

US EPA ARCHIVE DOCUMENT

Contents

Section 1 Introduction

1.1	Facility Description	1-1
1.2	USEPA Project XL Final Project Agreement	1-1
1.3	Project Goals	1-2
1.4	Regulatory Issues.....	1-2
1.5	Purpose of Report	1-3
1.6	Modification of FPA Criteria.....	1-3
1.7	Geotechnical Report	1-5

Section 2 Application Considerations

2.1	Direct Application at the Working Face.....	2-1
2.2	Percolation Using Ponds or Surficial Trenches	2-2
2.3	Percolation Using Vertical Wells.....	2-2
2.4	Pressure Injection Systems	2-3
2.5	Selected Application Methods for the Buncombe County Bioreactor System	2-3

Section 3 Bioreactor System Design

3.1	Advantages of the Proposed System	3-1
3.2	Horizontal Injection Trench and Vertical Injection Well Design and Layout	3-2
3.3	Pumping System Design	3-4
3.4	Surficial Gravity Trenches.....	3-6
3.5	Impact of Leachate Collection System.....	3-6

Section 4 Gas Collection System Design

4.1	Combined Landfill Gas Collection/Pressure Injection System Design.....	4-1
4.2	Combined Landfill Gas/Leachate Collection System Design.....	4-2
4.3	Gas Management Options.....	4-2

Section 5 Operation Plan

5.1	Pressure Injection System.....	5-1
5.2	Pumping Strategy	5-1
5.3	General Procedures	5-2
5.4	Detailed Procedures	5-3
5.5	Direct Application at the Working Face.....	5-4
5.6	Other Operational Considerations	5-5
5.7	Gas Collection System.....	5-5
5.7.1	Gas Collection System Operation Strategy.....	5-6
5.7.2	Gas Collection System Operational Procedures	5-7
5.7.3	Condensate Management.....	5-8

Section 6 **Monitoring Plan**

6.1 Leachate and Gas Monitoring.....6-1
 6.1.1 Leachate Quality6-2
 6.1.2 Liquid Quantity6-3
 6.1.3 Gas Composition, Volume, and Flow Rate.....6-4
6.2 Moisture and Temperature Monitoring6-4
6.3 Other Proposed Monitoring.....6-6
 6.3.1 Hydraulic Head on the Liner System.....6-6
 6.3.2 Settlement6-6
 6.3.3 Leak Detection6-7
 6.3.4 Degree of Stabilization (Optional)6-7

Section 7 **Stakeholders Involvement Plan**

US EPA ARCHIVE DOCUMENT

