed by construction activities.

### Report/Complaint Management

An odor complaint program has been established for the Chaffee Facility and includes the following components:

- a. Chaffee Landfill will maintain a 24-hour per day local telephone number for the receipt of landfill odor complaints from residents of the Town of Sardinia. The telephone number has been activated and is (716) 496-5000 x 271.
- b. Chaffee Landfill will notify community and government centers of the availability of the telephone number.

- c. Chaffee Landfill will log all incoming telephone calls and record the identity of the caller, including name, address and phone number and the following information if it is available from the caller; the location, nature and duration of the odor. Chaffee Landfill will record the date and time of the complaint and the meteorological conditions (including, but not limited to, wind direction and temperature).
- d. Upon receipt of the complaint, Chaffee Landfill will investigate the complaint in order to determine the source of the odor. This investigation will be performed within 24 hours of the start of the following operating day from the incoming complaint call. In making the assessment, Chaffee Landfill will consider the nature of the waste being disposed of at the landfill; landfill gas and leachate collection and transfer activities; the daily, intermediate and final cover material being used, and any other activities which may be contributing to potential off-site landfill odors.
- e. If Chaffee Landfill determines the source of the odor, it will take corrective action to mitigate the odor problem. Mitigation may include decreasing the size of the working face of the landfill; increasing the use of flares and landfill gas treatment facilities; modification of leachate collection activities; evaluation and modification, if necessary, of daily and intermediate cover materials; restriction or elimination of waste streams or operational changes associated therewith and other measures which Chaffee Landfill determines will reduce off-site impacts.
- f. The NYSDEC may require the Chaffee Landfill to modify, upgrade or expand gas collection capabilities within the landfill if of-site landfill gas odors are determined to be an offsite nuisance by the NYSDEC.
- g. Chaffee Landfill will provide a report to the NYSDEC of the complaints/reports received, information recorded from the complaint/report and the action taken or proposed. These reports will be submitted as part of the quarterly report submitted to the NYSDEC. The results of odor investigations will also be forwarded to the complainant.

## **14. WINTER AND INCLEMENT WEATHER OPERATION**

Various inclement weather conditions may affect the operation of the landfill. Some of these possible climatic conditions and associated measures that can be taken are described below.

### **14.1 Freezing Conditions**

The landfill has not experienced any problems in obtaining soil cover material due to freezing conditions. Working a wide area and staying ahead of the frost has enabled Equipment Operators to obtain soil cover material year round. Soil cover material for winter months is usually stockpiled. As a precautionary measure, stockpiling of soil cover is accomplished before the onset of the winter months. When “alternative daily cover” is used, soil cover material requirements are greatly reduced.

If icy or freezing conditions create potentially dangerous operating conditions, the Operations Manager will determine if it is necessary to either temporarily stop operations, or modify operations.

### **14.2 Snowfall**

If snowfall occurs overnight, an Equipment Operator is assigned to arrive at the site early and is responsible for snow removal. Snow removal activities will start immediately upon arrival. The available on-site equipment is adequate to remove accumulated snow from access roads and operational areas.

In the event of extremely heavy snow, the Operations Manager will decide if it is necessary to modify or temporarily suspend operations until snow removal on access roads and the disposal areas permit continued operation.

It may be determined that it is necessary to make the following modifications to operations; limiting the size of the working face; moving the working face to a protected area; cessation of non-essential earthwork, etc. If snowfall should become more severe, it may be determined that operations should be temporarily suspended. It is expected that if a snowstorm occurred that was severe enough to suspend operations at the landfill, solid waste collection activities throughout the area would also be temporarily ceased until an improvement in the weather conditions enabled reinstatement of services.

Following cessation of the storm, landfill equipment would be utilized to remove accumulated snow from access roads and operational areas, and snow banks would be arranged in a manner to promote adequate drainage when melting occurs.

### **14.3 Heavy Rains**

Control of surface water drainage by drainage swales, diversion swales, downchutes and sediment ponds, along with the use of gravel for operational haul roads, provides continued access to the site during these weather conditions.

In the case of heavy rains, the Operations Manager may determine that it is necessary to either modify operations or temporarily suspend operations until improved weather conditions allow re-establishment of operations. In the event of heavy rain, modifications to operating procedures may include; minimizing the size of the work face, modification of truck access to the working face, and cessation of non-essential earthwork.

During a heavy rainfall event, landfill personnel will regularly check culverts, and sedimentation basins for debris, which may be blocking water flow. Following a ½” rainfall event as recorded by the on-site gauge, the Operations Manager will inspect the drainage structures, daily, intermediate, interim and final cover areas for erosion. If problems are detected with any of these, a prompt repair will be made to eliminate future problems.

### **14.4 Electrical Storms**

If necessary, landfilling activities will be suspended for the duration of the storm for the safety of field personnel. Refuge should be taken in any landfill building, or in rubber-tired vehicles.

### **14.5 Windy Conditions**

Litter will be contained as close to the working area as possible. Portable fencing is currently used to control papers at the working area and is located downwind. Woven or chain-linked wire and netting are all appropriate for the purpose. Fencing is placed strategically downwind and is moved as necessary. In addition, steps will be taken to clear fences of litter before they become inundated, thus increasing their effectiveness.

Restriction of the active working area to as small an area as possible will assist in the control of litter. Small amounts of cover material can be spread on the solid waste during the on-going operation when wind presents a problem.

Picking of windblown paper and litter from trees, fences, fields, etc., is a routine part of site operations. Additional personnel are called in to manually pick up blowing litter as needed.

The Operations Manager will suspend operations when windblown litter is leaving landfill property, or when winds exceed sixty (60) miles per hour.

## **15. CONVENIENCE STATION OPERATION**

Presently the landfill provides disposal services for municipal solid waste, trash, and recyclables to the Town of Sardinia residents on the last Saturday of each month. Additionally, individuals may dispose of municipal solid waste, trash, and recyclables for a fee, during regular business hours, Monday through Friday at the convenience station located just north of the scale house. At no time are small or private vehicles allowed on the permitted landfill.

The on-site convenience station/drop off area utilized by customers shall be maintained in a clean and litter free condition. As full containers are removed, all spilled debris shall be cleaned up. The area shall be cleaned up at the end of each day. Recycled materials, including appliances, shall be removed periodically. No excessive accumulation will be permitted.

The scale operator is responsible for identifying any unacceptable waste attempted to be brought into the convenience station.

## **16. ROLL-OFF STORAGE AREA**

The roll-off storage area is located north west of the scale house and is indicated on Figure 1. The area consists of a compacted gravel area approximately 60,000 sf in size. This area allows Waste Management owned haulers to deposit their containers at the landfill before, after and during operational hours, so as the Operations manager can efficiently control waste disposal at the working face.

In compliance with 6 NYCRR Part 360 1.7(b)(7), the landfill will operate the roll-off storage area in the following manner for shipments of nonputrescible industrial and commercial waste. A log stating the date and time that the container was delivered to the area followed by the date

and time when the container was taken to the working face to be emptied. The time between delivery and emptying will not exceed five days. The containers will be covered with waterproof tarps and will not be opened during the storage period for any purpose. The containers used for storage will meet the design requirements specified by the USDOT for each type of waste stored. Containers will be stored in a manner which will prevent possible damage or rupture to the storage containers. During the storage period, the Hauling Company Operations Manager will inspect the containers and storage area weekly to insure the area is free of nuisances (i.e. dust, odor, noise and leaks). If spills or leaks are detected, the landfill must immediately notify the NYSDEC and follow the spill procedures as stated in the Facilities Contingency Plan (Part VI of this submittal).

The landfill may temporarily store shipments of putrescible waste in the roll-off storage area. This storage will only be allowed under circumstances when the immediate disposal of the waste could result in significant nuisances or environmental concerns. These include delaying the disposal of a load containing waste susceptible to littering during periods of high wind, delaying the disposal of frozen loads to prevent excessive traffic hold-ups, storing a minimum number of loads that could not be disposed due to the landfill closing down (usually due to weather), etc. This waste shall not be stored for longer than 24-hours, and will be managed in the following manner. A log stating the date and time that the container was delivered to the area followed by the date and time when the container was taken to the working face to be emptied. The containers will be covered with waterproof tarps and will not be opened during the storage period for any purpose. Containers will be stored in a manner which will prevent possible damage or rupture to the storage containers. During the storage period, the Hauling Company Operations Manager will inspect the containers and storage area daily to insure the area is free of nuisances (i.e. dust, odor, noise and leaks). If spills or leaks are detected, the landfill must immediately notify the NYSDEC and follow the spill procedures as stated in the Facilities Contingency Plan (Part VI of this submittal).

## **17. FIRE PREVENTION PLAN**

In order to prevent the occurrence of a fire at the Chaffee Landfill, personnel will be trained to maintain safe operating practices. Smoking and open flames will be restricted to designated areas away from the active landfill face.

A hot-load extinguishing area shall be designated at the landfill by the Operations Manager. The area shall be adjacent to the facility's working face, between the working face and the center of the landfill to mitigate any potential contamination from a hot-load. The scale operator and

equipment operators shall be notified of the area. If the scale operator or equipment operator determines a load to be hot, the scale or equipment operators shall direct the hauler to the area and the Operations Manager will be notified. Landfill personnel will proceed to the area (under direction from Operations Manager) with fire extinguishing equipment (e.g. soil, chemical extinguishers, water, or a combination). The hauler will be directed to dump the load and any potential fires will be extinguished. Landfill personnel will reload the waste and direct the hauler to the working face of the landfill for waste disposal. The fire extinguishing event shall be recorded in the landfill records.

The facility also maintains a supply of fire extinguishers and water trucks that may be used in the event of an emergency incident. These extinguishers are located at the scale house and the maintenance facility for easy accessibility. Fire extinguishers are also located on the landfill vehicles and equipment for use in cases of field emergencies. Extinguishers are maintained in conformance with State and local fire codes and regulations. There is no open burning allowed at the Chaffee Landfill.

Fire response procedures are discussed in the monthly training/safety meetings conducted at the landfill.

Emergency telephone numbers are listed in the Contingency Plan submitted separately. These numbers are conspicuously posted at each generally available telephone at the landfill facility.

## **18. FACILITY INSPECTIONS**

As stated throughout the above sections, landfill personnel will be required to perform several inspections at varying time intervals to ensure that the landfill systems are properly maintained and functioning. The majority of these inspections and maintenance schedules are discussed as part of the groundwater suppression system, leachate collection, transmission and storage systems and waste tracking systems. In addition to the inspections discussed elsewhere in this document, the facility will perform weekly inspections.

These weekly inspections will consist of the following items;

- Inspect all landfill covers, including daily, intermediate, interim final and final,
- Inspect the active areas of the landfill facility for erosion damage, and

- Inspect the perimeter of the landfill facility for litter, odors, leachate seeps and ponding water.

Upon making these inspections, the Operations Manager will complete the form titled Facility Inspection located in Appendix B3a. The Operations Manager will note any issue by describing it on the figure provided. An updated figure will be developed for each phase of the development. Upon completing the inspection, required maintenance or operations modifications shall be made. These resolutions and the date that they were completed shall be indicated on the corresponding inspection form. These forms shall be maintained at the landfill and be made available for NYSDEC review.

## **19. RECORD KEEPING AND REPORTING**

The landfill has established procedures to monitor the operation and maintenance of the landfill, including a program of self-inspection, record keeping, and reporting. Copies of example quarterly and annual reports are found in Appendix F.

### **19.1 Record Keeping**

The landfill maintains records to evaluate the operation, maintenance, and monitoring of the landfill. The information is recorded and maintained in files at the main facility office, several of forms are located within Appendix B. These records and files are then used to prepare the quarterly and annual report submittals to the NYSDEC.

### **19.2 Reporting**

The landfill submits four Quarterly Reports and an Annual Report to the NYSDEC using forms provided by the NYSDEC.

All quarterly and annual reports shall be submitted to the following;

NYSDEC  
Division of Solid & Hazardous Materials  
Bureau of Solid Waste & Land Management  
625 Broadway  
Albany, New York 12233-4013

NYSDEC  
270 Michigan Avenue  
Buffalo, New York 14203-2999  
Attn; Regional Solid Materials  
Engineer

### **19.2.1 Quarterly Reports**

Each quarterly monitoring report will provide information on activities occurring during the quarter in question (January 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31) and will be submitted no later than 60 days after the last day of the quarter in question. All quarterly reports will be submitted on the forms provided by the NYSDEC or electronically as specified by the NYSDEC and shall also contain the following;

1. Report on funding levels of closure and post-closure funds and evidence that proper financial assurance mechanisms are in place.
2. Amounts of leachate collected by each primary and secondary leachate collection systems on a daily basis.
3. Amount of leachate removed from the leachate tanks on a daily basis and the disposal location.
4. Amounts and dates of fluid removed from the leak detection monitoring risers (double contained tanks and double contained leachate lines).
5. Amounts of waste (mixed municipal, water and wastewater sludges, industrial waste & sludges, ash, C&D debris, asbestos, compost, yard wastes, contaminated soils) received from each New York State County, from each State and from outside of the Country.
6. Amounts of landfill gas condensate generated at the flare knockout tank, the disposal location, and the number of landfill gas collection wells in operation.
7. Groundwater and surface water quality results.
8. The amount and types of waste utilized as alternate daily cover.
9. The results of the methane gas migration monitoring program required by 6 NYCRR Part 360-2.17(f)(2).
10. The results of the monitoring of the landfill surface in accordance with 6 NYCRR 360-2.21(f)(3). Any remediation or required modifications shall be reported as well.

11. Odor Complaint records as applicable.

### **19.2.2 Annual Report**

The Annual Report will be submitted no later than 60 days after January 1 of each year on forms provided by the NYSDEC or electronically as specified by the NYSDEC and shall also contain the following information;

1. Any changes in water quality, which have occurred throughout the report year and a summary of the water quality information as specified in the Environmental Monitoring Plan.
2. Any changes to the fill progression plan.
3. Updated cost estimates for closure/post-closure activities and financial records of agreed upon payments to closure and post-closure accounts (if applicable).
4. Volume of leachate collected in the primary and secondary leachate collection systems on a monthly basis.
5. Anything that causes the operator to implement the Contingency Plan at the landfill and responses taken by landfill personnel.
6. Any changes from the approved plans, report and specifications or permit along with a justification for the change.
7. A summary and record of unauthorized wastes brought to the facility and their disposition.
8. The top of casing, ground surface, and bottom elevations of all monitoring wells.
9. Proof of two (2) leachate disposal locations and two leachate transporters.
10. An annually updated topographic map.
11. Amount of mine materials utilized for landfill construction and cover. Updated soil balance comparing the required soils for construction, operation and closure of the

landfill to the amount of materials remaining in the permitted mine. Amounts shall be verified based on ground or aerial surveys.

12. Proof of current certification for laboratory conducting sampling and analyses under the facility's Environmental Monitoring Plan and Site Analytical Plan.
13. Odor complaint records as applicable.

### **19.2.3 Annual Gas Recovery Facility Report**

As discussed in Section 12 of this manual, the Chaffee Landfill currently operates a landfill gas collection system, which consists of existing vertical and horizontal wells, headers, condensate knockouts and an enclosed flare unit. The proposed landfill expansion will continue to utilize the current system with the addition of wells, headers and condensate knockouts.

As part of the landfill operations, an Annual Gas Recovery Facility Report will be submitted no later than 60 days after January 1 of each year on forms provided by the NYSDEC or electronically as specified by the NYSDEC and shall also contain the following information;

1. A summary showing monthly estimates of the quantity of landfill gas recovered;
2. A summary showing monthly estimates of the quantity of condensate generated at the knockout tank adjacent to the enclosed flare unit (condensate knockouts at existing LST 1 and LST 2 and any proposed knockouts that directly discharge into the leachate collection system do not have to be tracked);
3. A summary of the annual condensate sampling data, which will consist of an analysis including baseline parameters and any additional parameters specified by the department pending review of the previous sampling results;
4. A summary of the annual hours of operation for the flare and blower; and
5. A list of full and part time employees, relative to the gas recovery system and their titles.