

TABLE OF CONTENTS	PAGE
<b>ABSTRACT.....</b>	<b>ii</b>
<b>ABSTRAK.....</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>vi</b>
<b>TABLE OF CONTENTS.....</b>	<b>vii</b>
<b>LIST OF FIGURES.....</b>	<b>x</b>
<b>LIST OF TABLES.....</b>	<b>xiii</b>
<b>LIST OF ABBREVIATIONS.....</b>	<b>xv</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1    Background.....	1
1.2    Scope of Study.....	5
1.3    Research Objectives.....	10
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>11</b>
2.1    Introduction to Waste Disposal Facility.....	11
2.2    Municipal Solid Waste Management.....	13
2.2.1    Malaysian Environmental Quality Acts 1974.....	14
2.2.2    Issues Related to Landfill.....	17
2.3    Landfill Components .....	19
2.3.1    Waste Containment System.....	20
2.3.2    Landfill Configuration.....	24

2.4 Final-cover Systems.....	28
2.4.1 Components of Final-cover System.....	32
2.4.2 Typical Materials of Cover Layer.....	37
2.4.3 Properties of Landfill Cover.....	44
2.4.4 Factors Affecting Cover Layer.....	47
2.4.5 Factors Affecting Geosynthetic Cover Liner.....	49
2.5 Leachate Generation in Municipal Solid Waste (MSW) Landfill.....	50
2.5.1 Composition of MSW .....	51
2.5.2 Municipal Solid Waste of Leachate Characterization.....	54
2.5.3 Factors Affecting Leachate Quantity.....	55
2.5.4 Gas Generation.....	57
2.5.5 Factors Affecting Gas Generation.....	59
2.5.6 Gas Control and Treatment.....	61
<b>CHAPTER THREE: METHODOLOGY.....</b>	<b>63</b>
3.1 Introduction of Visual HELP Programme.....	63
3.1.1 Limitation of Software VHELP.....	64
3.1.2 Water Balance Components.....	65
3.2 Input Data and Parameters.....	67
3.2.1 Input Data.....	67
3.2.2 Parameters Used.....	69
3.2.3 Output of Visual HELP.....	72
3.3 Procedures of Study.....	73
3.3.1 Study of Landfill Cover Systems Performance.....	76
3.4 Statistical Analysis.....	89

<b>CHAPTER FOUR: RESULTS AND DISCUSSION.....</b>	<b>90</b>
4.1 Introduction.....	90
4.2 Influence of Cover Systems on Water Balance Components (WBCs).....	91
4.3 Influence of Level of Vegetation on WBCs.....	97
4.4 Influence of Soil Parameters on WBCs.....	102
4.4.1 Influence of Topsoil Thickness on WBCs.....	102
4.4.2 Influence of Surface Slope on WBCs.....	107
4.4.3 Influence of Saturated Hydraulic Conductivity of Topsoil on WBCs.....	112
4.4.4 Influence of Saturated Hydraulic Conductivity of Drainage on WBCs.....	117
4.4.5 Influence of Saturated Hydraulic Conductivity of Barrier Soil on WBCs....	121
4.5 Cost Analysis of Cover Systems.....	126
4.6 General Discussion.....	129
<b>CHAPTER FIVE: CONCLUSION.....</b>	<b>133</b>
5.1 Conclusions.....	133
5.2 Recommendations.....	134
References.....	135
Appendix A- Output analysis from Visual HELP Model	
Appendix B- Parameters Limits of Effluent of Standard A and B From 3 <sup>rd</sup> Schedule	
EQA, (1974) Environmental Quality Acts (Sewage and Industrial Effluent)	
Regulation 1979	
Appendix C - Differences between GCLs and CCLs	
Appendix D -Statistical analysis	
Appendix E - Statistical analysis	
Appendix F - Statistical analysis	
Appendix G - Statistical Analysis	