

## ETHANOL PLANT RESEARCH ENGINEER SERIES

<u>Code No.</u>	<u>Class Title</u>	<u>Occ. Area</u>	<u>Work Area</u>	<u>Prob. Period</u>	<u>Effective Date</u>	<u>Last Action</u>
1349	Assistant Ethanol Plant Research Engineer	01	032	6 mo.	11/01/07	New
1350	Ethanol Plant Research Engineer	01	032	6 mo.	11/01/07	New

### Promotional Line: 074

#### Series Narrative

Employees in these positions offer technical and engineering support to the National Corn-to-Ethanol Research Center (NCERC) or similar research facility. Performs research and testing of materials.

#### Level I: Assistant Ethanol Plant Research Engineer **1349**

Employees work closely with various clients to ensure research protocols are followed properly. The focus of these positions includes assisting with project engineering, operations, trouble shooting, process design modifications, client trial management, data analysis, and research report writing.

#### Characteristic Duties and Responsibilities

1. assists with engineering design on various projects
2. assist in conducting research by applying experimental and empirical methods and techniques, interpret results and select or recommend approaches appropriate to the solution of design, testing, and maintenance problems
3. assists with communication with clients and others
4. assists with troubleshooting during trials
5. assists with trial operations, interacting with plant and lab staff to achieve the objectives by following protocol, and assists in analyzing trial data
6. assists with compiling and analyzing the trial data
7. assists with estimating cost, schedule and procurement activities, and manages field work
8. identifies issues and solutions regarding equipment and pilot plant process
9. assists with developing standard operating procedures (SOPs)
10. provides technical assistance in the development of National Corn-to-Ethanol Research Center (NCERC) operator training program for internal and external implementation
11. assists with writing reports for client and grant based trials and produces data based promotional material to be used at industry seminars and trade shows

12. performs other duties as assigned

**Level II: Ethanol Plant Research Engineer****1350**

Employees in these positions offer technical and engineering support to the operations of the research pilot plant. They work closely with various clients to ensure research protocols are followed properly and that client confidentiality is maintained. The focus of these positions includes project engineering, project management, operations, trouble shooting, process design modifications, pilot plant personnel management, client trial management, data analysis, research report writing, and shift operations leadership.

**Characteristic Duties and Responsibilities**

1. performs or coordinates engineering design on various projects, establishes critical project objectives, delivers quality control, maintains budget and schedules, and directs project personnel on assigned projects
2. communicates with clients and grant managers to accomplish client and grant based pilot plant trials
3. coordinates pilot plant activities and troubleshoots during trials
4. oversees trial operations, including planning for the trial, interacting with plant and lab staff to achieve the objectives of the trial by following trial protocol, and analyzing the trial data
5. compiles, analyzes, and evaluates the trial data
6. prepares estimates and proposals
7. directs coordination with vendors, outside contractors and procurement of parts and equipment
8. oversees cost, schedule and procurement activities, and manages field work
9. identifies issues and solutions regarding equipment and pilot plant process
10. designs and implements process modifications and new equipment
11. develops standard operating procedures (SOPs) and novel protocol operating procedures for new processes
12. provides technical assistance in the development of National Corn-to-Ethanol Research Center (NCERC) operator training program for internal and external implementation
13. writes reports for client and grant based trials and produces data based promotional material to be used at industry seminars and trade shows
14. provides technical support for shift operators, and on the job training to interns
15. supervises and trains staff,

- a. establishes work priorities
  - b. schedules and assigns work and verifies/approves material requisitioned
  - c. plans and conducts training programs
  - d. evaluates employee's performance; counsels or assists employees
  - e. advises on selection and termination of employees
16. performs duties consistent with next lower level of this series
17. performs other duties as assigned

MINIMUM ACCEPTABLE QUALIFICATIONS REQUIRED FOR ENTRY INTO:

**Level I: Assistant Ethanol Plant Research Engineer** **1349**

CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. (A) Bachelor's degree in Engineering (Chemical or Mechanical) or Science discipline (Chemistry or Biology) or closely related field
- OR
- (B) Four (4) years of mechanical, electrical, and/or process control experience in a pilot or research plant environment

PERSONAL ATTRIBUTES NEEDED TO UNDERTAKE JOB

1. knowledge of project management, with specific focus on planning, guiding, and directing plant engineering
2. chemical, mechanical, or process experience in a manufacturing or pilot plant environment with a background in chemicals, oil refining, or bio refining
3. problem solving ability
4. strong communication skills

**Level II: Ethanol Plant Research Engineer** **1350**

CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. (A) Bachelor's degree in Engineering (Chemical or Mechanical) or Science discipline (Chemistry or Biology) or closely related field **AND** three (3) years experience in engineering support or closely related duties
- OR

(B) Seven (7) years of mechanical, electrical, and/or process control experience in a pilot or research plant environment

#### PERSONAL ATTRIBUTES NEEDED TO UNDERTAKE JOB

1. knowledge of project management, with specific focus on planning, guiding, and directing plant engineering
2. chemical, mechanical, or process experience in a manufacturing or pilot plant environment with a background in chemicals, oil refining, or bio refining
3. problem solving ability
4. strong communication skills
5. experience in process/project engineering and working with technical personnel, operations personnel, and clients