

TABLE OF CONTENTS

RATIFICATION PAGE	iii
STATEMENT PAGE	iv
DEDICATION	v
PREFACE	vi
TABLE OF CONTENTS.....	vii
LIST OF FIGURES	ix
LIST OF TABLES	x
LIST OF APPENDICES.....	xi
ABSTRACT	xii
INTISARI.....	xiii
CHAPTER I INTRODUCTION	1
I.1 Background	1
I.2 Research Objective.....	3
I.3 Research Benefits.....	3
CHAPTER II LITERATURE REVIEW AND HYPOTHESIS FORMULATION	3
II.1 Literature Review.....	4
II.1.1 Bentonite.....	4
II.1.2 Drilling fluid	5
II.1.3 Soda ash.....	6
II.1.4 Sodium carboxymethylcellulose (Na-CMC)	7
II.2 Hypothesis Formulation and Research Planning	7
II.2.1 Hypothesis formulation 1	7
II.2.2 Hypothesis formulation 2	8
II.2.3 Research planning	8
CHAPTER III RESEARCH METHODS	9
III.1 Research Materials.....	9
III.2 Research Instruments	9
III.3 Research Procedure.....	9
III.3.1 Sample preparation.....	9

III.3.1 Sample preparation	9
III.3.2 Residue determination by wet sifting	9
III.3.3 Effect of soda ash on the bentonite swelling index ..	10
III.3.4. Swelling index determination	10
III.3.5. Rheological test of the drilling mud	10
III.3.5.1 Pacitan white bentonite sample.....	10
III.3.5.2 CMC variation	11
III.3.5.3 Soda ash variation	11
III.3.5.4 PWB-SA-CMC characterization.....	12
CHAPTER IV RESULT AND DISCUSSION	13
IV.1 Effect of Sodium Carbonate Variation Towards the Swelling of Pacitan White Bentonite (PWB).....	13
IV.2 Characterization of PWB by XRF.....	15
IV.3 Identification of Ca, Mg, and Fe in PWB and PWB-SA by AAS.....	16
IV.4 Effect of the Addition of Soda Ash and Carboxymethyl Cellulose Towards Rheological Properties of PWB	17
IV.5 Residue by Wet Sifting (75 μ m)	21
IV.6 Characterization of PWB, PWB-SA , and PWB-SA- CMC by FTIR	21
IV.7 Characterization of PWB, PWB-SA, and PWB-SA- CMC with XRD	22
CHAPTER V CONCLUSION AND RECOMMENDATION.....	26
V.1 Conclusion	26
V.2 Suggestion	26
REFERENCES	26
APPENDICES	33