

Contents

CHAPTER 1. INTRODUCTION	1
CHAPTER 2. THE MEANING OF FACIES	3
CHAPTER 3. PREREQUISITES OF GEOCHEMICAL FACIES ANALYSIS	7
Permanence of the oceans	7
Climatic influences	16
Tectonic influences	21
Provenance of the sediment	24
Rates of sedimentation	28
Grain size distribution	31
Biological influences	34
Influence of diagenesis and metamorphism	36
CHAPTER 4. METHODOLOGICAL PREREQUISITES	46
Introduction	46
Sampling	47
Preparation and analysis	53
Environmental evaluation of geochemical analysis data	55
Geological evaluation of geochemical facies analyses	60
CHAPTER 5. RESULTS OF GEOCHEMICAL FACIES ANALYSES	65
Hydrofacies	66
Salinity facies	66
Boron, 67—Bromine, 77—Chlorine, 78—Alkalis and earth alkalis, 80—Sulphur and isotopes of sulphur, carbon and oxygen, 85—Phosphate, 91—Organic substances, 92	

Oxygen facies	97
Temperature facies	110
Litho- and biofacies	114
CHAPTER 6. NON-CHEMICAL METHODS OF FACIES ANALYSIS	119
CHAPTER 7. PRACTICAL USE AND FUTURE IMPORTANCE OF GEOCHEMICAL FACIES ANALYSIS	122
REFERENCES	126
INDEX	142