

ASSIGNMENT SUMMARY FOR MICHAEL COLEGROVE

23 NOVEMBER - 9 DECEMBER 2015

Overview

This assignment had its beginnings in July 2015 while I was on a previous F2F assignment dealing with PERSUAP documentation. During the interviews with some staff members at University of Eldoret (UoE) it was apparent that poor physical infrastructure and lack of performing laboratory equipment would hinder educational efforts dealing with natural resource management and environmental studies.

The USAID Farmer-to-Farmer program (F2F) had a on-going MOU with the UoE but it only dealt with Food Security issues. The F2F implementer, (Catholic Relief Services - CRS) decided to open discussions with the UoE to enlarge the MOU to cover the School of Agriculture and Biotechnology. These discussions were successful.

Three areas were identified as needing closer study;

- (1) To carry out a review of the entire UoE educational structure to strengthen its capacity to address environmental issues.

- (2) Strengthening linkages between the School of Agriculture and Biotechnology, and the School of Natural Resource Management and the School of Environmental Studies.

- (3) An evaluation of the Soil Science Department laboratory infrastructure and equipment. This would set out a procedure to be extended to all Departments within the School of Agriculture and Biotechnology.

From November 23rd through December 9th, I interviewed a total of 33 persons, of which 11 were women in administrative and technical leadership roles. The first week was spent in Nairobi interviewing agricultural organizations working in the private sector or providing NGO and GOK support to the industry. A single day trip was taken to the KEPHIS offices in Lanet.

[Several interviews had to be cancelled due to the Papal visit to Nairobi on November 26/27.]

Interviews were held from November 30th through December 9th at the University of Eldoret (UoE), and with one day in Kitale, at the KALRO station and the Kenya Seed Company.

Two final interviews were held, one at the Dryland Seed Company in Machakos, and a final discussion with DANIDA officers in Nairobi.

A complete schedule for the assignment is shown in a separate document.

Preliminary findings

It was apparent from the very start that Kenya does not lack from extremely well prepared and capable administrators, scientists, or educators. Further, the technical support personnel at all levels are well trained, motivated, and supported.

Everyone mentioned above recognizes the value of education and access to modern technology and training.

Kenya has been liberalizing its economy for years and has put into effect the new governmental "Counties" to help localize decision making and promote business.

The UoE has grown rapidly since its inception, and today nearly 24,000 students are enrolled. However, this growth has outstripped the UoE physical plant and its capacity to replace or purchase new equipment to meet demands of better education in a changing scientific and agricultural world.

Possible approaches

1. A physical evaluation is needed of the departments of Animal Science; Biotechnology; Soil Science; Seed, Crops and Horticulture; Family and Consumer Sciences; Natural Resources; and Environmental Studies. From these studies, a list of their needs will be built and an estimated total budget developed.
2. Since every single department wants their own lab, it might be better to suggest some sort of central building to be designated as a "diagnostic centre" [or 'incubation centre']
3. All of the above requests will have to be put aside until the UoE administration can realign itself along the lines of major American, and European, universities have developed in the last 20 years to address environmental issues.
4. Currently the World Bank and others are using the phrase "Centers of Excellence" as a standard for providing financial and technical support. Once the UoE can show it has a valid and viable reorganization, then the a "donor" agency, or program, or foreign government can be approached for financial support for the physical needs of the UoE.
5. For this funding to happen UoE will have to engage a first-rate "Grant Proposal Writer". Perhaps Farmer-to-Farmer can supply that person - or team.

It should be stressed that the above proposals do not suggest there will be any reduction in staffing or in courses offered during or after a "realignment".

Suggested immediate action

1. CRS and the UoE administrators should meet to affirm a Scope of Work for Dr. Ronald Taskey and one for Mr. Craig Stubler of the California State Polytechnic University.
2. Dr. Taskey will work with the administrative staff at UoE, and Mr. Stubler with the Soil Science Department.

Their assignments should be simultaneous, and commence in the last week or so of January 2016. (Provisional SOWs and CVs are attached.)

3. After Mr. Stubler completes his report, CRS should begin a search for a volunteer to work with the Seed Technology unit at UoE. (Mr. Stubler will be able to provide guidance on the type of preparation

for additional volunteer assignments dealing with equipment and infrastructure evaluations).
Suggestions for this Seed Technologist assignment are also attached.

Provisional Scope of Work and Schedule for Dr. Ronald Taskey

Day

1. Wed -CRS office for administrative details (1/2 day)
2. Thu -Visit Nairobi University for an understanding of its organization and agricultural curricula, and range of equipment/procedures currently being used at least 1/2 day
3. Fri - Visit to the National Agricultural Laboratories (Nairobi) range of equipment/procedures currently being used and what they would like to see in a new graduate: at least 1/2 day
4. Sat - Nairobi
5. Sun - Nairobi
6. Mon - Drive to Naivasha:
 - Visit to KALRO (Kenya Agriculture and Livestock Research Organization) at Naivasha to see the range of equipment/procedures currently being used and what they would like to see in a new graduate
 - Lunch
 - Visit to Egerton University (Njoro) for an understanding of its organization and agricultural curricula, and range of equipment/procedures currently being used
 - Night in Nakuru
7. Tue -Drive to Eldoret
 - Write up notes at Hotel Noble
8. Wed - University of Eldoret
 - Introductions to: [1/2 hour each?]
 - Dr. Ruth Otunga: Dep. Vice-Chancellor of University
 - Dr. Margret Omami: Dean; School of Agriculture and Biotechnology
 - Interviews with: [Remainder of day]
 - Dr. Wilson Ng'etich Head of Dept. of Soil Science - and Dept. lecturers and support staff
 - Dr. Nicholas Rop: Head of Dept. of Seed, Crops and Horticulture - and Dept. lecturers and support staff
9. Thu - University of Eldoret
 - Interviews with: [2 hours each]
 - Dr. Harold Rachuonyo: Head of Dept. of Animal Science - and Dept. lecturers and support staff
 - Dr. Oliver Kiplagat: Head of Dept. of Biotechnology- and Dept. lecturers and support staff
 - Dr. Lazare Etiegni: Dean of School of Natural Resources- and Dept. lecturers and support staff
10. Fri - University of Eldoret
 - Interviews with: [2 hours each]
 - Dr. Vincent Sudoi: Dean of Environmental Sciences- and Dept. - and lecturers and support staff
 - Dr. Gertrude Were: Head of Dept of Family and Consumer Sciences - and lecturers and support staff
 - Dr. Linnet Gohole (Mrs.): Director of Research and Innovations
- 11/12. Sat/Sun (Eldoret)
 - Reports and seminar preparation
13. Mon - University of Eldoret
 - Open Seminar - Morning session to explain history of Cal Poly's revision (using the chapter from the Baveye-Soil Science book since all principal staff will have read it before you arrive)
 - Lunch
 - Afternoon for discussions

14 - 15. Tue - Wed

- "Closed" meeting (s?) with key UoE administrators and School of Agriculture departments to discuss details and relevant points

16 Thu

- Return to Nairobi
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17. Fri

- CRS office to close accounts and have a CRS staff meeting on the assignment
- Fly out of Kenya toward the USA that night
- or plan to stay in Kenya for tourist activities (ie, game park)

Points to consider:

It might be that Dr Taskey would want to give the opening Seminar on the 8th day (a Wednesday) and then interview the University staff following the schedule above, and then close out the visit with the "Closed meetings".

It is my (Mike Colegrove) opinion that the UoE administration will need several months of internal discussions and debate to reach any decision to reconsider the changes at the UoE.

If Dr Taskey were to stand ready to return for a shorter assignment in June/July 2016, this might be one way to give the UoE time to reach some sort of agreement to change. Then Dr. Taskey could return as a moderator rather than the planner.

Possible deliverables: (To be refined by Dr. Taskey and the UoE before the CRS begins the recruitment procedures)

1. A major presentation on university restructuring in the USA over the last 20 years.
2. A major presentation on reorganizing the agricultural curricula around natural resource and environmental issues.
3. Suggested list of changes each department in the School of Agricultural and Biotechnology could make to strengthen their relevance to environmental issues.
4. Suggest options on how the School of Natural Resources, and School of Environmental Sciences can collaborate more closely with the School of Agriculture.
5. Proposed ways that all Schools and Departments can reduce the duplication of scientific equipment within the UoE.

Provisional Scope of Work and Schedule for Mr. Craig Stubler

Day

1. Wed -CRS office for administrative details (1/2 day)
2. Thu -Visit Nairobi University for understanding of its organization and agricultural curricula : at least 1/2 day
3. Fri - Visit to the National Agricultural Laboratories (Nairobi) and what they would like to see in a new graduate : at least 1/2 day
4. Sat - Nairobi
5. Sun - Nairobi
6. Mon - Drive to Naivasha:
 - Visit to KALRO (Kenya Agriculture and Livestock Research Organization) at Naivasha to see the range of equipment/procedures currently being used, and what they would like to see in a new graduate
 - Lunch
 - Visit to Egerton University (Njoro) for understanding of its organization and agricultural curricula, and range of equipment/procedures currently being used
 - Night in Nakuru
7. Tue -Drive to Eldoret
 - Write up notes at Hotel Noble
8. Wed - University of Eldoret
 - Introductions to: [1/2 hour each?]
 - Dr. Ruth Otunga: Dep. Vice-Chancellor of University
 - Dr. Margret Omami: Dean; School of Agriculture and Biotechnology
 - Interviews with: [Remainder of day]
 - Dr. Wilson Ng'etich Head of Dept. of Soil Science - and Dept. lecturers and support staff
 - Dr. Nicholas Rop: Head of Dept. of Seed, Crops and Horticulture - and Dept. lecturers and support staff
9. Thu - University of Eldoret
 - Work with Dr. Wilson Ng'etich Head of Dept. of Soil Science - and Dept. lecturers and support staff
 - in the design of new soil science teaching lab
 - create a list of equipment needed based on weekly undergraduate student loads
 - create a list of equipment needed for advanced student's research work
 - insure that sufficient spare parts and ancillary material are included in
 - make recommendations on infrastructure (electric systems, water, waste disposal, etc.)
10. Fri - University of Eldoret
 - Work with Dr. Wilson Ng'etich Head of Dept. of Soil Science - and Dept. lecturers and support staff
 - Design the soil science teaching lab
- 11/12. Sat/Sun (Eldoret)
 - Refinement of design the soil science teaching lab
13. Mon - University of Eldoret
 - Work with Dr. Wilson Ng'etich Head of Dept. of Soil Science - and Dept. lecturers and support staff
 - Design the soil science teaching lab
14. Tue University of Eldoret
 - Work with Dr. Wilson Ng'etich Head of Dept. of Soil Science - and Dept. lecturers and support staff
 - Design the soil science teaching lab

15. - Wed Meeting with key UoE administrators and School of Agriculture departments to discuss details and relevant points on the soil lab

16. Thu Return to Nairobi

17. Fri

- CRS office to close accounts and have a CRS staff meeting on the assignment
- Fly out of Kenya toward the USA that night
- or plan to stay in Kenya for tourist activities (ie, game park)
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Possible deliverables: (To be refined by Mr. Stubler and the UoE before the CRS begins the recruitment procedures)

1. A complete review of the infrastructure needs of the Soil Science laboratory and field operations.
 - Electricity, back-up generator, surge protection
 - Water supply and purification
 - Gas supply and safety regulators
 - Sterilization equipment for tools, soil, plant materials
 - Waste disposal off chemicals, water, soil, plant materials
2. A list and evaluation of all the current equipment in the Soil Science Department
3. Develop a list of the equipment needed to bring the soil science up to date
4. An assessment of the amount of equipment and materials needed per year based on enrollment projections
5. A general laboratory survey of the other departments within the School of Agriculture and Biotechnology

Résumé

RONALD D. TASKEY

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OVERVIEW

- Four decades in higher education: teacher of soil science, geology, and forestry; undergraduate and graduate student advisor; researcher; curriculum developer and program coordinator.
 - 23 seasons of applied professional experience in soils and related natural resources.
 - Author of *The Graduate Student's Backpack: It's What You Need on the Research Path*, two major soil surveys covering > 600,000 ha., numerous professional reports.
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EDUCATION

Ph.D., Soil Science, 1978, Oregon State University.

Thesis title: "Relationships of Clay Mineralogy to Landscape Stability in Western Oregon." Integrated minor in geology and watershed.

M.S., Forestry, 1972, University of Montana.

Thesis title: "Soil Contamination at Anaconda, Montana: History and Influence on Plant Growth."

B.S., Forestry, 1970, University of Montana.

Technical and supervisory training schools for work in space cabin simulators, 1963-1967. United States Air Force.

ACADEMIC EXPERIENCE

2006—present. Professor Emeritus, Lecturer (part-time). Earth and Soil Sciences Department and Natural Resources Management and Environmental Sciences Department, California Polytechnic State University, San Luis Obispo, CA.

Courses taught:

Forest and Range Soils SS 440

Soil Morphology SS 321

Research Planning SS 501

Physical Geology GEOL 201

Sustainable Forestry and Environmental Practices FNR 475 (summers, teaching limited to units on landscape stability and soil erosion)

Jul. 2001–2006. Professor Emeritus, Faculty Early Retirement Program (FERP) (1/2-time teaching and support).
Earth and Soil Sciences Department, California Polytechnic State University, San Luis Obispo, CA.

Courses taught:

Forest and Range Soils	SS 440	4 units
Research Planning	SS 501	4 units
Introductory Soil Science	SS 121	4 units
Soil Physics	SS 432	5 units
Geomorphology	SS 323	4 units
Physical Geology	Geol 201	3 units

Apr.–Jun. 2001. Visiting professor. St. Stephens University, College of Economics and Agriculture (GYFK),
Gyöngyös, Hungary.

Duties: Lead professor in faculty exchange program between Cal Poly's College of Agriculture and GYFK. Foster international understanding and cooperation by representing Cal Poly abroad, and by learning about GYFK, the Hungarian system of higher education, agricultural research and production, culture, history.

Sept. 1977–Jun. 2001. Asst. Prof., Assoc. Prof., Professor. Soil Science Department, California Polytechnic State University,
San Luis Obispo, CA.

Duties: teaching, student advising, senior project and graduate thesis advisor, curriculum chair, graduate
program coordinator, writing skills committee, student club advisor .

**Significant accomplishment: restructured the curriculum and advanced professional outreach, which lead to
increased student enrollment, enhanced national recognition, and an overall enriched program. See Baveye
(1994) attached.**

Courses taught:

Regular responsibility			Occasional responsibility		
Introductory Soils	SS 121	4 units	Urban Soils	SS 310	3 units
Rocks and Minerals	SS 223	4 units	Soil Resource Inventory	SS 431	3 units
Soil Physics	SS 432	5 units	Senior Project	SS 461	1 unit
Forest & Range Soils	SS 440	4 units	Graduate Seminar in Soils	SS 581	3 units
Senior Project	SS 462	3 units	Soil Morphology	SS 521	3 units
Research Planning	SS 501	3 units			

1985 (Spring). Visiting professor. School of Forestry, University of Montana, Missoula, MT. Courses taught:
Introductory Soil Science, Soil Physics, Soil Physics Laboratory.

Sept. 1982–Jun. 1983. Visiting professor (Associate professor rank). Natural Resources Planning and Interpretation
Department, Humboldt State University, Arcata, CA.

Courses taught: Introduction to Soil Science, Forest and Range Soils, Analysis and Management of Soil Fertility, Origin and Classification of Soils.

1974–1977. Graduate Research Assistant. Department of Soil Science, Oregon State University, Corvallis, OR.

Duties: Research the nature of clay minerals involved in mass erosion processes.

Included soil, geological, mechanical and ecological interpretations of landscapes, and intensive use of X-ray diffraction, differential thermal analysis, electron microscopy, and petrographic analysis.

Occasional classroom teaching.

1972–1973. Instructor. School of Forestry, University of Montana, Missoula, MT. Courses taught: Introductory Soil Science, Soil Physics.

1970–1972. Teaching/Research Assistant. School of Forestry, University of Montana, Missoula,

APPLIED PROFESSIONAL EXPERIENCE

Sept. 1995–May 2002. Soil survey project leader (seasonal). USDA Natural Resources Conservation Service, Hanford, CA.

Duties: Organize and direct the soil survey of Yosemite National Park, California: coordinate mapping activities; develop mapping system; describe soils and site characteristics; interpret field and laboratory data; write manuscript.

Oct. 1996–May 1997. Visiting Scientist. Rayonier New Zealand, Ltd. Invercargill, New Zealand.

Duties: develop soil-landscape model, map, and report for 1,300 hectare forest plantation in Southland, NZ.

1987–1995 (Summers). Soil Scientist. USDA Forest Service, Sierra National Forest, Clovis, CA.

Duties: Project leader for *Soil Survey of the High Sierra Area, California*: organize and direct the survey, supervise survey team, conduct field work, prepare manuscript. Occasional duties: soils investigations for burned area emergency response and forest management.

1982 (Summer). Soil Scientist. U.S. Forest Service, Eldorado National Forest, Placerville, CA.

Duties: Order-one soil survey of conifer seed orchards for California Tree Improvement Program.

1979–1981 (Summers). Soil Scientist. U.S. Forest Service, White River National Forest, Glenwood Springs, CO.

Duties: Soil and geologic investigations of diverse projects, including ski area expansions, forest road and trail constructions, forest fire and other disturbed land rehabilitation, forest harvesting.

1978 (Summer). Soil Scientist. U.S. Forest Service, Rocky Mountain Region, Lakewood, CO.

Duties: Supervisor, “Land Inventory and Monitoring Survey” on three national forests and one national grassland.

1973 (Summer). Soil Science Technician. U.S. Forest Service, Deer Lodge National Forest, Butte, MT.

Duties: Soil survey team member.

1969 (Summer). Forestry Aide. Northern Pacific Railway (now Burlington Northern Railway), Missoula, MT.

Duties: General silvicultural work—survey timber sale boundaries, layout logging roads, select and mark trees for harvesting.

1967–1968. Altitude Chamber Technician. United States Air Force (Civil Service), School of Aerospace Medicine, Brooks AFB, TX.

Duties: Service and operate altitude chambers for simulated space flight research.

1963–1967. Active Duty (Physiological Training Specialist). United States Air Force, School of Aerospace Medicine, Brooks AFB, TX.

Duties: Service and operate altitude chambers for simulated space flight research. Human subject in simulated space research

PROFESSIONAL CERTIFICATIONS, ACTIVITIES, AWARDS

Curriculum leader when the National Society of Consulting Soil Scientists recognized Cal Poly's Soil Science Department as having the best undergraduate soil science curriculum in the Nation, 1992.

Certified Professional Soil Scientist and Certified Professional Soil Classifier (#1331) (American Registry of Certified Professionals in Agronomy, Crops, and Soils)

Certified Professional Soil Erosion and Sediment Control Specialist (#525)

Archaeological Training Certificate (1998–2003) California Department of Forestry and Fire Protection.

California State Board of Forestry, Southern District Technical Advisory Committee member, 1988-1993.

Invited speaker and workshop leader on undergraduate education. University of Florida and Virginia Polytechnic Institute and State University, 1992.

Reviewer of grant proposals and manuscripts for various research granting agencies and professional journals

Personal studies of soils, geology, plant communities, and land management practices in North America, Australia, New Zealand, Hungary.

SELECTED COURSES, WORKSHOPS, IN-SERVICE TRAINING

Resource Fire Control, FNR 204. 3-unit university course. Cal Poly, 1994.

Forest fire safety for burn area emergency response. USDA Forest Service in-service training. Sierra National Forest. 1994.

Chapter Development Workshop: Improving Conservation Leadership Skills. Soil & Water Conservation Society. North Salt Lake, UT, 1995.

PROFESSIONAL ORGANIZATIONS, ACTIVE

Soil Science Society of America (Co-leader: Interactive Workshop: Writing Manuscripts for Publication. 2010-present; past field tour leader)

Soil and Water Conservation Society of America (former California Chapter President and program chair)

Society of American Foresters

California Forest Soils Council (former Chairman, field tour organizer 6 yrs)

North American Forest Soils Conferences (Field tour organizer, 1998 meeting) Professional Soil
Scientists Association of California (tour organizer 5 yrs)

SELECTED PUBLICATIONS AND PRESENTATIONS

Taskey, R.D. and T.J. Nimlos. 1971. Plant growth in soils contaminated with arsenic, copper, lead and zinc. Agronomy Abstracts.

Taskey, R.D. and T.J. Nimlos. 1972. Soil contamination by heavy metals inhibits rehabilitation of land damaged by smelter wastes. Agronomy Abstracts.

Craig Stubler

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Overview

Over 18 years' experience in all aspects of soil science instructional and research laboratory support.

Experience

California Polytechnic State University– Aug 1997 to present

Instructional Support Technician

Operate laboratory analytical instruments. Maintain laboratory equipment and facilities.

Prepare chemical reagents for laboratory exercises and research activities.

Maintain chemical and equipment inventories.

Coordinate department health and safety policies and procedures.

Maintain department safety training records. Maintain department greenhouse facilities. Provide project support and mentor students. Supervise student assistants.

Coordinate equipment and vehicle use for department field trips.

Experience with production agriculture labs in CA. Familiarity with agricultural laboratory proficiency programs.

California Polytechnic State University - Aug 96 to present

Research Associate

Provide analytical support for a variety of laboratory and field research projects –sample collection and soil/water/compost characterization.

Provide laboratory Quality Assurance/Quality Control procedures.

Train personnel in laboratory safety and analytical techniques.

Procurement of equipment and supplies.

Santa Lucia Nursery - Dec 96 to Aug 97

Assistant Manager

Managed day-to-day nursery operations.

Maintained and supported a customer-based work environment. Aided customers in horticulture problem solving.

Managed perishable inventory in time-critical environment.

Soil Science Department, Cal Poly, San Luis Obispo –Aug 94 to Aug 97

Research Assistant, Morro Bay Watershed Project

Maintained and operated water sampling equipment.

Performed laboratory analyses of water samples.

Trained personnel in laboratory and field work.

Repaired field and laboratory equipment.

Soil Science Department, Cal Poly, San Luis Obispo –Sep 95 to June 96

Student Laboratory Technician, Soil Testing Enterprise Project

Performed standard soil physical and chemical analyses for on-campus student and faculty research projects.

City of Santa Barbara: Parks and Recreation - Apr 87 to June 93

Senior Grounds Maintenance Worker

Managed water resources for over twelve parks.

Planned and coordinated seasonal maintenance activities for city parks.

Supervised and assisted crews in irrigation installation, operation, and maintenance. Trained personnel in safe and proper use of landscape equipment.

Education

B.S. Soil Science: California Polytechnic State University, San Luis Obispo – December 1996 Cal Poly Student Employee of the year 1995

A.S. Environmental Horticulture: Santa Barbara City College – June 1993 Horticulture Student of the Year, 1993

Awards and Recognition

Cal Poly State University Outstanding Staff Employee Award 2013-14

Cal Poly, College of Food Agriculture and Environmental Sciences Distinguished Staff Award, 2013-14

Ag Council Faculty Appreciation Dinner, 2005
(Selected by the Earth Soil and Water Conservation Club 2005)
Cal Poly, College of Agriculture, Dole Staff Award, 2005

California Governor's Employee Safety Award, 2003

Environmental Industry Award, 2002

Publications

Appel, C. and **C. Stubler**. 2014. SS 423: Laboratory manual supplement. El Corral Publ., San Luis Obispo, CA.

Appel, C., K. Vaughan, B. Swan, M. Wallace, **C. Stubler**, and P. Verma. 2014. Effect of a Soil Microbial Activity Laboratory on Student Learning, California Polytechnic State University, San Luis Obispo, CA. NACTA Journal 58(2):129-134.

Morro Bay National Monitoring Program: Nonpoint Source Pollution and Treatment Measure Evaluation for the Morro Bay Watershed. Final Report 1992-2002. Prepared for the U.S. Environmental Protection Agency by the Central Coast Regional Water Quality Control Board: Katie McNeill, John H. Davis IV, Karen Worcester and the California Polytechnic State University: Lynn E. Moody, Brian C. Dietterick, Jonathan Beckett, James P. Daly, Robert K. Smidt, Brent G. Hallock, Linda S. Shotwell, Becky Judge, **Craig Stubler**, Peter Meertens.

Contributor

Nonpoint Source Pollution and Treatment Measure Evaluation for the Morro Bay Watershed,

Prepared for the U.S. Environmental Protection Agency by the California Regional Water Quality Control Board and California Polytechnic State University, 1996-97, 1997-98, 1999-2000.