

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 9-10, 2006

Prepared on December 27, 2005

ITEM NUMBER: 23

SUBJECT: Moss Landing Power Plant Backflushing Settlement, Monterey County,
Supplemental Environmental Projects, Request for Funding

KEY INFORMATION

| Moss Landing Power Plant Backflushing Settlement Fund | Project Fund | Monitoring Fund |
|--|--------------|-----------------|
| Initial Value of Fund Account | \$ 2,800,000 | \$950,000 |
| Encumbered by Contracts | \$ 1,403,323 | \$607,680 |
| Unencumbered Value of Fund | \$ 1,396,677 | \$342,320 |
| Funds requested | \$356,640 | \$22,425 |

This Action: Approve proposed projects for funding

SUMMARY

On July 11, 2003, the Central Coast Regional Water Quality Control Board (Water Board) approved criteria for evaluating supplemental environmental projects proposals for funding from the Moss Landing Power Plant backflushing settlement fund. The court-approved settlement requires these funds be spent: (1) to improve water quality primarily via projects that reduce pollution from agricultural sources and (2) to monitor the effectiveness of those projects. Both the Board-approved criteria and the criteria contained in the consent judgment were used to rank proposals and allocate funds to individual projects. The approved criteria included a provision for Board review of awards greater than \$50,000.

The purpose of this item is to obtain Water Board approval for two projects above \$50,000. The first project requests \$179,543 for technical assessment and project design for wetland and stream crossing restoration. The second project requests \$199,570 to test the effectiveness of a management strategy to reduce pesticide application in strawberry fields.

The first project will benefit water quality by providing new and restored wetland habitat and improved stream crossings. We expect this project to significantly reduce sediment and nutrient loading to surface waters.

The second project will benefit water quality by designing methods to grow strawberries while reducing pesticide applications. The project proponent will be working with one of the largest strawberry growers in the region, such that if these methods prove effective, they will be implemented in several areas throughout our region.

DISCUSSION

Background

The Regional Board and Pacific Gas & Electric (PG&E) agreed to settle a dispute regarding alleged violations of National Pollutant Discharge System permits (NPDES permits) held by PG&E from 1974 through 1998 for the company's operation of the Moss Landing Power Plant in Monterey County. The alleged violations supported assessment of civil liability pursuant to Water Code Section 13385.

PG&E and the Water Board agreed to settle the alleged violations via a consent judgment, which required PG&E to provide \$5,000,000 for the following supplemental environmental projects:

- a) Payment of \$2,850,000 to establish a "Non-Point Source Projects Fund" through the Community Foundation for Monterey County. A portion of the fund is used to administer the funding program. This fund is used to pay for education and on-farm management practices that prevent and reduce polluted run-off.
- b) Payment of \$950,000 to establish a "Nonpoint Source Monitoring Fund" with the Community Foundation for Monterey County. These Funds pay for water quality monitoring associated with determining the effectiveness of on-farm management practices, and to pay for watershed level monitoring.
- c) Payment of \$950,000 to establish a Fund with the Community Foundation for Monterey County to supplement the Central Coast Ambient Monitoring Program's (CCAMP) activities in Monterey Bay and associated watersheds; and
- d) Payment of \$250,000 to fund Water Board staff oversight costs.

The Water Board approved criteria for allocation of these funds on July 11, 2003 (Attachment 1).

Funding Cycle and Status

The Water Board approved the first grants on December 2, 2004. Beginning in 2005, there will be two funding cycles per year until approximately 2007, or until the funds are fully allocated. The Settlement Funds were invested in bonds that mature every six months.

Attachment two provides a summary of all funded grant projects to date. Approximately \$1,390,000 remains in the project fund and a total of \$340,000 remains in the monitoring fund. For this current funding cycle, both proposed projects exceed the \$50,000 threshold. Projects with budgets exceeding \$50,000 require Water Board approval.

Summary of Recommended Grants

Proposals

1. Carneros Creek Wetland Restoration and Stream Crossing.

The Agriculture and Land-Based Training Association (ALBA) requests \$179,543 from the Projects fund for technical assessments and project designs for wetland and stream crossing restoration. Implementation of these technical designs will be paid with Department of Agriculture's Natural Resources Conservation Service (NRCS) Wetland Reserve Program funds, thereby leveraging Moss Landing Settlement Funds. The NRCS will contribute \$250,000 for implementation. Attachment three provides the scope of work and line item and task budgets.

ALBA conducts extensive agricultural outreach and education in Monterey County. They focus on education to protect and improve water quality, especially among Latino farmers, land managers and landowners. The ALBA Farm Training and Research Center at the Triple M Ranch is a 195-acre farm property located on Carneros Creek, less than one mile from the Elkhorn Slough. Under ALBA management for nearly four years, the farm has become a training center and model farm for soil conservation, water quality improvements, habitat enhancement and innovative farming practices. Local, limited-resource farmers are able to lease land to explore organic production and witness first-hand conservation working in harmony with crop production. The farm hosts field days and tours for hundreds of farmers and others each year.

This project will develop a restoration design for a 4,000-foot reach of Carneros Creek at the Triple M Ranch, which will improve connectivity with 40 acres of adjacent wetlands and enhance floodplain processes that improve water quality. This reach of Carneros Creek was channelized for farming sometime before 1917. The ditched channel was maintained by dredging during the last century, resulting in the placement of dredge spoil levees along both

banks. Fourteen acres of farm fields adjacent to the creek have now been removed from production for the purpose of wetland restoration. This set the stage for a substantial freshwater wetland restoration project along a principal tributary to Elkhorn Slough.

ALBA enrolled in the US Department of Agriculture's NRCS Wetland Reserve Program, which will establish a conservation easement to protect the wetlands and wildlife habitat, and ensure water quality improvement. The NRCS identified this project as appropriate for its Wetland Reserve Program and has ranked it high enough to receive funding. The Wetland Reserve Program will pay for project construction costs, including earth moving, water control structures, an improved stream crossing, and plant materials for re-vegetation. The Wetland Program will provide \$250,000 for the project. NRCS requires that engineering designs be developed prior to enrollment. This ensures that a viable plan to protect the wetlands is in place prior to the NRCS purchasing an easement.

If the Water Board approves, funds from the Moss Landing Settlement Projects Fund will pay for the engineering designs. Key engineering design elements include: (1) A wetland restoration engineering design for earth moving and re-vegetation to restore channel and seasonal wetland geomorphology, (2) an engineering design for a combination water-level-control-structure and bridge at the current location of a wet ford. The ford is a key access road to the Triple M Ranch and adjacent properties.

ALBA estimates that the project will reduce suspended sediment, total nitrogen and orthophosphate concentrations in Carneros creek by 30%. In addition to direct water quality benefits, this project will serve as a model for wetlands and farming operations. Hundreds of visitors each year, including growers and landowners participating in water quality short courses, will view the project site from several points on the property.

2. Trap cropping in Northern Monterey County strawberry production fields as a non-point source pollution prevention strategy

The University of California at Santa Cruz is requesting \$177,097 from the Moss Landing Settlement Projects fund and \$22,425 from the Monitoring fund, for a total request of \$199,570. If the Water Board approves, the Project funds will pay for studying the effects of planting alfalfa trap crops directly into the strawberry fields. The alfalfa attracts the lygus bugs (harmful to strawberry crops), thereby decreasing populations on strawberry plants. The alfalfa also acts as a supportive environment for beneficial insects. The Monitoring fund will pay for toxicity testing to determine if reduced pesticide application significantly reduces toxicity in strawberry field run-off.

California strawberry production is a growing industry, and ranks 7th among all California-grown commodities in 2003. Nearly 30% of California's strawberry production is produced in Monterey County, almost exclusively in the Pajaro River, Elkhorn Slough, and Salinas River and associated watersheds.

In 2002, California strawberry production used a total of 8,187,475 lbs of pesticide active ingredients, of which over 3.7 million lbs (46%) were used in the associated watersheds of Santa Cruz and Monterey Counties (DPR, 2002). Of this total, over 120,000 lbs of active ingredient organophosphate and carbamate neurotoxic insecticides (in addition to nearly 2,000 lbs of active ingredient of the synthetic pyrethroid insecticides) were applied for insect control. This pesticide usage is an attempt to control the damage caused by the western tarnished plant bug, *Lygus hesperus*, the key economic fruit pest of strawberries in the central coast counties. Lygus bugs feeding on strawberries results in an undersized, cosmetically degraded fruit unacceptable in fresh marketing.

Typical control programs entail 6-8 applications of insecticide per season at two-week intervals (June-September). Detectable

residues of some of these water-soluble insecticides, including diazinon and chlorpyrifos appear to cause toxicity to freshwater aquatic organisms, as seen in ambient tests of agricultural drainage water in Monterey County (Anderson et al. 2003, Hunt et al. 2002). Pesticide pollution appears to cause this mortality and may interact with other factors to impact macro invertebrates and the aquatic food chains in regional watersheds associated with strawberry production. Pesticide pollution may contribute to the creation of toxic hot spots associated with agricultural and other activities.

As described in our December 2, 2005 staff report discussing the implementation of on-farm management practices, controlling pesticide residue from farms is difficult. Over 95% of growers that filed their Notice of Intent for the Agricultural Waiver program reported following pesticide label instructions, correct application rates and proper training for workers. However, the first review of data from the Agricultural Waiver program shows that 8 out of 12 sites in the lower Salinas showed 100% toxicity for the *Ceriodaphnia dubia* 7-day toxicity test. Under this scenario, reducing pesticide use below that recommended on pesticide label will likely be needed. However, there is an inherent risk to crops in reducing pesticide use, without proven effective pest control.

The proposed project will demonstrate alternative pest control methods on conventional and organic strawberry fields by planting alfalfa trap crops directly into the strawberry fields. The alfalfa will attract and suppress lygus bugs and act as a supportive environment for beneficial insects. Previous research by the project proponents has indicated that appropriate application of this technique economically reduces lygus bug damage on organic strawberry farms managed by Pacific Gold Farms (Watsonville, CA), when compared with the organic strawberry grower's whole field vacuuming program without trap crops.

Although UC Santa Cruz has documented the profitable use of trap crops for lygus bug

control in organic strawberry production, they have not yet documented the reduction of insecticide use resulting from this practice on conventional acreage. With the Moss Landing Settlement funds, the University of California Santa Cruz will demonstrate the potential of trap cropping to reduce lygus bug damage, reduce neurotoxic and synthetic pyrethroid insecticide use, and reduce nonpoint source pesticide residues in runoff water and soil on conventional (non-organic) strawberry farms.

Pacific Gold Farms personnel have reported up to a 50% reduction in neurotoxic insecticide use with trap crops on conventional acreage. They have now proposed planting an additional 125 acres of conventional strawberries with alfalfa trap crops for the 2006 season. The trap crops will be located on associate grower's farms in the Elkhorn Slough and/or lower Salinas areas. This study will document the effectiveness of trap crops to reduce lygus bugs and will document the amount of reduced pesticide application rates as a result of the trap crops. Water quality monitoring will determine the amount of toxicity (if any), and determine if the source of the toxicity is related to the two pesticides diazinon and/or chlorpyrifos. Attachment 4 provides the scope of work and budget for this project.

Project Linkage and Benefits

Both proposed projects, and all projects proposed for funding via this settlement, link together as part of a larger effort to affect water quality change in the Moss Landing area. All grantees coordinate their projects, such that activities from one grant compliment activities adjacent or similar to other grants. For example, previous funds allocated for education and coordination of growers are linked with grants that implement on-farm management practices. This creates the vital link between teaching growers the importance of implementing pollution prevention practices, and then taking steps towards the actions necessary to implement those practices.

SUMMARY

The currently proposed projects have multiple benefits. The wetland and stream restoration

proposal will affect water quality both directly through implementation and indirectly through education and training. The pesticide management study will not only reduce pesticides on one farm, but will also provide data and methodologies for other strawberry growers to reduce chemical applications.

RECOMMENDATION

Staff recommends that the Water Board approve funding the proposed projects:

1. The ALBA wetland and stream crossing design project for \$179,543
2. The UC Santa Cruz alfalfa trap cropping project for \$199,570

ATTACHMENTS

1. PG&E fund criteria
2. Summary of projects funded to date
3. Scope of Work and Budget for the Agriculture and Land-Based Training Association
4. Scope of Work and Budget for UC Santa Cruz

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