Hines Horticulture®

December 29, 2004

VIA FACSIMILE AND FIRST CLASS MAIL

John Minan
California Regional Water Quality Control Board
San Diego Region 9
9174 Sky Park Court, Ste. 100
San Diego, CA 92123-4340

Re: Additional Comments on October 15, 2004 Rainbow Creek Nutrient TMDLs

Dear Chairman Minan and Members of the Board:

On behalf of Hines Nurseries, I want to thank you for the opportunity to provide further comments on the October 15, 2004 *Public Review Draft Basin Plan Amendment and Technical Report for Total Nitrogen and Total Phosphorus Total Maximum Daily Loads (TMDLs) For Rainbow Creek*. We appreciate staff's consideration of our prior comments, both submitted in writing and presented verbally at Regional Board workshops and hearings.

We firmly believe that Hines Nurseries has not caused or contributed to a condition of pollution, contamination, or nuisance in Rainbow Creek. To the contrary, Hines' actions, and those of its predecessor, have significantly improved the condition of Rainbow Creek downstream from the nursery. Hines has continued to operate the tailwater recovery system originally installed by Flynn-Rainbow Nurseries to reduce nutrients in Rainbow Creek. The effectiveness of this recovery system was discussed in the Regional Board-funded *Final Report of the Rainbow Creek Non-Point Source Nitrate Reduction Program* dated January 31, 1997. The photos that Craig Carlisle showed to the Regional Board during the December 8, 2004 hearing were actually part of the existing system; we continue to diminish use of portions of the creek with each completed phase of construction. The system was originally constructed using a 319(h) grant funded through the Regional Board as a demonstration of "the potential for reducing nursery runoff with an irrigation system retrofit." As you will

see in the attached pages from the Final Report, it was concluded that Flynn-Rainbow Nurseries was one of three major nurseries (along with Hines Irvine Nursery) with "very successful tailwater recovery and recycling programs." (See Report, p. 44)

Since purchasing the property, Hines has designed and completed three phases of the construction of an improved system to serve our 250-acre commercial nursery. We are scheduled to complete the $2.6 million project between May and October 2005.

Hines Nurseries would like to reiterate a number of recommendations we presented in our letter dated December 1, 2004.

- The Regional Board should modify the draft TMDL to incorporate an interim numeric target for biostimulatory substances;
- The Regional Board should adopt final numeric targets for biostimulatory substances only after USEPA Region 9 and the State Water Resources Control Board have completed the Development of Nutrient Criteria in California;
- The implementation section of the Draft TMDL should be revised to respond to the County's request for a less prescriptive and more flexible program;
- As part of the implementation program, the Regional Board should conduct a true assimilative capacity study to determine load allocations for nutrients in Rainbow Creek; and
- The Regional Board should revise the source assessment, assign a load allocation for atmospheric deposition, and work with the California Air Resources Board and the San Diego County Air Pollution Control District to use their authorities to address a number of the true sources of pollution in Rainbow Creek.

Hines respectfully requests that the preceding comments, along with our previous comments, be seriously considered by staff in revising the Draft TMDLs for the Regional Board's evaluation and adoption. Further, we request that you give particular consideration to the Additional References attachment submitted with the December 1st letter. This list provides bibliographical information on over two dozen articles and existing TMDLs dealing with nutrient criteria and could prove to be a valuable resource for staff and the Board in further work on a Rainbow Creek TMDL.

Hines Nurseries is committed to working with the Regional Board to achieve its nutrient goals for Rainbow Creek, and continues taking responsible action toward those goals. Thank you again for the opportunity to submit these comments.

Sincerely,

HINES HORTICULTURE

Jesse Westrup

Jesse Westrup
General Manager
Hines Fallbrook

cc: Linda LeGerrette, RWQCB
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Rainbow Creek Non-Point Source Nitrate Reduction Program

Final Report

January 31, 1997

Mission Resource Conservation District
Fallbrook, California

Contract Manager:	Greig Peters	Date
Project Director:	Judith Mitchell	3/31/97 Date
Quality Assurance Officer:	Matthew Haynes	3/31/97 Date

Chapter 1 - Summary, Conclusions and Recommendations

Summary

The Rainbow Creek Non-Point Source Nitrate Reduction Program (Program) was initiated by the Mission Resource Conservation District (District) in 1991 to address non-point source nitrate loading in Rainbow Creek. Rainbow Creek, a tributary of the Santa Margarita River, drains a watershed of approximately 4,382 acres in northwest San Diego County, California. Water quality studies starting in 1975 showed increases in nitrate (NO_3) levels in the Creek. Subsequently, increased nitrate levels were detected in the Santa Margarita River and the Santa Margarita Estuary located on the United States Marine Corps Base at Camp Pendleton. A study prepared in 1988 by the firm of Leedshill-Herkenhoff for Camp Pendleton indicated nitrate levels in Rainbow Creek surpassing 300 ppm in the period 1986 to 1987. Because much of Camp Pendleton's water supply is obtained from ground water re-charged by the Santa Margarita River, elevated nitrate levels in both Rainbow Creek and the Santa Margarita River caused the Marine Corps great concern. At the behest of Camp Pendleton, the District developed this project as a non-regulatory method to lower nitrate levels in both Rainbow Creek and the Santa Margarita River.

In addition to the high levels of nitrate, phosphorus is also thought to exist at elevated levels in Rainbow Creek. The combined loading of both nitrate and phosphorus from Rainbow Creek contribute to the existing eutrophication of the lower Santa Margarita River and the Santa Margarita Estuary. The State Water Resources Control Board lists the Santa Margarita River Lagoon as an impaired water body due to eutrophication.

The primary objective of this project was to demonstrate methods which can be used to effectively minimize non-point source (NPS) loadings of nitrates and phosphates into Rainbow Creek. This will be accomplished through the following:

1. Increase community awareness of the nature and importance of watersheds through seminars, literature and the introduction of the "Adopt a Watershed" program to Vallecitos School in Rainbow.

2. Demonstrate to the community the potential for reducing nursery runoff with a tailwater recovery system.

3. Demonstrate to the community the potential for reducing nursery runoff with an irrigation system retrofit.

4. Provide the community with information on proper septic tank maintenance and the impact of septic system operation on water quality.

5. Provide the community with information on the proper application of crop nutrients.

6. Utilize the District's existing Mobile Irrigation Laboratory to demonstrate the importance of irrigation system uniformity and irrigation scheduling in reducing runoff.

Effectiveness of the program will be determined through the following:

1. Weekly water testing at five locations in the Rainbow Creek Watershed. Water testing parameters include nitrate (NO_3^-), phosphorus (PO_4^{3-}), electrical conductivity (EC_w) and pH.

2. Monitor creek flow with the installation of a stream gauging station.

Conclusions

The goal of this project when it was written in 1991 was to reduce the amount of nitrate discharged into the Santa Margarita River by Rainbow Creek to levels less than 45 ppm NO_3^-. This goal was to be accomplished through the public education programs and demonstration projects detailed above. While the programs and projects were applicable throughout the Rainbow Creek Watershed, emphasis in this project was given to Rainbow Valley. By examining Figure 1, it would at first appear that the project did not entirely meet its goal. Nitrate discharge into the Santa Margarita

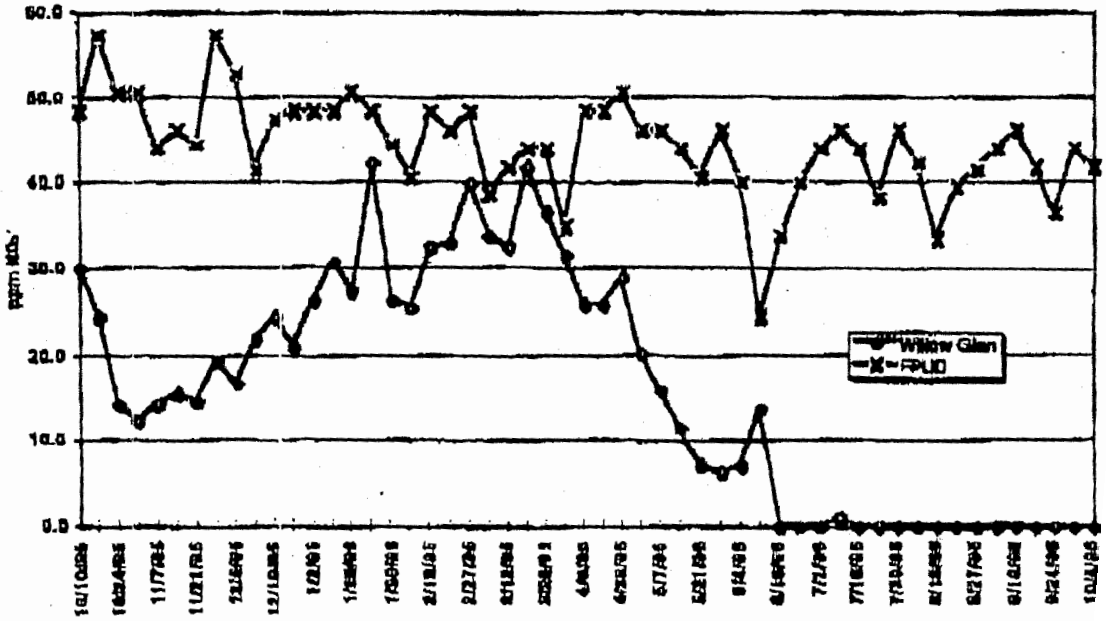

Figure 1 Nitrogen content expressed as nitrate (NO_3^-), of water samples collected at site #4, Willow Glen and site #5, FPUD, October 10, 1995 - October 8, 1996.

River by Rainbow Creek (as measured at site #5, FPUD), exceeded 45 ppm for a large portion of the monitoring period.

However, a closer look at Figure 1 shows that nitrate levels at collection site #4, Willow Glen, were below 45 ppm for a majority of the monitoring period. Part of the nitrate reduction at the Willow Glen collection site was due to the cessation of stream flow from Rainbow Valley. Rainbow Creek stopped flowing completely at the Oak Crest site on July 1, 1996 and with one exception (September 20-28), did not resume flow again until a 0.85 inch rain event occurred on October 30, 1996. However, stream flow from Rainbow Valley seemed to have little effect on total nitrate loading into the Santa Margarita River, with overall nitrate levels measured at site #5, FPUD, remaining relatively stable throughout the monitoring period. This indicates that a steady amount of nitrate loading is occurring between site #4, Willow Glen and site #5, FPUD (the confluence of Rainbow Creek and the Santa Margarita River). The distance between these two sites is approximately one mile.

Overall nitrate loading from Rainbow Valley has been reduced, although further reduction efforts are still necessary. Further work needs to be done to reduce nitrate levels from Rainbow Valley and the area between collection sites #4 and #5 in Fallbrook.

Chapter 8 - Tailwater Recovery System Seminar and Demonstration

To heighten grower and public awareness of the benefits of tailwater recovery and re-use, the tailwater water recovery system installed by Flynn-Rainbow Nurseries of Rainbow served as a demonstration model for this program.

The initial stages of Flynn-Rainbow Nurseries' tailwater recovery program started in November, 1986 with contact by Soil Conservation Service (SCS) staff from the Fallbrook Field Office to discuss runoff and runoff water recycling. This initial contact proved successful and by August, 1987, a preliminary location for a tailwater recovery pond was chosen and surveyed by SCS and Flynn-Rainbow staff. The chosen site was adjacent to Rainbow Creek on the southwest corner of the nursery, bordering Huffstatler Street in Rainbow. By January, 1988, plans were completed and finalized for the tailwater pond and return system. In the Fall of 1990, Flynn-Rainbow Nurseries committed over $100,000 to a comprehensive water conservation/water re-use program. This commitment of money allowed construction to proceed on the tailwater pond and return system. By July of 1991, a 2.5 acre-feet tailwater recovery pond and return system pumping plant were installed and in use. The system has been in continuous service since that time.

To publicize Flynn-Rainbow Nurseries' conservation efforts, a tour of the nursery growing grounds and a demonstration of the tailwater recovery system was held on October 21, 1992. The following individuals participated in the tour and demonstration:

George Elorst, Mission RCD Board of Directors
Nils Peterson, Mission RCD Board of Directors
Ed Rogers, Marine Corps Base Camp Pendleton
Luis Martinez - Flynn - Rainbow Nurseries
Mick Welti - Flynn-Rainbow Nurseries
LeAnne Hamilton - Eastern Municipal Water District
Larry Rogers - Marine Corps Base Camp Pendleton
Bill Gradie - USDA Soil Conservation Service, Salinas
C.P. Wilson - Mission RCD Board of Directors
Joe Jackson - Fallbrook Public Utility District
Ruth Beglin - Santa Margarita River Watermaster's Office
Paul Zellman - Mission RCD Board of Directors
Valerie Mellano - University of California Cooperative Extension
Fred Buck - Rainbow Planning Group
Vic Smothers - USDA Soil Conservation Service, Fallbrook
Howard Mueller - USDA Soil Conservation Service, Escondido

A comprehensive best management practices (BMP) guide was provided to the project by Farm Advisor Dr. Valerie Mellano of University of California Cooperative Extension, San Diego County. The guide, entitled *Management Options for Non-point Pollution - Greenhouse & Container Crop Industries*, contains an excellent section on tailwater recovery and re-use. The guide also contains sections on irrigation water management, crop nutrients, ground water contamination and integrated pest management. 300 copies of the guide (in English) were printed. The tailwater recovery and re-use section was excerpted and the text was translated to Spanish. 200 copies of the Spanish version were printed. Copies of *Management Options for Non-point Pollution - Greenhouse & Container Crop Industries* and *Sistemas para la Recuperación de Aguas Desperdiciadas para Invernáderos y Viveros*, can be found in Appendix E, page 62 of this report.

In February of 1997, a comprehensive non-point source pollution workshop for the ornamental industry of San Diego County was presented by the District and the California Ornamental Research Federation (CORF) at the District's office in Fallbrook. Meeting notice pamphlets (see Appendix E) were mailed out three weeks prior to the meeting. The workshop attracted 43 participants, 20 of which were growers. A prime component of this meeting was a focus on grower experiences with tailwater recovery systems. George Gutman of Hines Nurseries in Irvine, Mick Welti of Flynn-Rainbow Nurseries in Rainbow and Frank Chavez of El Modeno Gardens in Irvine served on a grower panel and outlined their experiences with tailwater re-use. All three of these large nurseries have very successful tailwater recovery and recycling programs.