

TABLE OF CONTENTS

STATEMENT OF ANTI PLAGIARISM.....	ii
APPROVAL FORM	iii
PROJECT FORM	iv
Acknowledgment	v
Table of Contents	vi
Table of Figures	viii
Table of tables	ix
ABSTRACT	1
1. Introduction.....	2
1.1. Background of Study	2
1.2. Institution and Laboratory Profile.....	3
1.3. Objectives of the Study	4
1.4. Scope and Limitations.....	4
1.5. Report Structures.....	4
2. Literature Reviews	6
2.1. State of The Art.....	6
2.2. Tritium	9
2.3. Tritium Forms in the Environment	10
2.3.1. Tritiated Water (HTO)	10
2.3.2. Organic Bound Tritium (OBT)	11
3. Materials and Methods.....	15
3.1. Study Area.....	15
3.2. Samples Processing and Measurement Methods	17
4. Results Analysis	19

4.1. Water Chemistry of Rhine River and Grand Canal Alsace.....	19
4.1.1. pH Measurement	19
4.1.2. Anions Analysis	20
4.1.3. Total Organic Carbon Concentrations	22
4.1.4. Total Inorganic Carbon Concentrations (TIC).....	22
4.1.5. Major Elements Concentrations	25
4.1.6. Trace Metal Concentrations	26
4.1.7. Tritium Concentration.....	28
4.2. Nanoparticle Analysis on The Water Sample	30
4.2.1. Zeta Potential	30
4.2.2 Filtration Samples	31
4.2.3. Ultracentrifuged Samples.....	34
4.2.4. Tritium Distillated Samples	36
4.3. Sediment Experiment Result.....	37
5. Conclusion and Recommendation.....	39
REFERENCES.....	40
ANNEX 1. Anions measurement results	41
ANNEX 2. Conductivity and Dissolve Oxygen Result	41