

AIR QUALITY RESEARCH PROGRAM

**Texas Commission on Environmental Quality
Contract Number 582-10-94300
awarded to The University of Texas at Austin**

Annual Report

Fiscal Year 2010

May 1, 2010 through August 31, 2010

Submitted to

David Brymer

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September 30, 2010

Texas Air Quality Research Program

Annual Progress Report

September 30, 2010

Overview

The goals of the State of Texas Air Quality Research Program (AQRP) are:

- (i) to support scientific research related to Texas air quality, in the areas of emissions inventory development, atmospheric chemistry, meteorology and air quality modeling,
- (ii) to integrate AQRP research with the work of other organizations, and
- (iii) to communicate the results of AQRP research to air quality decision-makers and stakeholders.

On April 30, 2010, the Texas Commission on Environmental Quality (TCEQ) contracted with the University of Texas at Austin to administer the AQRP. For the FY 2010-2011 biennium, the AQRP has approximately \$4.9 million in funding available. Following discussions with the TCEQ and an Independent Technical Advisory Committee (ITAC) concerning research priorities, the AQRP released a call for proposals in May, 2010. Forty-five proposals, requesting \$12.9 million in research funding were received by the due date of June 25, 2010. These proposals were reviewed by the ITAC for technical merit, and by the TCEQ for relevancy to the State's air quality research needs. The results of these reviews were forwarded to the AQRP's Advisory Council, which made final funding decisions in late August, 2010. Successful proposers were notified, and subcontracts are currently being initiated. At the end of the fiscal year, no sub-contracts were in place, however, several of the subcontracts should be in place in early September, 2010.

Background

Section 387.010 of HB 1796 (81st Legislative Session), directs the Texas Commission on Environmental Quality (TCEQ, Commission) to establish the Texas Air Quality Research Program (AQRP).

Sec. 387.010. AIR QUALITY RESEARCH. (a) The commission shall contract with a nonprofit organization or institution of higher education to establish and administer a program to support research related to air quality.

(b) The board of directors of a nonprofit organization establishing and administering the research program related to air quality under this section may not have more than 11 members, must include two persons with relevant scientific expertise to be nominated by the commission, and may not include more than four county judges selected from counties in the Houston-Galveston-Brazoria and Dallas-Fort Worth nonattainment areas. The two persons with relevant scientific expertise to be nominated by the commission may be employees or officers of the commission, provided that they do not participate in funding decisions affecting the granting of funds by the commission to a nonprofit organization on whose board they serve.

(c) The commission shall provide oversight as appropriate for grants provided under the program established under this section.

(d) A nonprofit organization or institution of higher education shall submit to the commission for approval a budget for the disposition of funds granted under the program established under this section.

(e) A nonprofit organization or institution of higher education shall be reimbursed for costs incurred in establishing and administering the research program related to air quality under this section. Reimbursable administrative costs of a nonprofit organization or institution of higher education may not exceed 10 percent of the program budget.

(f) A nonprofit organization that receives grants from the commission under this section is subject to Chapters 551 and 552, Government Code.

The University of Texas at Austin was selected by the TCEQ to administer the program. A contract for the administration of the AQRP was established between the TCEQ and the University of Texas at Austin on April 30, 2010. Consistent with the provisions in HB 1796, up to 10% of the available funding is to be used for program administration; the remainder (90%) of the available funding is to be used for research projects, individual project management activities, and meeting expenses associated with an Independent Technical Advisory Committee (ITAC). The research projects are selected after a three stage review process. In the first stage, an Independent Technical Advisory Committee (ITAC, up to 15 members) reviews research proposals based on technical merit. In a second stage of review, the TCEQ reviews the projects for relevancy to the State's air quality research needs. In a final stage of review, an Advisory Council approves projects.

During the first four months of operation, the University of Texas established the Independent Advisory Committee (ITAC) and the Advisory Council (Council). A program web site was established, and a request for proposals was released; proposals were reviewed and an initial group of proposals was approved for funding. This first annual report describes the AQRP's activities in these areas.

Independent Technical Advisory Committee (ITAC)

The AQRP funding is to be used primarily for research projects, and one of three groups responsible for selecting the projects is the Independent Technical Advisory Committee (ITAC). The ITAC is composed of up to 15 individuals with scientific expertise relevant to the Program. The ITAC is charged with recommending technical approaches, and establishing research priorities. The ITAC meets at least twice per year at locations rotating between Austin, Dallas and Houston. One of the meetings each year is dedicated to new project review. A second meeting each year is dedicated to reviewing progress on funded projects and review of the Program's strategic plan. Members of the ITAC consist of the TCEQ Project Director (or designee), representatives with air quality expertise from research institutions with extensive expertise in air quality research in Texas. The members of the ITAC are listed in Table 1. The members of the ITAC are drawn from Texas universities active in air quality research, national laboratories that have participated in air quality studies in Texas, and institutions that have expertise not available in Texas and that have participated in air quality studies in Texas.

The ITAC membership is intentionally drawn from air quality researchers who have experience in Texas; these researchers and their colleagues will likely have interest in responding to the requests for research proposals issued by the AQRP. This raises potential confidentiality and conflict of interest issues, and the contract between TCEQ and the University of Texas requires that the AQRP shall maintain and implement an appropriate written policy on conflict of interest. Specifically for the ITAC, all members are required to certify:

Confidentiality: As a member of ITAC I understand that I will have access to proposals submitted to the Air Quality Research Program. Subject to any legal requirements, I agree to keep the information in these proposals confidential until the selection process is completed and it is appropriate to release information to the public. I understand that there may be certain information that comes to me in my role as a member of ITAC that retains its confidential nature even after the process is concluded. I also understand that I will review said proposals and may have access to the reviews made by other ITAC members. I agree to keep these reviews and the identity of the reviewers confidential until such time as this information is released to the public. (NOTE: For the reviews and reviewers, this information may never be released.)

Conflict of Interest: As a member of ITAC, I agree that I will not evaluate, comment on, or vote on proposals in which I or my home institution is involved, including but not limited to, any financial interest, or in which I have another form of conflict of interest. I understand that ITAC members with conflicts of interest must leave the meeting room or the conference line when a proposal with which they have a conflict is discussed, voted on or otherwise being considered. I understand that I must recuse myself from participating in

or attempting to influence at any time the ITAC's or the AQRP Council's consideration or decision concerning such proposals. I agree to bring any issues concerning a possible conflict of interest to the attention of the Director of the Air Quality Research Program or the TCEQ Project Director. If there is a question of interpretation regarding whether a conflict of interest exists, I agree that the decision regarding whether a conflict of interest exists will be made by the Director of the Air Quality Research Program or the TCEQ Project Director.

All members of the ITAC agreed to abide by these conflict of interest and confidentiality provisions prior to participating in the review of proposals.

Table 1. Members of the Independent Technical Advisory Committee

| Name | Title | Organization |
|----------------------|---|---|
| David Allen | Gertz Regents Professor in Chemical Engineering | The University of Texas at Austin |
| Peter Daum | Head, Atmospheric Science Division | Brookhaven National Lab |
| Mark Estes | Senior Air Quality Scientist Air Modeling and Data Analysis Section | Texas Commission on Environmental Quality |
| Fred Fehsenfeld | Senior Scientist, Cooperative Institute for Research in Environmental Sciences | Colorado University |
| Robert Griffin | Associate Professor, Civil and Environmental Engineering | Rice University |
| Kuruvilla John | Professor of Mechanical and Energy Engineering Associate Dean for Research and Graduate Studies | University of North Texas |
| Barry Lefer | Assistant Professor, Department of Earth and Atmospheric Sciences | The University of Houston |
| Jim Meagher | Deputy Director, Chemical Science Division, Earth Systems Research Laboratory | National Oceanic and Atmospheric Administration |
| J. David Mobley | Deputy Director, Atmospheric Modeling and Analysis Division, Office of Research and Development | U.S. Environmental Protection Agency |
| John Nielsen-Gammon | Professor and Texas State Climatologist The Center for Atmospheric Chemistry and the Environment | Texas A&M University |
| George O. Talbert | Director, Texas Air Research Center | Lamar University |
| Jay Turner | Associate Professor of Energy, Environmental and Chemical Engineering | Washington University in St. Louis |
| William Vizuet | Assistant Professor, Gillings School of Global Public Health | The University of North Carolina at Chapel Hill |
| Christine Wiedinmyer | Scientist II, Atmospheric Chemistry Division | Nation Center for Atmospheric Research |
| Greg Yarwood | Principal | Environ |

On July 19 and July 22, 2010, the Independent Technical Advisory Committee met to evaluate proposals submitted to the Air Quality Research Program. The meeting on July 19 was a 3-hour conference call and the meeting on July 22 was a full day meeting held at the University of Texas Pickle Research Campus. Attendees at the meetings were limited to ITAC members and AQRP staff. All ITAC members (or in two cases, approved substitutes) participated in both meetings.

In these meetings, the ITAC ranked all 45 proposals that were submitted to the AQRP by the deadline of June 25 at 5PM Central Time. Each proposal was assigned three ITAC members who served as lead reviewers. As each proposal was considered by the full ITAC, these lead reviewers summarized the proposal, along with its strengths and weaknesses. The full ITAC then discussed the proposal and all ITAC members who did not have conflicts of interest provided two assessments of the proposal – a numerical score (ranging from 0-100) and a letter score (A=high technical merit, high priority for funding; B=technically meritorious, but with some limitations, fund if resources are available; C=serious technical or other flaws, not recommended for funding).

The proposals were ranked according to both numerical score and technical score. The 12 most highly rated proposals based on numerical score were the same as the 12 most highly rated proposals based on letter score. The results of the ITAC meeting were sent to the TCEQ with proposals grouped into 3 categories:

1. Highly recommended (12 proposals, \$3,688,445 in funding requested).
2. Recommended (12 proposals, \$3,438,480 in funding requested).
3. Not recommended (21 proposals).

TCEQ Relevancy Review

Once the ITAC reviewed and ranked the research project proposals according to technical merit, they were submitted to the TCEQ for a relevancy review. The TCEQ reviews proposals for relevancy to the State's air quality research needs. TCEQ approval is required for a project to receive funding from the Program.

TCEQ reviewed the top 24 proposals and provided comments on several of the projects to enhance their relevancy to the state's air quality research goals. In addition, the TCEQ provided a ranking of the proposals as a product of their relevancy review.

Stakeholder Meeting

On August 9 the AQRP held an open forum meeting to discuss the air quality research needs of the State of Texas. Seven individuals representing the environmental community, the regulated community, and the near non-attainment Council of Governments attended. The information gathered in this meeting was presented to the Advisory Council. Recommendations for future research priorities fell in to 2 categories, 1) future solicitations should promote a better understanding of emissions from mobile sources and 2) characterization of the long range transport of air pollutants into and within the state of Texas should be emphasized.

Advisory Council

The group responsible for selecting AQRP research projects is the Advisory Council. The Council serves as a Board of Directors for the Program and consists of up to 11 members, all residents of the State of Texas. As defined in the AQRP contract, two Council members with relevant scientific expertise are nominated by the TCEQ, and up to four members of the Council can be county judges from the Houston-Galveston-Brazoria (HGB) and Dallas-Fort Worth (DFW) non-attainment counties. The purpose of the Council is to give final approval to projects recommended by the ITAC and TCEQ, and to provide guidance on the Strategic Plan. The Council meets twice per year. One meeting is dedicated to new project selection. A second meeting each year will be dedicated to providing summaries of on-going projects and review of the strategic plan. The members of the Advisory Council and their affiliations are listed in Table 2.

Table 2. Members of the Advisory Council

| Name | Title | Organization |
|------------------|---|---|
| Ramon Alvarez | Senior Scientist | Environmental Defense Fund |
| Daniel Baker | Senior Consultant in Air Quality | Shell Global Solutions |
| Sam Biscoe | County Judge | Travis County |
| Jeff Branick | County Judge Elect | Jefferson County |
| Edward M. Emmett | County Judge | Harris County |
| Ralph B. Marquez | Former TCEQ Commissioner | Environmental Strategies and Policy |
| Keith Self | County Judge | Collin County |
| Kim Herndon | Assistant Director Air Quality Division | Texas Commission on Environmental Quality |
| TCEQ 2 | Pending appointment by TCEQ | |

The Council met on August 16 and approved fourteen proposals for funding by the AQRP. Two additional proposals were designated as alternates. The approved proposals are listed in Table 3 and the alternate proposals are listed in Table 4.

Principal Investigator's have been notified that their projects are approved for funding and the contracting process has begun.

Table 3. Awarded Projects

| AQRP Project Number | Title | Principal Investigator | Institutions Represented | Funding Awarded | Project Managers |
|----------------------------|--|-------------------------------|---|------------------------|-------------------------|
| 6 | Quantification of Industrial Emissions of VOCs, NO ₂ and SO ₂ by SOF and Mobile DOAS | Johan Mellqvist | Chalmers Univ. of Technology & Univ. of Houston | \$498,644 | David Sullivan |
| 8 | Factors Influencing Ozone-Precursor Response in Texas Attainment Modeling | Daniel Cohan | Rice, & Environ | \$190,966 | Elena McDonald-Buller |
| 9 | Additional Flare Test Days for TCEQ Comprehensive Flare Study | Vincent Torres | UT-Austin | \$591,332 | Cyril Durrenberger |
| 14 | Quantifying Emission Estimates from Biogenic and Oil and Gas Production Sources in Texas | Christine Wiedinmyer | UCAR/NCAR | \$595,173 | Elena McDonald-Buller |
| 15 | An Assessment of Nitril Chloride Formation Chemistry and its Importance in Ozone Non-attainment areas in Texas | James Roberts | NOAA, Environ | \$201,306 | Elena McDonald-Buller |
| 20 | NO _x Reactions and Transport in Nighttime Plumes and Impact on Next-Day Ozone | Steven Brown | NOAA, Environ | \$202,498 | Elena McDonald-Buller |
| 21 | Dry Deposition of Ozone to Built Environment Surfaces | Richard Corsi | UT-Austin | \$248,830 | Elena McDonald-Buller |
| 22 | Development of Speciated Industrial Flare Emission Inventories for Air Quality Modeling in Texas | Daniel Chen | Lamar Univ. | \$150,000 | Vincent Torres |
| 26 | Biogenic VOC Flux Measurements in East Texas | Gunnar Schade | Texas A&M | \$200,000 | Elena McDonald-Buller |
| 29 | Wind Modeling Improvements with the Ensemble Kalman Filter | John Neilson-Gammon | Texas A & M | \$80,108 | Gary McGaughey |

| | | | | | |
|----|--|--------------|--|-----------|-----------------------|
| 32 | SHARP Data Analysis: Radical Budget and Ozone Production | Barry Lefer | Univ. of Houston, Penn State, Univ. of New Hampshire, Univ. of Miami, & UCLA | \$248,652 | Cindy Murphy |
| 34 | Dallas Measurements of Ozone Production | Barry Lefer | Univ. of Houston & Penn State | \$195,054 | David Sullivan |
| 42 | Environmental Chamber Experiments to Evaluate NOx Sinks and Recycling in Atmospheric Chemical Mechanisms | Greg Yarwood | Environ, UC-Riverside, & Smog Reyes | \$237,481 | Elena McDonald-Buller |
| 45 | Quantification of Hydrocarbon, NOx, and SO2 emissions from Petrochemical Facilities in Houston: Interpretation of the 2009 FLAIR dataset | Jochen Stutz | UCLA, UNC, Aerodyne, & Washington State | \$398,401 | Cindy Murphy |

Table 4. Alternate Projects

| AQRP Project Number | Title | Principal Investigator | Institutions represented | Funding Awarded |
|----------------------------|--|-------------------------------|---|---|
| 24 | Surface Measurements and One-Dimensional Modeling Related to Ozone Formation in the Suburban Dallas-Fort Worth Area | Robert Griffin | Rice, Univ. of New Hampshire, NCAR, Univ. of Michigan, & Univ. of Houston | To Be Determined up to \$511,878 if funding available |
| 44 | Airborne Measurements to Investigate Ozone Production and Transport in the Dallas/Fort Worth (DFW) Area During the 2011 Ozone Season | Maxwell Shauck | Univ. of Houston | \$380,261 |

Research Project Cycle

The research program is being implemented through an 8 step cycle. The steps in the cycle are described from project concept generation to final project evaluation for a single project cycle. During the first 4 months of AQRP operation, steps 1-5 were completed for the first project cycle. The projected timeline for the remainder of the biennium is also outlined below.

- 1.) The project cycle is initiated by developing (in year 1) or updating (in subsequent years) the strategic research priorities. The AQRP Director, in consultation with the ITAC, and the TCEQ developed initial research priorities; the research priorities were released along with the initial Request for Proposals in May, 2010. An initial Strategic Plan was released in July, 2010. The Request for Proposals and the Strategic Plan are available at [://aqrp.ceer.utexas.edu/](http://aqrp.ceer.utexas.edu/)
- 2.) Project proposals relevant to the research priorities are solicited. The initial Request for Proposals was released on May 25, 2010. Proposals were due by June 25, 2010. Forty-five proposals, requesting \$12.9 million in funding, were received by the deadline.
- 3.) The Independent Technical Advisory Committee (ITAC) performs a scientific and technical evaluation of the proposals. For the initial round of proposals, the ITAC reviewed the proposals in conference calls and in a meeting held in Austin, Texas. The reviews were completed on July 22, 2010. Twelve proposals were highly recommended for funding; twelve proposals were recommended for funding, and 21 proposals were not recommended for funding.
- 4.) The project proposals and ITAC recommendations will be forwarded to the TCEQ. The TCEQ will evaluate the project recommendations from the ITAC, comment on the relevancy of the projects to the State's air quality research needs. For the first round of proposals, the TCEQ rated, as highly recommended, the same 12 research projects that were highly recommended by the ITAC. The TCEQ also recommended for funding the same 12 proposals that the ITAC recommended, however, the rank ordering of these 12 recommended proposals differed between the two groups.
- 5.) The recommendations from the ITAC and the TCEQ will be presented to the Council for their approval. The Council will also provide comments on the strategic research priorities. For the first group of proposals, the Council approved for funding all of the projects that were highly recommended by both the ITAC and TCEQ (12 projects). In addition, the Council approved for funding several projects in the recommended category, which were highly ranked within the recommended category by both the ITAC and TCEQ.
- 6.) Funded projects will be assigned a Project Manager at UT-Austin and a Project Liaison at TCEQ. The project manager at UT-Austin will be responsible for ensuring that project objectives are achieved in a timely manner and that effective communication is maintained among investigators involved in multi-institution projects. The Project Manager will have responsibility for documenting progress toward project measures of

success for each project. The Project Manager will work with the researchers, and the TCEQ to create an approved work plan for the project. The Project Manager will also work with the researchers, TCEQ and the Program's Quality Assurance officer to develop an approved QAPP for each project. The Project Manager will review monthly, annual and final reports from the researchers and work with the researchers to address deficiencies. For the first round of proposals all respondents to the RFP have been notified of their award status. For those projects that will be funded, a Project Manager has been assigned and they have made initial contact with their PIs. TCEQ has been given a list of projects that will be funded, and is currently assigning TCEQ Project Liaisons.

- 7.) The AQRD Director and the Project Manager for each project will describe progress on the project in the ITAC and Council meetings dedicated to on-going project review. The AQRD Director will ensure that at least 10% of project funds are available at the time of these presentations so that recommendations can be incorporated into final project deliverables.
- 8.) The project findings will be communicated through multiple mechanisms. Final reports will be posted to the Program web site; research briefings will be developed for the public and air quality decision makers; an annual research conference will be held.

Program Timeline, May 1, 2010-August 31, 2011

May 2010: Finalize membership in Council and ITAC; solicit project proposals

June 2010: Proposals due; send proposals to ITAC for review.

July 2010: ITAC conducts review and ranking of proposals; TCEQ to review immediately after ITAC ratings are complete, Council to meet to approve projects immediately after TCEQ work is complete.

August 2010: Council to meet to approve projects immediately after TCEQ work is complete; issue contracts for approved projects

September 2010-April 2011: Project reports and deliverables completed on an on-going basis

September 2010: Program quarterly report due to TCEQ

December 2010: Program quarterly report due to TCEQ

March 2011: Program quarterly report due to TCEQ

April 2011: Project progress report to ITAC and TCEQ; strategic plan review.

May 2011: Project progress reports to Council; strategic plan review. Program quarterly report due to TCEQ.

May 2011-August 2011: Projects continue with ITAC, TCEQ, and Council input; project reports and deliverables completed on an on-going basis

August 2011: Project completion; Program final report completed.

Financial Status Report

Initial funding for fiscal year 2010 was established at \$2,732,071.00. In late May an amendment was issued increasing the budget by \$40,000. The entirety of these funds were distributed across several different reporting categories as required under the contract with TCEQ. The reporting categories are:

Program Administration – limited to 10% of the overall funding

This category includes all staffing, materials and supplies, and equipment needed to administer the overall AQRP. It also includes the costs for the Council meetings.

ITAC

These funds are to cover the costs, largely travel expenses, for the ITAC meetings.

Project Management – limited to 8.5% of the funds allocated for Research Projects

Each research project will be assigned a Project Manager to ensure that project objectives are achieved in a timely manner and that effective communication is maintained among investigators in multi-institution projects. These funds are to support the staffing and performance of project management.

Research Projects / Contractual

These are the funds available to support the research projects that are selected for funding.

At this time it is anticipated that all of the contractual funds will be dispersed to the research projects, and the Program Administration, ITAC, and Project Management funds will be spent by August 31, 2011.

Program Administration

Program Administration includes salaries and fringe benefits for those overseeing the program as a whole, as well as, materials and supplies, travel, equipment, and other expenses. This category allows indirect costs in the amount of 10% of salaries and wages.

During the reporting period nine staff members were involved in the administration of the AQRP. Dr. David Allen, Principal Investigator and AQRP Director, is responsible for the overall administration of the AQRP. James Thomas, AQRP Manager, is responsible for assisting Dr. Allen in the program administration. His primary responsibilities during this reporting period involved working with the ITAC members and organizing the Council membership. Ms. Maria Stanzone, AQRP Grant Manager, assisted with proposal management, development of the Sub-award document for the research projects, and communication with the ITAC members.

Table 5. AQRP Administration Budget (FY 10)

Administration Budget (includes Council Expenses)

| Budget Category | FY10 Budget | Invoiced Expenses* | Pending Expenses | Remaining Balance |
|---------------------------|--------------------|---------------------------|-------------------------|--------------------------|
| Personnel/Salary | \$173,100 | \$65,155 | | \$107,945 |
| Fringe Benefits | \$38,082 | \$10,110 | | \$27,972 |
| Travel | \$8,500 | | | \$8,500 |
| Supplies | \$34,215 | \$1,056 | \$2,169 | \$30,990 |
| Equipment | \$6,000 | | | \$6,000 |
| Other | | | | |
| Total Direct Costs | \$259,897 | \$76,321 | \$2,169 | \$181,407 |
| Authorized Indirect Costs | \$17,310 | \$6,516 | | \$10,794 |
| 10% of Salaries and Wages | | | | |
| Total Costs | \$277,207 | \$82,837 | \$2,169 | \$192,201 |
| Fringe Rate | 22% | | | |

*Includes actual invoices from April 30, 2010 to July 31, 2010, and the projected invoice for August 1, 2010 – August 31, 2010.

Ms. MaryAnn Foran assisted with the development of the Sub-award document and provided input on program organization. Ms. Rachael Bushn assists with administrative functions. Her initial responsibilities have included working with the ITAC and Council, and providing notification of funding decisions to those who submitted proposals to the AQRP RFP. Mr. Denzil Smith is responsible for the AQRP Web Page development and for data management.

A graduate student and post-doctoral associate, Cameron Faxon and Mariana Dionisio, respectively, are working on the development of a state of the science document. This is an extension of the initial research priorities and Strategic Plan, and will be used to assess project objectives.

Mr. Cyril Durrenberger, a Project Manager, is providing assistance with the development and review of the Quality Assurance Project Plans for all research projects.

Not all Council Meeting expenses have posted as of the writing of this report. These are included in the supplies category.

ITAC

The ITAC met in Austin, Texas, on July 22, 2010, to complete their review and ranking of the proposals. The total amount charged to the ITAC account as of August 31, 2010, is \$9,053.49, though not all ITAC meeting expenses have posted as of that date.

Table 6. ITAC Budget (FY 10)

ITAC Budget

| Budget Category | FY10 Budget | Invoiced Expenses* | Pending Expenses | Remaining Balance |
|---------------------------|-----------------|--------------------|------------------|-------------------|
| Personnel/Salary | | | | |
| Fringe Benefits | | | | |
| Travel | \$16,500 | \$8,894 | \$2,298 | \$5,308 |
| Supplies | \$2,364 | \$160 | | \$2,204 |
| Equipment | | | | |
| Total Direct Costs | \$18,864 | \$9,054 | \$2,298 | \$7,512 |
| Authorized Indirect Costs | | | | |
| 10% of Salaries and Wages | | | | |
| Total Costs | \$18,864 | \$9,054 | \$2,298 | \$7,512 |

*Includes actual invoices from April 30, 2010 to July 31, 2010, and the projected invoice for August 1, 2010 – August 31, 2010.

Project Management

No expenses have been charged to the Project Management account as of the writing of this report.

Table 7: Project Management Budget (FY 10)

Project Management Budget

| Budget Category | FY10 Budget | Invoiced Expenses* | Pending Expenses | Remaining Balance |
|---------------------------|------------------|--------------------|------------------|-------------------|
| Personnel/Salary | \$139,653 | | | \$139,653 |
| Fringe Benefits | \$30,725 | | | \$30,725 |
| Travel | \$4,000 | | | \$4,000 |
| Supplies | \$1,657 | | | \$1,657 |
| Equipment | | | | |
| Other | | | | |
| Total Direct Costs | \$176,035 | \$0 | \$0 | \$176,035 |
| Authorized Indirect Costs | \$13,965 | | | |
| 10% of Salaries and Wages | | | | |
| Total Costs | \$190,000 | \$0 | \$0 | \$190,000 |
| Fringe Rate | 22% | | | |

*Includes actual invoices from April 30, 2010 to July 31, 2010, and the projected invoice for August 1, 2010 – August 31, 2010.

Research Projects

As of August 31, 2010, no sub-awards (contracts) have been issued for the Research Projects, so no expenditures have been incurred.

Appendix A

Cumulative Financial Report

Fiscal Year 2010

For the period

May 1, 2010 through August 31, 2010

**Air Quality Research Program
Cumulative Financial Report
Fiscal Year 2010**

| Budget Category | AQRP Administration Budget | ITAC Budget | Project Management Budget | Research Projects Budget | Total Budget FY 10 | Total Invoiced Expenses FY 10* | Total Pending Expenses FY 10 | Remaining Balance |
|---------------------------|-----------------------------------|--------------------|----------------------------------|---------------------------------|---------------------------|---------------------------------------|-------------------------------------|--------------------------|
| Personnel/Salary | \$173,100 | | \$139,653 | | \$312,753 | \$65,155.00 | \$0.00 | \$247,598.00 |
| Fringe Benefits | \$38,082 | | \$30,725 | | \$68,807 | \$10,110.10 | \$0.00 | \$58,696.90 |
| Travel | \$8,500 | \$16,500 | \$4,000 | | \$29,000 | \$8,893.65 | \$2,298.00 | \$17,808.35 |
| Supplies | \$34,215 | \$2,364 | \$1,657 | | \$38,236 | \$1,215.67 | \$2,169.11 | \$34,851.22 |
| Equipment | \$6,000 | | | | \$6,000 | \$0.00 | \$0.00 | \$6,000.00 |
| Other | | | | | | | | |
| Contractual | | | | \$2,286,000 | \$2,286,000 | \$0.00 | \$0.00 | \$2,286,000.00 |
| Total Direct Costs | \$259,897 | \$18,864 | \$176,035 | \$2,286,000 | \$2,740,796 | \$85,374.42 | \$4,467.11 | \$2,650,954.47 |
| Authorized Indirect Costs | \$17,310 | | \$13,965 | | \$31,275 | \$6,515.50 | \$0.00 | \$24,759.50 |
| 10% of Salaries and Wages | | | | | | | | |
| Total Costs | \$277,207 | \$18,864 | \$190,000 | \$2,286,000 | \$2,772,071 | \$91,889.92 | \$4,467.11 | \$2,675,713.97 |
| Fringe Rate | 22% | | | | | | | |

*Includes actual invoices from April 30, 2010 to July 31, 2010, and the projected invoice for August 1, 2010 – August 31, 2010.