

GEOCHEMICAL SURVEY OF UNDERGROUND WATER POLLUTION
AT DITENGTENG NORTHERN CEMETERY WITHIN CITY OF
TSHWANE MUNICIPALITY.

BY


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ABSTRACT

In a country such as South Africa, there is a rich diversity of cultural, social, traditional and religious practices. The issue of death takes on a similar diversity, as such responding to death through a burial practice differs to varying degrees with regard to burial containment, burial material and burial procedure.

The last few decades have seen an increasing recognition of the impact of human activity on the environment and the critical need to transform our approach on how we plan, lead, manage and monitor our activities. The subject of death has always been sensitive, resulting in the impact of burial remains outside the mainstream environmental critique. A sustainable development approach need to be applied to the issue of burial, and best environmental options should be adopted with sensitivity to social, religious and cultural practices.

As the need for land urban development increases, the available space for cemeteries is decreasing. Of the twenty-eight cemeteries in the City of Tshwane Metropolitan Municipality, thirteen are filled up. Therefore, more space is required to bury the dead. It is also recognized that significant increases in the number of deaths due to the HIV/AIDS pandemic is causing problems for already stretched cemetery facilities throughout many parts of South Africa.

Research by Fisher (2002) has shown that cemeteries have a fairly severe pollution potential, especially if situated incorrectly. Leachate produced in a cemetery is of a pathogenic nature and can pollute surface and groundwater if located too closely. In black rural areas, most cemeteries were sited by the chiefs and kings of the area, since no legislation existed to govern the cemetery sites. As a result most cemeteries were poorly sited and now possess potential health hazards for our groundwater. Groundwater is a hidden treasure for sustainable development and it plays a vital role in the community, especially in the rural areas.

Groundwater is a vital resource in South Africa and sufficient measures should be taken to prevent such additional pollution. This study was undertaken to establish whether poorly sited cemeteries have an impact on groundwater quality, and how can this impact be minimized or eliminated. Therefore, the groundwater quality of Ditengteng village was analyzed chemically and microbiologically.

Chemical sampling indicated that the turbidity and the colour of the water do not comply with the South African Bureau of Standards (SABS) for drinking water and the concentration of iron and manganese, which are colouring the water and may cause health hazards if consumed over a long period. Microbiological sampling results indicated that even a once-off consumption of water could cause serious health hazards. The samples collected recorded poor water quality. Despite this fact the community at Ditengteng still use this water for bathing, drinking and cooking. Since piped domestic water supplies are not available, the community depend on that water for survival. This study also indicates that an incorrectly sited cemetery can lead to the contamination of groundwater due to leachate.



CHAPTER ONE: ORIENTATION OF THE STUDY

1.1 Introduction	1
1.2 Rationale and importance of the study	2
1.2.1 Motivation of the study	2
1.2.2 Problem statement	3
1.2.3 Aim and objectives	4
1.3 Research methodology	4
1.4 Description of the study area	5
1.4.1 Site description	5
1.5 Nature of the investigation	6
1.5.1 Laboratory Testing	7

**CHAPTER TWO: REVIEW OF SELECTED LITERATURE**

2.1 Policy and strategy for groundwater quality management in South Africa	8
2.1.1 Groundwater pollution from cemeteries	8
2.1.2 Environmental impacts	9
2.2 Decomposition	13
2.2.1 Bacterial and viral activity in the dead human body	13
2.2.2 Corps Fauna	16
2.3 Groundwater pollution from cemeteries	18
2.4 Water quality and health	22
2.4.1 Characteristics of diseases	23
2.4.2 Water-related diseases	23
2.4.2.1 Waterborne diseases	24

2.4.2.2 Water-washed diseases	25
2.4.2.3 Water-based diseases	26
2.4.2.4 Water-related insect vectors	27

CHAPTER THREE: HOLISTIC OVERVIEW OF CEMETERIES

3.1 Cemeteries	28
3.2 Geological factors affecting cemeteries	32
3.2.1 Cemetery site investigations	32
3.2.1.1 Factors relating to soil conditions	32
3.2.1.2 Factors relating to underlying bedrock conditions	32
3.2.1.3 Factors relating to groundwater conditions	32
3.2.1.4 Factors relating to surface water occurring in the drainage features	33
3.3 Selection criteria	33
3.4 Soil permeability	36
3.5 Position in respect of domestic water sources	37
3.6 Position in respect of drainage features	38
3.7 Site drainage	40
3.8 Site topography	41
3.9 Basal buffer zone	41
3.10 Grave stability	42
3.11 Soil workability	43
3.12 Cemetery Size	43



CHAPTER FOUR: DATA COLLECTION AND QUESTIONNAIRE

4.1 Introduction	44
4.2 Data analysis and discussion of results	46
4.2.1 Chemical analysis	46
4.2.2 Microbiological analysis	49
4.2.3 Soil sampling	51
4.3 Analysis of questionnaire	52

CHAPTER FIVE CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions	58
5.2 Summary	59
5.3 Recommendations	59



LIST OF Tables

Table 1	Chemical and microbiological parameters below the grave	20
Table 2	Pollution of graves within certain distances of houses	20
Table 3	Standards vs findings parameters f micro-organisms	23
Table 4	Main water related diseases.	24
Table 5	CTMM cemeteries	30
Table 6	CTMM burial statistics	31
Table 7	Excavability assessment	35
Table 8	Soil type and predicted permeability ranges	39
Table 9	Safe distance to drainage features vs domestic water sources	40
Table10	Grave stability asesment	42
Table 11	Chemical determinants for domestic water supply	48
Table 12	Microbiological determinants for domestic water supplies	49

Table 13	Microbiological sampling	50
Table 14	Soil test results	51

LIST OF FIGURES

Figure 1	Location of Ditengteng	6
Figure 2	Potential threats to the environment	12
Figure 3	Human decomposition process	15
Figure 4	The classical water borne disease infection cycle	25
Figure 5	The infection cycle for Schistosomiasis	26
Figure 6	Borehole used for domestic water supply	28
Figure 7	Flow chart for selecting cemetery sites	34
Figure 8	The lowest recommended permeability	37
Figure 9	Ditengteng sampling points	44
Figure 10	Well used for domestic water supply	45
Figure 11	Ditengteng cemetery indicating Hardpan Ferricrete	46
Figure 12	Educational qualification	52
Figure 13	Economic status	53
Figure 14	Type of accommodation	54
Figure 15	Size of household	54
Figure 16	Period of stay	55
Figure 17	Services	55
Figure 18	Types of diseases	56
Figure 19	Community experience	57

APPENDICES

Appendix A Questionnaire	61
Appendix B List of references	65

