EFFECTS OF THE ABIOTIC FACTORS AND PHYSICAL PARAMETERS CHANGE TO THE MAGNESIUM (Mg) AND IRON (Fe) CONCENTRATION IN THE ABANDON MAMUT COPPER MINE RANAU, SABAH

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TABLE OF CONTENTS

		Page
ACKNOWLEDGEMENTS		iii
TABLE OF CONTENTS		iv
LIST OF TABLES		vi
LIST OF FIGURES		vii
LIST OF ABBREVIATIONS		viii
ABSTRACT		viii
ABSTRAK		x
CHAPTER 1 INTRODUCTION		
1.1	Background of Study	1
1.2	Problem Statement	3
1.3	Significant of Study	5
	1.3.1 Academic	5
	1.3.2 Management	5
	1.3.3 Society	6
1.4	Objective of the Study	7
1.5	Framework	8
CHAPTER 2 LITERATURE REVIEW		
2.1	Abandon Mamut Copper Mine Ranau, Sabah	9
2.2	The Importance of Magnesium (Mg) and Iron (Fe)	10
2.3	The Permissible Limit of Magnesium (Mg) and Iron (Fe) in Water	12
2.4	Abiotic Factor	16
	2.4.1 Rainfall as abiotic factor	17
	2.4.2 Humidity as abiotic factor	18
	2.4.3 Temperature as abiotic factor	18
2.5	Physical Parameter	19
	2.5.1 pH in water	20
	2.5.2 Dissolved Oxygen in water	22
CHAPTER 3 METHODOLOGY		
3.1	Study Site	23
3.2	Materials	26
	3.2.1 Raw Materials	26
	3.2.2 Chemicals	27
	3.2.3 Apparatus	27
3.3	Sample Collection	28
3.4	Sample Preservation	32
3.5	Sample Preparation	32
3.6	Sample Analysis	32
3.7	Data Analysis	34

3.8 Experimental Design 37

CHAPTER 4 RESULT AND DISCUSSION
4.1 Metal Concentration in Water Sample 39
4.2 Physical Parameters in Abandon Mamut Copper Mine 45
4.3 Abiotic Factor in abandon Mamut Copper Mine 46
4.4 Effect between Abiotic Factor and metal concentration and between Physical Parameter and metal concentration 50

CHAPTER 5 CONCLUSION AND RECOMMENDATIONS
5.1 Conclusion 54
5.2 Recommendations 55

CITED REFERENCES 56
APPENDICES 59
CURRICULUM VITAE 84

ABSTRACT

EFFECTS OF THE ABIOTIC FACTORS AND PHYSICAL PARAMETERS CHANGE TO THE MAGNESIUM (Mg) AND IRON (Fe) CONCENTRATION IN THE ABANDON MAMUT COPPER MINE RANAU, SABAH

Magnesium (Mg) and iron (Fe) were play an important role as essential element for the crop of farmer around the abandon Mamut Copper Mine Ranau Sabah. However, the occurrence of rapid change of abiotic factor and physical parameter could affect the magnesium (Mg) and iron (Fe) concentration in abandon Mamut Copper Mine to decrease or increase and this can cause the deficiencies in crop yield. This study was conducted to determine either abiotic factor or physical parameter can affect the magnesium (Mg) and iron (Fe) in abandon Mamut Copper Mine as a main source of water for the farmer's crop. Firstly, pH and dissolved oxygen were determined using HI98194 pH/EC/DO Multiparameter (HANNA). After that, five replicates of water samples were collected in each three different station per sampling. The prepared sample were run with the Atomic Absorption Spectrophotometer, AAS (Agilent Technologies 200 Series AA) to determine and identify the concentration of Mg and Fe. The range of magnesium (Mg) concentration is 73.38 ± 2.27 mg/L – 118. 22 ± 0.53 mg/L. While for the iron (Fe), the range is 11.85 ± 0.3 mg/L – 13. 37 ± 0.145 mg/L. The range of pH is 3.06 ± 0.09 – 3.07 ± 0.09. While, for dissolved oxygen, the range is 6.84 ± 0.096 – 6.86 ± 0.098. From the finding, there were variation of the abiotic factor from July to October of year 2019 that obtained from the Sabah Meteorological Department. This show that abiotic factor can be the reason that can derive the magnesium (Mg) and iron (Fe) concentration in abandon Mamut Copper Mine to increase or decrease. Other than that, the result indicates that only temperature and humidity of abiotic factor that have significant correlation with magnesium (Mg) concentration.