

## **Final Report: 10-0011-SA**

January 1, 2013 – December 31, 2013

### **Nitrogen Research & Groundwater Management Education Program**

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#### **PROJECT OBJECTIVES:**

The objective of this project is for WPHA to identify BMP research that would be applicable to use in “nutrient farm water use plan” in the area of nitrogen use management that will meet the requirements of the CVRWQCB and receive its approval. To establish this, the project proposals:

- 1) Introduce and receive approval from the CVRWQCB to work with their staff in the development of an “agricultural submission of BMPs” to be utilized for upcoming water quality regulations. Establish CVRWQCB buy-in by educating staff on the parameters from which research will be considered.
- 2) Identify FREP research that includes a component that addresses water quality protection for BMPs that address nitrogen application, irrigation methods, and for specific California crops, including tree nuts, stone fruit trees, grapes, cotton, alfalfa, rice, and others.
- 3) Identify other BMP research from outside entities that includes a component that addresses water quality protection for BMPs that address nitrogen application, irrigation methods, and for specific California crops, including tree nuts, stone fruit trees, grapes, cotton, alfalfa, rice, and others.
- 4) Engage agricultural associations via group meetings or one-on-one meetings on the identified research to assure grower support and to assure that BMPs identified are practical from an agronomic use standpoint.
- 5) Develop an actual “nutrient farm water use plan” that contains BMPs with growers and water agency staff, which can be submitted for approval to the CVRWQCB.

The objectives in outreach is to provide this information to as wide an impacted audience as possible, and to assure BMP projects identified through the FREP project do not present unidentified costs or impacts to growers. It is also to facilitate discussion with the CVRWQCB, industry, and grower groups via scientifically sound programs that meet the needs of grower groups and the regional water board. The project will as a result lessen pressure and frustration of all sides by providing a solution to an identified problem at a minimal cost to all involved. The ultimate objective through this effort and outreach is this process will establish a basis from which water boards and their staffs feel their regulatory requirements are recognized and maintained, and future approvals of nutrient BMPs can be deferred to CDFA for approval.

## **ABSTRACT:**

The Central Valley Regional Water Board has indicated its intention to promulgate regulations for the management of nutrient impacts on groundwater. Of particular interest is the role of nitrogen fertilizer in groundwater. Growers and members of the plant nutrient industry continue to be under pressure to demonstrate sound decision making in their nutrient application decisions. Seminars and conferences have proven to be effective in delivering new Best Management Practices research. However; despite the need to develop consensus on this issue, the fertilizer industry and growers have not come together to effectively identify what is taking place in the field, or to coalesce on what additional steps can or should be taken in an environmentally safe and agronomically sound program for commercial agriculture, to satisfy concerns of the regulatory community with interests in water quality protection.

The objective of this project would be to bring all parties together using WPHA as a respected arbiter between the fertilizer industry, grower groups, and other impacted organizations; to identify practices in place & validated research; to communicate this information within the groups involved and with other regulatory agencies, so future regulations can be developed using sound information relevant to commercial agriculture.

## **INTRODUCTION:**

The intent of the project is to provide a long-term solution for the acceptance and use of scientifically developed BMPs. The fertilizer industry in California has over the implementation timeline of FREP developed an extensive and credible number of BMPs for nitrogen fertilizer use. However, it has always been a challenge for FREP to document the extent that growers are aware of these BMPs and utilize them. This project will provide a long-term solution to this problem, as growers will be limited in application practices based on whether they can document their nutrient use as utilizing BMPs. FREP research is the most viable form of research that the water boards will likely have for scientifically demonstrated research on nutrients and water quality impacts. We hope this will be a stepping stone to achieve the water boards deferring approval of BMPs to CDFA through the demonstration of the viability of this grant effort.

This project is designed to identify already developed BMP research of FREP, as well as other university or private research in the area of nitrogen fertilizer and water quality impact. Research that will be utilized includes all research that involves nitrogen use and application that is agronomically sound and contains a component that demonstrates that the use of BMP will contribute to lessening the environmental impact to water quality, or improving water quality. Research that will be identified for possible use includes the overall use of nitrogen fertilizers, nitrogen and water quality research. The goal would be to develop as wide a set of scientifically sound options for growers to utilize as possible, as well as identifying a mechanism from which growers can document sound nitrogen management practices through a simple budget sheet.

## **WORK DESCRIPTION:**

The project is to identify relevant nitrogen research and BMP education information and to gain CVRWQCB approval for their use in “farm water use plans”. WPHA will outreach to all known parties who have been developing information in this area for use of their research. WPHA staff will personally be meeting with groups to discuss the information needed and how these groups can interact in the process. WPHA staff will also personally interact with water board staffs and administration as well as meeting with grower groups in the development and approval of the “nutrient farm water use plan” to be approved by the CVRWQCB.

- 1) WPHA will begin outreach efforts with the CVRWQCB and staff for acceptance of an agricultural submittal of a “nutrient farm water use plan”. WPHA will establish with the board staff components that they require to meet their regulatory requirements.
- 2) WPHA will work with FREP, and outside organizations to identify nitrogen research and BMPs.
- 3) WPHA will through these organizations and through our own Soil Improvement Committee, identify which research and BMPs have a water protection component that meets board staff requirements to it for consideration for submission to the water board.
- 4) WPHA will begin outreach efforts with commodity groups to identify practices identified as beneficial and especially related to specific commodities to include in approval package.

All aspects of this project will take place on an ongoing basis. Final task projects will be the addition of the creation of an actual “farm water use plan” that can be utilized by growers and to be approved by the water board. The project leader will provide an interim report at the end of six months and a final report on status of project at the end of the year.

## **RESULTS:**

1. To gain acceptance for the use of BMPs, WPHA has been meeting with officials at the water board to educate them on program effectiveness and cost effectiveness of BMPs. WPHA has been meeting with grower coalitions to overcome resistance to the use of identifying their use of BMPs.

The CVSC and CVRWB have both approved the use of BMPs as a regulatory mechanism to demonstrate nitrogen fertilizer management. The East San Joaquin Growers Coalition was the first grower organization to endorse their use as a regulatory tool, and all other grower coalitions have accepted the documentation of their use if there is a finding that their coalition members are impacting ground waters.

2. Establish that the water boards are not the appropriate authorities to approve specific BMPs.

The CVRWB has deferred the approval of BMPs to CDFA. CVRWB has stated that appropriate BMPs must be able to demonstrate that their use will have a positive impact

on control of leaching, or demonstrate improved uptake of nitrogen to prevent leaching; however, they have agreed that identification is better achieved at CDFA. WPHA has submitted the identified environmental BMPs developed through FREP research to the Central Valley Salts Coalition (CVSC) to be included in the approved list of BMPs by the Water Board. The CVSC has accepted this list of BMPs for inclusion.

3. WPHA will help develop short “white papers” that will explain the use and benefits of BMPs, as nitrogen movement, to growers.

WPHAs Soil Improvement Committee is working with IPNI to develop these papers focusing on the nitrogen use. (Attachment 1 – 4) This will help growers identify to the CVRWB why their practices meet regulatory requirements and assist the CVRWB in demonstrating the program supported by WPHA is appropriate.

4. WPHA has met on a monthly basis with the CVRWB promoting the use of a simple “Nitrate Budget”. WPHA has met with grower coalitions and other agricultural groups on a weekly basis to discuss this idea and to help gain acceptance.

This past April, the CVRWB voted to accept this tool as part of the compliance requirements for the East San Joaquin Grower Coalition Lands Program. At that meeting, the board voted to accept the use of a “Nitrate Budget” for use to document nitrogen management planning. (Attachment 5) This decision was placed on hold for one year while other regulatory agencies discuss nitrogen tools such as nitrate tracking as the preferred model by the state. However, WPHA was successful in achieving its goal of it being approved by the Regional Water Board, and many agricultural coalitions have expressed their preference of the “Nitrogen Budget” as being more appropriate for their programs. A final decision will not take place until summer of 2014 which after the timeframe of this project is complete.

## **DISCUSSION AND CONCLUSIONS:**

WPHA believes that we have been highly successful in achieving the goals of the project. During the time of the project WPHA has met on an ongoing process with agricultural coalitions to discuss the utilization of BMPs in a narrative regulatory program. The coalitions have accepted this as the most practical system from which growers may meet regulatory requirements. In addition, the Central Valley Regional Water Board has formally accepted the use of BMPs for regulatory compliance. In addition, we achieved through our collaborative work with the grower coalitions in successfully having the Regional Water Board approve a “Nitrate Budget” for use in a “nutrient farm water use plan”. As reported earlier, whether the State Water Board approves its use, provides grower coalitions the discretion to choose how they wish to report nitrogen use, or directs a specific process will not be determined until later this summer.

WPHA has been activity involved in the Central Valley Salts Coalition, which has been tasked by the Central Valley Water Board to make the recommendations for a nutrient management component for the Irrigated Lands Regulatory Program. Along with having BMPs be as a regulatory tool recommended by this group, we have successfully

introduced the CDFA FREP research data base of environmental BMPs to be included as effective work that has been completed by agriculture.

The “white papers” continue to be developed by the WPHA Soil Improvement Committee and IPNI. To date, four papers have been completed and have been distributed at various meetings. Specific crop nitrogen use papers are being developed for review by the Soil Improvement Committee.

WPHA was successful in these areas because of our constant presence at meeting with grower groups and regulatory agencies. WPHAs investment of not only human but financial resources into efforts like the Central Valley Salts Coalition provided us with a level of credibility that entities have not developed with either grower groups or the water board and its staff.

### **PROJECT IMPACTS:**

We believe that WPHAs collaborative effort in promoting the objectives of this project have had a substantial impact in moving the regulatory dialogue from one of numeric compliance to one of a narrative compliance program. When WPHA undertook this project, the water board staff as well municipal representatives of the Central Valley Salts Coalition were advocating for a numeric standard. Agriculture did not have a clear pathway forward in addressing nitrates as groundwater regulations were a new consideration. Since we have begun the educational process of meeting with grower groups and regulators, understanding of the reality of nitrate regulations being implemented and acceptance of BMPs as the most practical mechanism to accomplish this is now widespread.

As stated earlier, the Central Valley Water Board has adopted narrative compliance objectives through the use of BMPs for the groundwater program. While monitoring will be required, compliance will be based on documentation of proven management practices. This articulated in specific nutrient management requirements as well as through the overall documentation of all farm management evaluation plans. Through these plans growers will have the opportunity to document they are meeting a goal of improving ground water quality through the long-term use of BMPs.

When the project began, there was little knowledge of BMPs being developed and documented by grower groups, or of FREP. Research developed by FREP has now been accepted by the Central Valley Salts Coalition as proof of agriculture’s efforts to improve nutrient management practices. When this project began WPHA was the only voice at regulatory meetings advocating for the use of BMPs and informing agencies and growers that there was documented research that could demonstrate that BMPs were a feasible mechanism for grower utilization to improve nitrogen management, and applicable for a regulatory compliance program. Over the past year, the acceptance of the use of BMPs has become wide spread allowing for the opportunity of growers documenting their use as a compliance option, and allowing CCAs as individuals who are current on BMPs as being acceptable to certify their use and farm management plans.

While the State Water Board has put a hold on the use of the “Nitrogen Budget”, we were successful in helping to create a budget that growers and the Central Valley Water Board endorsed.

Today, both the Central Valley Water Board and State Water Board support the use of BMPs as the primary mechanism to demonstrate compliance with the various Irrigated Lands Programs. In addition, through WPHAs ongoing involvement with the Central Valley Salts Coalition we are working with the above agencies and growers in developing new legal language that would allow the use of BMPs to provide agriculture with more flexibility in meeting state and federal basin plan requirements, and so the use of BMPs will be accepted under scrutiny of legal standards.

Growers are now aware of BMPs and the importance of nitrogen management. They also recognize that the uses of BMPs are key to demonstrating their commitment to improving ground water quality. CDFA has indicated that they will begin a certification program for growers in the next year so they can document their management decisions. This is being advocated by growers to a large extent because they now understand the importance of using these practices and feel confident that they can now demonstrate their use in their management practices.

#### **OUTREACH ACTIVITIES:**

WPHA staff makes presentations on the importance of being able to document BMPs on an ongoing basis. Attached is a spreadsheet of a list of meeting where WPHA provided input on the use of BMPs for a regulatory program involving nutrients. The list is not meant to be comprehensive but a sample of the ongoing dialogue. Additionally, most meetings were policy discussion programs so did not include flyers for outside participation. I have included the fliers for the FREP and WPHA Nutrient conferences.

**Project Title: Nitrogen Research & Groundwater Management Education Program**  
**Grant Agreement Number: 10-0011-SA**  
**Project Leader:**

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**Start/End Date:** January 1, 2012 – December 31, 2014

**Location:** Sacramento, CA.

**County:** Carried out throughout California

### **Highlights**

- 1) BMPs are accepted by regulatory agencies as an acceptable tool for regulatory compliance programs
- 2) Grower coalitions received approval by Central Valley Water Board that a “Nitrate Budget” was an acceptable tool to demonstrate nitrate management planning.
- 3) Working with IPNI, WPHA completed four “white papers” on nitrate management for grower use.

### **Introduction:**

The Central Valley Regional Water Board has indicated its intention to promulgate regulations for the management of nutrient impacts on groundwater. Of particular interest is the role of nitrogen fertilizer in groundwater. Growers and members of the plant nutrient industry continue to be under pressure to demonstrate sound decision making in their nutrient application decisions. Seminars and conferences have proven to be effective in delivering new Best Management Practices research. However; despite the need to develop consensus on this issue, the fertilizer industry and growers had not coalesced on what additional steps can or should be taken in an environmentally safe and agronomically sound program for commercial agriculture, to satisfy concerns of the regulatory community with interests in water quality protection. The goal of this project was to bring the use of BMPs as a tool for regulatory compliance to the forefront, gain their acceptance by growers and regulatory agencies and develop tools that growers could use to demonstrate their effectiveness.

### **Methods/Management:**

WPHA staff makes presentations on the importance of being able to document BMPs on an ongoing basis. Attached is a spreadsheet of a list of meeting where WPHA provided input on the use of BMPs for a regulatory program involving nutrients. The list is not meant to be comprehensive but a sample of the ongoing dialogue. Additionally, most meetings were policy discussion programs so did not include flyers outside participation. I have included the fliers for the FREP and WPHA Nutrient conference.

## Findings:

The CVSC and CVRWB have both approved the use of BMPs as a regulatory mechanism to demonstrate nitrogen fertilizer management. The East San Joaquin Growers Coalition was the first grower organization to endorse their use as a regulatory tool, and all other grower coalitions have accepted the documentation of their use if there is a finding that their coalition members are impacting ground waters.

The CVRWB has deferred the approval of BMPs to CDFA. CVRWB has stated that appropriate BMPs must be able to demonstrate that their use will have a positive impact on control of leaching, or demonstrate improved uptake of nitrogen to prevent leaching; however, they have agreed that identification is better achieved at CDFA. WPHA has submitted the identified environmental BMPs developed through FREP research to the Central Valley Salts Coalition (CVSC) to be included in the approved list of BMPs by the Water Board. The CVSC has accepted this list of BMPs for inclusion.

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This past April, the CVRWB voted to accept this tool as part of the compliance requirements for the East San Joaquin Grower Coalition Lands Program. At that meeting, the board voted to accept the use of a “Nitrate Budget” for use to document nitrogen management planning. (Attachment 5) This decision was placed on hold for one year while other regulatory agencies discuss nitrogen tools such as nitrate tracking as the preferred model by the state. However, WPHA was successful in achieving its goal of it being approved by the Regional Water Board, and many agricultural coalitions have expressed their preference of the “Nitrogen Budget” as being more appropriate for their programs. A final decision will not take place until summer of 2014 which after the timeframe of this project is complete.

Despite the success of the project in developing acceptance of BMPs as a regulatory tool, much more work needs to continue. Growers will need to have more BMPs identified and have more access to more BMPs overall. In addition, more effective tools for growers to demonstrate how their use of a narrative tool is impacting positively the environment and in particular ground water.

Respectfully Submitted,



Renee Pinel  
WPHA President/CEO