

**COMPREHENSIVE SEMESTRAL REPORT FOR FIELD PRACTICE AT
DEPARTMENT OF AGRICULTURE REGIONAL FIELD
OFFICE NO. 02 (DA-RFO 02)**

MONIQUE D. MACARANAS


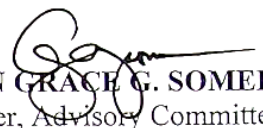
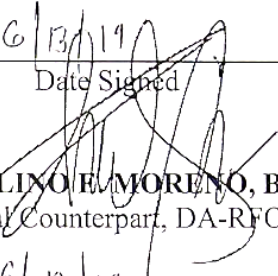
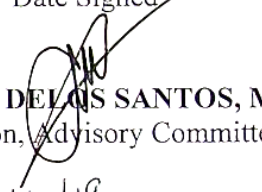
An Undergraduate Field Practice Manuscript Submitted to the Faculty of the Department
of Agricultural and Biosystems Engineering, College of Engineering,
Central Luzon State University, Science City of Muñoz,
Nueva Ecija, Philippines in Partial Fulfilment
of the Requirements for the Degree of

**BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING
(Soil and Water Conservation Engineering)**

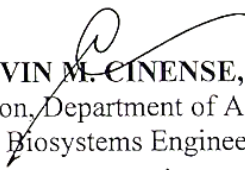
JUNE 2019

ACCEPTANCE SHEET


This undergraduate field practice report entitled, “**COMPREHENSIVE SEMESTRAL REPORT FOR FIELD PRACTICE AT DEPARTMENT OF AGRICULTURE REGIONAL FIELD OFFICE NO. 2 (DA-RFO 2),**” prepared and submitted by **MONIQUE D. MACARANAS**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING (SOIL AND WATER CONSERVATION ENGINEERING)**, is hereby accepted:

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BIOGRAPHICAL SKETCH

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ACKNOWLEDGEMENT

The author would like to express her sincerest gratitude and heartfelt thanks to the people who contributed and extended their helping hands to make this study successful. Without their contributions, the completion of this study would not have been possible;

To Engr. Marlon T. Delos Santos, his ever supportive and generous adviser, for his precious time, guidance, suggestions and supervision and also for sharing his resources;

To Engr. Melba D. Denson and Engr. Carolyn Grace G. Somera, Members of the Advisory Committee, for their time, suggestions and constructive criticism;

To Dr. Marvin M. Cinense, Department Chairperson for giving the opportunity in doing this field practice, for the advice and knowledge imparted to me;

To Dr. Victorino T. Taylan, Dean of the College of Engineering and to all faculty members and staff of the College of Engineering, for their exceptional service;

To her loving parents, Mr. William Macaranas and Mrs. Norma Macaranas for their support, morally and financially, for the love and care they have given her and for being the author's inspiration;

To her family, relatives, and nieces for their unselfish care and understanding, concern, generosity and faith;

To Sir Avelino E. Moreno, Technical Counterpart for his kindness, hospitality, and assistance to her field practice;

To DA-RFO II staffs, especially to Engr. Henry Somera, for the knowledge, comments and suggestions that are very helpful in the accomplishment of her field practice;

To her friends, especially Jessica, Olan, Joemar, Richie, Kim Bernard, Cristopher, Leslie, Christian Ann and Kiko for their assistance, encouragements, love and advises;

To the author's special one, Jay Bie Benedicto for encouraging her to always make the best out of everything and for being proud and ever supporting boyfriend;

Above all, to the Almighty God, for the knowledge and strength He gave the author in facing the obstacles in the completion of the study.

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ABSTRACT

MACARANAS, MONIQUE D., Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, MAY 2019, **COMPREHENSIVE SEMESTRAL REPORT FOR FIELD PRACTICE AT DEPARTMENT OF AGRICULTURE REGIONAL FIELD OFFICE NO. 02 (DA-RFO 02)**

Adviser: MARLON T. DELOS SANTOS, M.Sc.

The field practice mainly focused on two activities which includes (1) the design of a Small Water Impounding Project (SWIP) and (2) site inspection of an on-going Small Water Impounding Project (SWIP). The activity 1 aimed to validate the site construction for Small Water Impounding Project (SWIP), to conduct detailed engineering survey and soil investigation, to analyze the agrohydrologic analysis of the proposed SWIP, to prepare a design plan of the proposed SWIP and to estimate the project cost of the proposed SWIP. The activity 2 aimed to determine the different components of on-going Small Water impounding Project (SWIP).

To fully utilize the field practice, an inspection in the site was conducted, as well as an interview among the local farmers. A topographic survey was conducted to point elevations and coordinates using the surveying instruments RTK and Total Station. Using the SWIP Design Macro Software, the information gathered was analyzed to find the specifications for the SWIP. An AutoCAD was used to draft a detailed engineering design in order to prepare an engineering plan and an estimation of project cost.

The validated site was located at Sitio Cuntapay, Brgy. Trinidad, Mallig, Isabela and found feasible for construction of new SWIP following the criteria set by BSWM, having a watershed area of 40 hectares and service area of 36 hectares with 30 benefited

farmers. The drainage coefficient of the site was 0.35 which means it is a valley area. The soil type of the watershed area is clay loam and silty clay loam for the service area belonging to San Juan Soil Series. The dam height of the proposed SWIP was 8 m with dam crest width of 5m and 152 m dam crest length and can impound 74,840 m³ volume of water for irrigation. The Computed Total Project Cost was Php 10,379,020.85 and a development cost per hectare of Php 296,543. Since it met the Php 300,000 development cost per hectare set BSWM, the designed SWIP was feasible for construction.

For activity 2, the SWIP visited was located at Brgy. Trinidad, Mallig, Isabela, having an area of 262 hectares and the existing land use is pastureland with tertiary forest along the creeks and gullies and service area of 70 hectares. SWIP components were composed pond area, watershed area, service area, Irrigation canal, outlet works and emergency spillway.

Keywords: *Small Water Impounding Project; agrohydrologic studies; irrigation*

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