

CONTENTS

	Page No.
Acknowledgment	<i>i</i>
Contents	<i>ii</i>
List of Tables	<i>iii</i>
List of Figures	<i>iv</i>
List of Abbreviations	<i>v</i>
	1-16

CHAPTER 1 INTRODUCTION

1.1	Introduction	1
1.2	Literature Review	3
1.3	Statement of Problem	6
1.4	Objectives	7
1.5	Hypothesis	7
1.6	Database and Methodology	7
1.6.1	Water Sample	7
1.6.2	Tools and Technique	8
1.6.3	Chemical Analysis	8
1.6.4	Identification of Water Disposal Sites	9
1.6.5	Secondary Data Sources	9
	Resume	12
	Reference	12

CHAPTER 2 STUDY AREA PROFILE

2.1	Location and Geographical Extent	17
2.2	Physiography	18
2.3	Geomorphology	20
2.4	Geology	20
2.5	Drainage	21
2.6	Soil	22
2.7	Climate	22
2.8	Vegetation	23
2.9	Socio-economic	23
2.9.1	Demographic Setup	23
2.9.2	Agriculture	23
2.9.3	Industry	24
2.9.4	Transport	24
2.9.5	Water Facility	25
2.10	Ports	25
2.11	Land Use and Land Cover	26
	Resume	27
	Reference	27

CHAPTER 3 **29-110**
**SPATIO-TEMPORAL VARIABILITY OF HYDROCHEMICAL AND GEOCHEMICAL
PARAMETERS OF SURFACE AND SUB-SURFACE WATER**

3.1	Introduction	29
3.2	General Characteristics Water	29
3.2.1	Post-monsoon, 2015 (Surface Water)	29
3.2.2	Post-monsoon, 2015 (Sub-surface Water)	34
3.2.3	Pre-monsoon, 2016 (Surface Water)	40
3.2.4	Pre-monsoon, 2016 (Sub-surface Water)	46
3.2.5	Monsoon, 2016 (Surface Water)	53
3.2.6	Monsoon, 2016 (Sub-surface Water)	60
3.2.7	Post-monsoon, 2016 (Surface Water)	66
3.2.8	Post-monsoon, 2016 (Sub-surface Water)	73
3.2.9	Pre-monsoon, 2017 (Surface Water)	80
3.2.10	Pre-monsoon, 2017 (Sub-surface Water)	86
3.2.11	Monsoon, 2017 (Surface Water)	92
3.2.12	Monsoon, 2017 (Sub-surface Water)	99
3.3	Seasonal Variability	106
	Resume	109
	Reference	110

CHAPTER 4 **111-144**
WATER QUALITY INDEX

4.1	Introduction	111
4.2	Literature Review for Water Quality	112
4.3	Chemistry of Water	115
4.4	Water Quality Index (WQI)	116
4.5	Water Quality Parameters	118
4.6	WQI Results and Evaluation of Surface Water	120
4.7	Comparison of WQI (Surface Water)	125
4.8	WQI Results and Evaluation of Sub-surface Water	129
4.9	Comparison of WQI (Sub-surface Water)	135
	Resume	137
	Reference	138

CHAPTER 5 **145-174**
SPATIO-TEMPORAL ANALYSIS OF LAND USE/LAND COVER

5.1	Introduction	145
5.2	Review of Literature	146
5.3	Remote Sensing & GIS Techniques	151
5.4	Database and Methodology	152
5.5	Land Use / Land Cover	153
5.5.1	Land Use/Land Cover Classification-1997	155

5.5.2	Land Use/Land Cover Classification-2017	156
5.5.3	Change Detection Analysis	157
5.6	Identification of Industrial Sprawl	159
	Resume	169
	Reference	170

CHAPTER 6 **175-206**
**IDENTIFICATION OF LANDFILL SITE SELECTION FOR SOLID WASTE
DISPOSAL**

6.1	Introduction	175
6.2	Literature Review	176
6.3	Materials & Methodology	180
6.4	Multi-criteria Technique: Analytic Hierarchy Process (AHP)	182
6.5	Weighted Overlay Analysis (WOA)	190
6.6	Landfill Selection Criteria	190
6.7	Assessment of Suitable Landfill Sites	198
	Resume	200
	Reference	200

CHAPTER 7 **207-209**
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1	Conclusion and Future Aspects	207
	Published Paper	