

**Corpus Christi Air Monitoring and Surveillance Camera  
Installation and Operation Project**

**Quarterly Report for the Period**

**April 1, 2008 through June 30, 2008**

**Submitted to**

**The Honorable Janis Graham Jack  
US District Court for the Southern District of Texas  
Corpus Christi, Texas**

**Ms. Kathleen Aisling  
US Environmental Protection Agency, Region 6  
Dallas, Texas**

**Ms. Susan Clewis  
Texas Commission on Environmental Quality, Region 14  
Corpus Christi, Texas**

**Submitted by**

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**August 27, 2008**

## I. Introduction

On October 1, 2003, the US District Court for the Southern District of Texas issued an order to the Clerk of the Court to distribute funds in the amount of \$6,700,000, plus interest accrued, to The University of Texas at Austin (UT Austin) to implement the court ordered condition of probation (COCP) project *Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation* (Project). This quarterly report has been prepared pursuant to the requirements of the project and is being submitted to the US District Court, the US Environmental Protection Agency (EPA), and the Texas Commission on Environmental Quality (TCEQ).

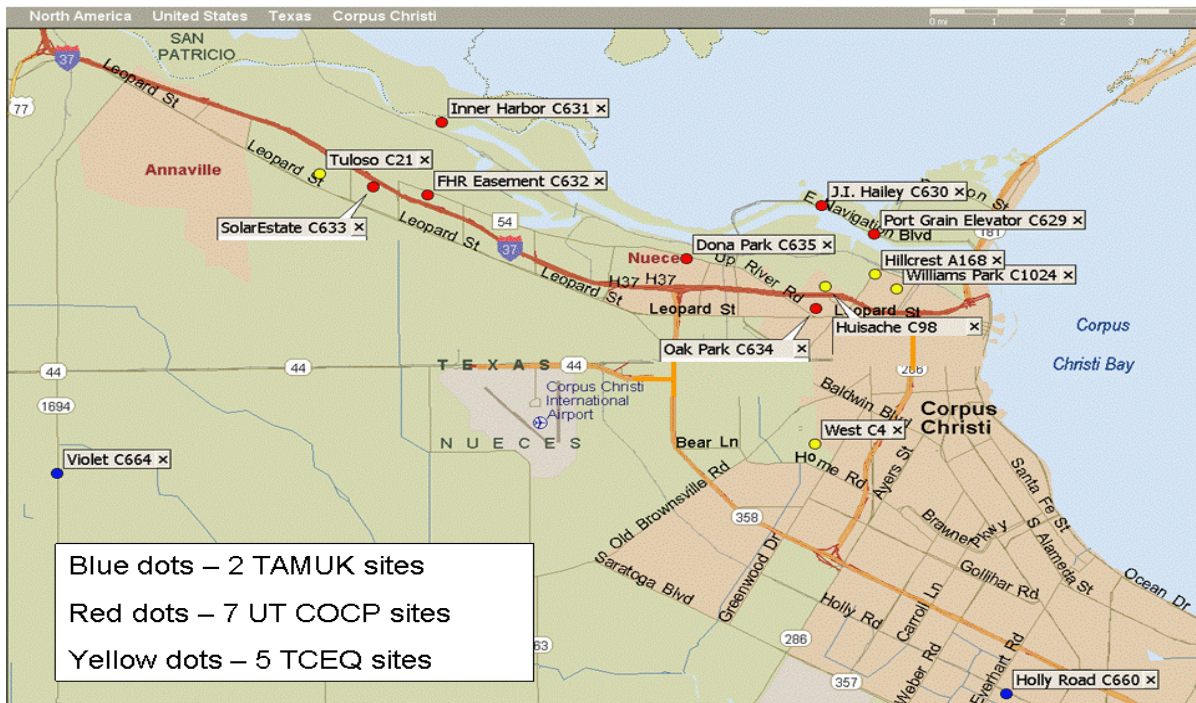
## II. Project Progress Report

The focus of work during the quarter ending June 30, 2008 has been directed to the following activities.

### A. Operations and Maintenance Phase of the Project

The Project consists of a network of seven (7) air monitoring stations with air monitoring instruments and surveillance camera equipment. A map showing locations of COCP Project monitoring sites along with TCEQ sites and sites operated by Texas A&M at Kingsville (TAMUK) appears in Figure 1, below. Table 1, page 3, identifies the location and instrumentation found at each of the COCP Project sites. TCEQ and TAMUK sites provide some additional data used in analyses.

Figure 1. Corpus Christi Monitoring Sites



**Table 1. Schedule of Air Monitoring Sites, Locations and Major Instrumentation**

TCEQ CAMS Nos.	Description of Site Location	Monitoring Equipment				
		Auto GC	TNMHC(T) & Canister(C)	H2S & SO2	Met Station	Camera
634	Oak Park Recreation Center	Yes	T		Yes	
629	Grain Elevator @ Port of Corpus Christi		T&C	Yes	Yes	
630	J. I. Hailey Site @ Port of Corpus Christi		T&C	Yes	Yes	
635	TCEQ Monitoring Site C199 @ Dona Park		T&C	Yes	Yes	Yes
631	Port of Corpus Christi on West End of CC Inner Harbor		T&C	Yes	Yes	
632	Off Up River Road on Flint Hills Resources Easement		T&C	Yes	Yes	
633	Solar Estates Park at end of Sunshine Road	Yes	T	Yes	Yes	Yes

**Legend**

Auto GC	automated gas chromatograph
TNMHC	total non-methane hydrocarbon analyzer (all except 634 & 633 also have canister hydrocarbon samplers)
H <sub>2</sub> S	hydrogen sulfide analyzer
SO <sub>2</sub>	sulfur dioxide analyzer
Met Station	meteorology station consisting of measurement instruments for wind speed, wind direction, ambient air temperature and relative humidity
Camera	surveillance camera

A discussion of data findings for the quarter appears in Appendix A, pages 6 through 25. Specifically, the appendix contains the following elements:

- **Auto-GC Effects Screening Level (ESL) Summary** – An examination of the second quarter’s hourly auto-GC data from Oak Park and Solar Estates shows that no measurements exceeded a short-term Reference Value or ESL. Also, the quarterly averages of all species were below the respective annual ESLs, as were the rolling averages over the past four quarters. Benzene concentrations were noticeably lower in this quarter than in the second quarter of earlier years. A summary appears in Appendix A, pages 12 through 17.
- **Analysis of One Monitored Air Pollution Event** – A case study motivated by the measurement of elevated H<sub>2</sub>S at Dona Park CAMS 635 on May 8 is in Appendix A, pages 18 and 19.
- **Update on “Triangulation” Efforts** – After the April 2008 meeting of the Volunteer Advisory Board, two requests were made for further work on pinpointing emission sources by looking at the rays from monitors in the directions upwind during pollution events, or based on pooling concentrations with coincident wind direction over long time periods to discern directions

generally associated with elevated concentrations. Actual triangulation using multiple monitors has been challenging. However, one example of successful source determination is shown on in Appendix A, pages 20 through 22.

- **Canister Sample Analysis** – Only two canisters were triggered during the second quarter of 2008. Both yielded a butane and pentane–dominated mix of species. More details appear in Appendix A, pages 23 and 24. Some new chlorinated species are now being analyzed by the laboratory.

#### B. Scheduled Meetings of the Volunteer Advisory Board

The Corpus Christi Project Advisory Board met on April 8, 2008. The meeting notes from that Advisory Board Meeting are found in Appendix B, pages 26 through 30.

#### C. Project Management and Planning

Project Management and Planning during this period has focused on the following four (4) major activities.

##### 1. **Air Monitoring Operations**

Operations and maintenance of the seven monitoring sites reporting data via the TCEQ LEADS System is on-going. The data can be accessed and reviewed at the project website (<http://www.utexas.edu/research/ceer/ccaqp/>).

##### 2. **Communication and Reporting**

The status of the Project has been communicated through the website, which is operational with portions under continual development, quarterly and annual reports, and at meetings of the Project’s Advisory Board.

##### 3. **Budget Monitoring**

Budget monitoring during the period has focused on project costs for Phase II - Sites Operation and Maintenance costs. Financial reports for the quarter are included in Appendix C, page 40.

##### 4. **Other Contributions**

There were no other contributions awarded during this reporting period.

### **III. Financial Report**

As required, the following financial summary information is provided. Details supporting this financial summary are included in Appendix C, page 31.

#### A. Total Amount of COCP Funds and Other Funds Received Under the Project

The COCP funds received through June 30, 2008 totals \$7,388,832.91. This total included interest earned through June 30, 2008.

#### B. Detailed List of the Actual Expenditures Paid from COCP Funds

Expenditures of COCP funds during this quarter totaled \$208,116.26. The detailed breakdown of the actual expenditures is included in Appendix C, page 32. The activities for which these expenditures were used are detailed in Section II, beginning on page 2 of this report.

C. Total Interest Earned on COCP Funds During the Quarter

The interest earned during this quarter totaled \$27,039.02. A report providing detailed calculations of the interest earned on the COCP funds during each month of the quarter is included in Appendix C, beginning on page 32.

D. Balance as of March 31, 2008, in the COCP Account

The balance in the COCP account, including interest earned totals \$3,534,059.18.

E. Expected Expenditures for the Funds Remaining in the COCP Account

The expected expenditures for the funds remaining totals \$3,534,059.18.

**Quarterly Report Distribution List:**

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Ms. Kathleen Aisling, Environmental Engineer, Air Enforcement Section, Dallas  
Regional Office

Members of the Advisory Board

# APPENDIX A

## Data Analysis for Corpus Christi Quarterly Report

*April 1, 2008 through June 30, 2008*

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Center for Energy & Environmental Resources  
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## Data Analysis for Corpus Christi Quarterly Report

This technical report describes recent results of monitoring and analysis of data under the Corpus Christi Air Quality Project over the period from April 1 through June 30, 2008.

The monitoring network is shown in Figure 1, page 2, and is described in Table 1 below.

This report contains the following elements:

- a summary of hourly speciated hydrocarbon concentrations measured by automated gas chromatographs (auto-GCs);
- a case study of the use of data to assess air pollution events;
- an update on on-going efforts to couple wind direction and pollutant readings;
- a summary of two canister samples.

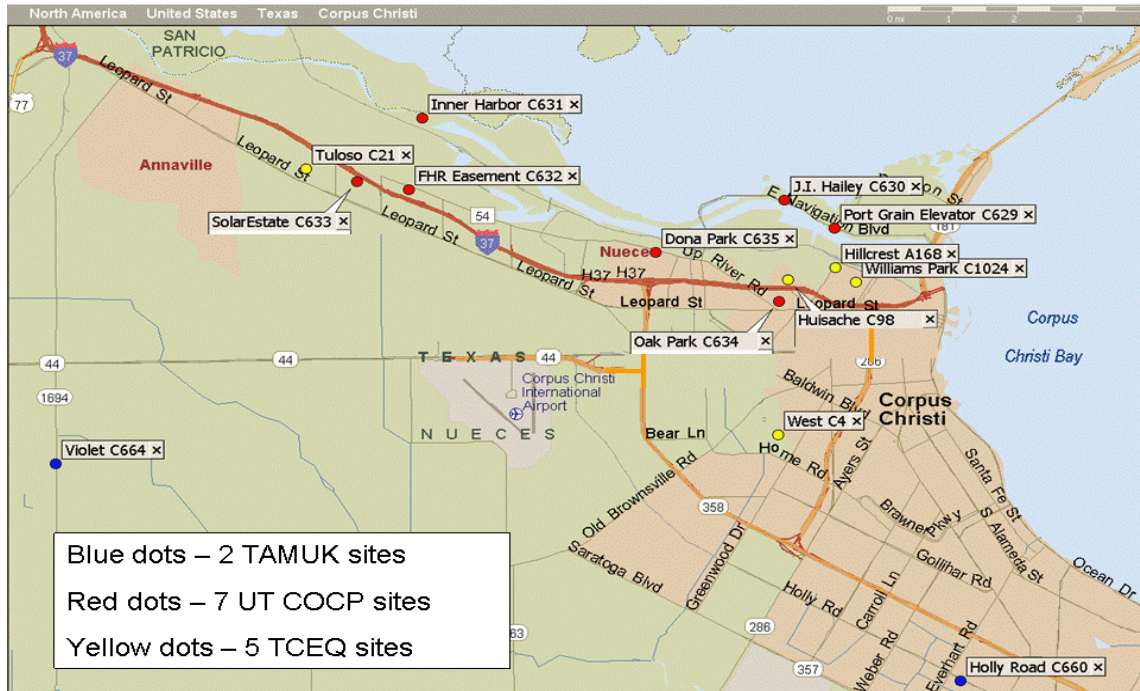
**Table 1.** Schedule of Air Monitoring Sites, Locations and Major Instrumentation

TCEQ CAMS#	Description of Site Location	Monitoring Equipment				
		Auto GC	TNMHC (T) / Canister (C)	H <sub>2</sub> S & SO <sub>2</sub>	Met Station	Camera
634	Oak Park Recreation Center ( <b>OAK</b> )	Yes	T		Yes	
629	Grain Elevator @ Port of Corpus Christi ( <b>CCG</b> )		T&C	Yes	Yes	
630	J. I. Hailey Site @ Port of Corpus Christi ( <b>JIH</b> )		T&C	Yes	Yes	
635	TCEQ Monitoring Site C199 @ Dona Park ( <b>DPK</b> )		T&C	Yes	Yes	Yes
631	Port of Corpus Christi on West End of CC Inner Harbor ( <b>WEH</b> )		T&C	Yes	Yes	
632	Off Up River Road on Flint Hills Resources Easement ( <b>FHR</b> )		T&C	Yes	Yes	
633	Solar Estates Park at end of Sunshine Road ( <b>SOE</b> )	Yes	T	Yes	Yes	Yes

### **Legend**

Auto GC	automated gas chromatograph
TNMHC	total non-methane hydrocarbon analyzer (all except 633 & 634 also have canister hydrocarbon samplers)
H <sub>2</sub> S	hydrogen sulfide analyzer
SO <sub>2</sub>	sulfur dioxide analyzer
Met Station	meteorology station consisting of measurement instruments for wind speed, wind direction, ambient air temperature and relative humidity
Camera	surveillance camera

**Figure 1. Corpus Christi Monitoring Sites**



## Glossary of terms

- **Pollutant concentrations** – Concentrations of most gaseous pollutants are expressed in units denoting their “mixing ratio” in air; i.e., the ratio of the number molecules of the pollutant to the total number of molecules per unit volume of air. Because concentrations for all gases other than molecular oxygen, nitrogen, and argon are very low, the mixing ratios are usually scaled to express a concentration in terms of “parts per million” (ppm) or “parts per billion” (ppb). Sometimes the units are explicitly expressed as ppm-volume (ppm<sub>V</sub>) or ppb-volume (ppb<sub>V</sub>) where 1 ppm<sub>V</sub> indicates that one molecule in one million molecules of ambient air is the compound of interest and 1 ppb<sub>V</sub> indicates that one molecule in one billion molecules of ambient air is the compound of interest. In general, air pollution standards and health effects screening levels are expressed in ppm<sub>V</sub> or ppb<sub>V</sub> units. Because hydrocarbon species may have a chemical reactivity related to the number of carbon atoms in the molecule, mixing ratios for these species are often expressed in ppb-carbon (ppb<sub>V</sub> times the number of carbon atoms in the molecule), to reflect the ratio of carbon atoms in that species to the total number of molecules in the volume. This is relevant to our measurement of auto-GC species and TNMHC, which are reported in ppb<sub>C</sub> units. For the purpose of relating hydrocarbons to health effects, this report notes hydrocarbon concentrations in converted ppb<sub>V</sub> units. However, because TNMHC is a composite of all species with different numbers of carbons, it cannot be converted to ppb<sub>V</sub>. Pollutant concentration measurements are time-stamped based on the start time of the sample, in Central Standard Time (CST), with sample duration noted.



- **Auto-GC** - The automated gas chromatograph collects a sample for 40 minutes, and then automatically analyzes it for some 47 hydrocarbon species. These include benzene and 1,3-butadiene, which are air toxics, various butene species that have relatively low odor thresholds, and a range of gasoline and vehicle exhaust components. Auto-GCs operate at Solar Estates CAMS 633 and Oak Park CAMS 634.
- **Total non-methane hydrocarbons (TNMHC)** – TNMHC represent a large fraction of the total volatile organic compounds released into the air by human and natural processes. TNMHC is an unspecified total of all hydrocarbons, and individual species must be resolved by other means, such as with canisters or auto-GCs. However, the time resolution of the TNMHC instrument is much shorter than the auto-GC, and results are available much faster than with canisters. TNMHC analyzers operate at all seven UT/CEER sites.
- **Canister** – Stainless steel canisters are filled with air samples when an independent sensor detects that elevated (see below) levels of hydrocarbons (TNMHC) are present. Samples are taken for various lengths of time (generally 20 minutes) to try to capture the chemical make-up of the air. In most cases, the first time on any day that the monitored TNMHC concentration exceeds 2000 ppbC at a site for a continuous period of 15 minutes or more, the system will trigger and a sample will be collected. Samples are sent to UT Austin and are analyzed in a lab to resolve some 60 hydrocarbon and 12 chlorinated species. Canister samplers have operated at all seven UT/CEER sites, but currently only at five (CAMS 629,630,631,632, and 635).
- **Effects Screening Levels (ESLs) and Reference Values (ReVs)** – The definitions and details about the use of ESLs and ReVs appear in the “RG-442” regulations guidance document *Guidelines to Develop Effects Screening Levels, Reference Values, and Unit Risk Factors*, found at <http://www.tceq.state.tx.us/files/rg-442.pdf> 4006501.pdf (Accessed January, 2008). Extracts from this document appear below:

*1.1 Legal Authority and Regulatory Use:* The Texas Clean Air Act (Chapter 382 of the Texas Health and Safety Code (THSC)) authorizes the TCEQ to prevent and remedy conditions of air pollution. Section 382.003 of the THSC defines air pollution as

*the presence in the atmosphere of one or more air contaminants or combination of air contaminants in such concentration and of such duration that:*

- *are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property; or*
- *interfere with the normal use and enjoyment of animal life, vegetation, or property.*

Sections 382.0518 and 382.085 of the THSC specifically mandate the TCEQ to conduct air permit reviews of all new and modified facilities to ensure that the operation of a proposed facility will not cause or contribute to a condition of air pollution. Air permit reviews typically involve evaluations of best available control technology and predicted air concentrations related to proposed emissions from the new or modified facility. In the review of proposed emissions, federal/state standards and chemical-specific **Effects Screening Levels** (ESLs) are used, respectively, for criteria and non-criteria pollutants. Because of the comprehensiveness of the language in the THSC, ESLs are developed for as many air contaminants as possible, even for chemicals with limited toxicity data.

Air contaminants may cause both direct and indirect effects. Direct effects are those that result from direct inhalation and dermal exposures to chemicals in air. Deposition of contaminants on soil and water—and subsequent uptake by plants and animals—may cause indirect effects in humans who consume those plants and animals. However, the THSC authorizes the prevention and remedy of air pollution based on effects and interference from contaminants *present in the atmosphere*, i.e., direct effects. Therefore, during the air permitting process, the TCEQ does not set air emission limits to restrict, or perform analysis to determine, the impacts emissions may have, by themselves or in combination with other contaminants or pathways, after being deposited on land or water or incorporated into the food chain. However, indirect effects are assessed during cleanup efforts under the Risk Reduction and Texas Risk Reduction Program Rules, described below.

The TCEQ also relies upon this authority to evaluate air monitoring data. Texas has the largest ambient air toxics monitoring network in the country, receiving monitoring data for up to 186 air toxics at approximately 57 different locations throughout the state. **Reference Values** (ReVs) and **Unit Risk Factors** (URFs) are used to evaluate measured air toxics concentrations for their potential to cause health and welfare effects, as well as to help the agency prioritize its resources in the areas of permitting, compliance, and enforcement.

*Sec. 1.7 Use of ESLs, ReVs, and URFs in TCEQ Program Areas:* The TS [Toxicology Section] develops ESLs, ReVs, and URFs to provide toxicological support to multiple program areas within the TCEQ... In the air permit review process, the TS utilizes short- and long-term ESLs to evaluate proposed emissions for their potential to adversely affect human health and welfare. For evaluation of ambient air monitoring results, acute and chronic ReVs and URFs are used to assess the potential for exposure to the measured concentrations to cause human health effects. To assess potential welfare effects for monitoring results, the TS uses odor- and vegetation-based ESLs.

The TCEQ Toxicology Section is continuing long-term analysis of these thresholds and persons may subscribe to an e-mail listserv for updates at the Web site <http://www.tceq.state.tx.us/implementation/tox/esl/ESLMain.html> (accessed January 2008).

The current ESLs for benzene are 55.5 ppbV for short term and 1.4 ppbV for long term exposure. TCEQ has recommending using the ReV for short term assessments of benzene concentrations. This number is 180 ppbV. Thus, only when individual auto-GC one-hour values or canister 20-minute values for benzene exceed 180 ppbV will a short-term “exceedance” for benzene be noted.

- **Elevated Concentrations** – In the event that measured pollutant concentrations are above a set threshold they are referred to as “elevated concentrations.” The values for these thresholds are summarized by pollutant below. As a precursor to reviewing the data, the reader should understand the term “*statistical significance*”. In the event that a concentration is higher than one would typically measure over, say, the course of a week, then one might conclude that a specific transient assignable cause may have been the pollution source, because experience shows the probability of such a measurement occurring under normal operating conditions is small. Such an event may be labeled “statistically significant” at level 0.01, meaning the observed event is rare enough that it is not expected to happen more often than once in 100 trials. This does not necessarily imply the occurrence of a violation of a health-based standard. A discussion of “elevated concentrations” and “statistical significance by pollutant type follows:

- For H<sub>2</sub>S or SO<sub>2</sub>, any measured concentration greater than the level of the state residential standards, which are 80 ppb for H<sub>2</sub>S and 400 ppb for SO<sub>2</sub>, is considered “elevated.” Note that the concentrations need not persist long enough to constitute an exceedance of the standard to be so regarded. In addition, any closely spaced values that are statistically significantly (at 0.01 level) greater than the long-run average concentration for a period of one hour or more will be considered “elevated” because of their unusual appearance, as opposed to possible health consequence. The rationale for doing so is that unusually high concentrations at a monitor may suggest the existence of unmonitored concentrations closer to the source area that are potentially above the state’s standards.
- For TNMHC, any measured concentration greater than the canister triggering threshold of 2000 ppbC is considered “elevated.” Note that the concentrations need not persist long enough to trigger a canister (900 seconds).
- For benzene and other air toxics in canister samples or auto-GC measurements, any concentration above the ReV is considered “elevated.” Note that 20-minute canister samples and 40-minute auto-GC measurements are both compared with the ReV or ESL, whichever is deemed appropriate by the TCEQ.
- Some hydrocarbon species measured in canister samples or by the auto-GC generally appear in the air in very low concentrations close to the method detection level. Similar to the case above with H<sub>2</sub>S and SO<sub>2</sub>, any values that are statistically significantly (at 0.01 level) greater than the long-run average concentration will be considered “elevated” because of their unusual appearance, as opposed to possible health consequence. The rationale for doing so is that unusually high concentrations at a monitor may suggest an unusual emission event in the area upwind of the monitoring site.

## 1. Auto-GC Data in Residential Areas

In this section the results of semi-continuous sampling for hydrocarbons at the two auto-GC sites – Solar Estates C633 and Oak Park C634 – are presented. These two sites are located in residential areas generally downwind of industrial emissions under northerly winds. In examining aggregated data one observes similar patterns of hydrocarbons at the two sites, with concentrations averaging higher at Oak Park than at Solar Estates.

Tables 2 and 3, pages 13 and 14, summarize data from the second quarter of 2008. Similarly, Tables 4 and 5, pages 15 and 16, summarize the four quarter period from July 1, 2007 – June 30, 2008. These tables are available to TCEQ staff at [http://rhone.tceq.state.tx.us/cgi-bin/agc\\_summary.pl](http://rhone.tceq.state.tx.us/cgi-bin/agc_summary.pl) (accessed July 2008). The tables show the average and maximum one-hour concentrations for 27 hydrocarbon species of interest for the period of interest and counts of how many measurements were made above an ESL or Reference Value (zero in this quarter). Note that not all data have been validated and are thus subject to change. All concentration values in the tables are in ppbV units. No concentrations or averages of concentrations were greater than effects screening levels or reference values during the second quarter of 2008 or over the most recent four-quarter period. In each table, "Total Samples Possible" is calculated from the total number of hours between the starting date/time and the ending date/time and may not represent the actual time the instrument was operational. The "Num Ambient Samples" column includes all ambient samples, including those that are not flagged as validated. The "Mean" is calculated as a weighted average of daily averages and takes into account the number of samples flagged ambient for each day. The "Over Annual" column is an indication of whether or not the calculated mean is over the established annual effect screening level and may not correspond to an actual annual exceedance.

The use of a short-term ESL to evaluate hourly benzene concentrations has been replaced with comparisons to a Reference Value. The current benzene Reference Value is 180 ppbV. The current short-term benzene ESL, which is only used for permitting purposes, is 55 ppbV.

Table 2. Oak Park 2nd quarter 2008 Auto-GC species of interest

AutoGC Summary Statistics for 48_355_0035 -- Oak Park [32]								
Date Range: 2nd Quarter 2008 -- April 1, 2008 00:00 CST to July 1, 2008 00:00 CST								
Total Samples Possible: 2184								
Species - ppbV units	Num Ambient Samples	Mean	Peak 1-Hour Value	Peak 24-Hour Value	Num Over 1-Hr	Num Over Veg	Num Over Odor	Over Annual
Ethane	1962	3.49	69.81	15.79	0	N/A	N/A	N/A
Ethylene	1962	0.35	31.6	3.3	0	0	0	No
Propane	1962	1.77	58.21	10.59	0	N/A	N/A	No
Propylene	1962	0.22	5.39	1.2	0	N/A	N/A	N/A
Isobutane	1962	0.84	35.33	6.63	0	N/A	0	No
n-Butane	1962	1.3	45.93	8.45	0	N/A	N/A	No
t-2-Butene	1962	0.1	6.69	0.73	0	N/A	0	N/A
1-Butene	1962	0.05	2.3	0.28	0	N/A	0	N/A
c-2-Butene	1962	0.05	5.94	0.59	0	N/A	0	N/A
Isopentane	1962	1.1	26.96	6.14	0	N/A	N/A	No
n-Pentane	1962	0.54	15.51	3.66	0	N/A	N/A	No
1,3-Butadiene	1962	0.03	1.1	0.14	0	N/A	N/A	No
t-2-Pentene	1962	0.05	2.02	0.23	0	N/A	0	N/A
1-Pentene	1962	0.02	0.95	0.1	0	N/A	0	N/A
c-2-Pentene	1962	0.01	0.84	0.07	0	N/A	0	N/A
n-Hexane	1962	0.14	5.52	1.11	0	N/A	0	No
Benzene	1962	0.14	3.72	0.79	0	N/A	0	No
Cyclohexane	1962	0.07	3.2	0.54	0	N/A	0	No
Toluene	1962	0.27	6.66	1.27	0	N/A	0	No
Ethyl Benzene	1962	0.02	0.47	0.09	0	N/A	0	No
p-Xylene + m-Xylene	1962	0.07	1.49	0.32	0	N/A	0	No
o-Xylene	1962	0.04	29.82	1.37	0	N/A	0	No
Isopropyl Benzene - Cumene	1962	0.01	0.56	0.2	0	N/A	0	No
1,3,5-Trimethylbenzene	1962	0.01	3.46	0.18	0	N/A	N/A	No
1,2,4-Trimethylbenzene	1962	0.05	10.49	0.57	0	N/A	N/A	No
n-Decane	1962	0.01	0.28	0.05	0	N/A	N/A	No
1,2,3-Trimethylbenzene	1962	0.01	2.31	0.12	0	N/A	N/A	No

Table 3. Solar Estates 2nd quarter 2008 Auto-GC species of interest

AutoGC Summary Statistics for 48_355_0041 -- Solar Estates [33]								
Date Range: 2nd Quarter 2008 -- April 1, 2008 00:00 CST to July 1, 2008 00:00 CST								
Total Samples Possible: 2184								
Species - ppbV units	Num Ambient Samples	Mean	Peak 1-Hour Value	Peak 24-Hour Value	Num Over 1-Hr	Num Over Veg	Num Over Odor	Over Annual
Ethane	1839	3.85	44.52	10.72	0	N/A	N/A	N/A
Ethylene	1839	0.19	6.85	0.87	0	0	0	No
Propane	1839	1.87	26.52	6.65	0	N/A	N/A	No
Propylene	1839	0.08	2.22	0.38	0	N/A	N/A	N/A
Isobutane	1839	0.62	8.82	2.39	0	N/A	0	No
n-Butane	1839	0.87	29.31	3.39	0	N/A	N/A	No
t-2-Butene	1839	0.04	0.31	0.09	0	N/A	0	N/A
1-Butene	1839	0.01	0.64	0.06	0	N/A	0	N/A
c-2-Butene	1839	0.01	0.28	0.1	0	N/A	0	N/A
Isopentane	1839	0.59	14.1	1.95	0	N/A	N/A	No
n-Pentane	1839	0.36	8.01	1.3	0	N/A	N/A	No
1,3-Butadiene	1839	0.01	1.4	0.08	0	N/A	N/A	No
t-2-Pentene	1839	0.01	0.31	0.05	0	N/A	0	N/A
1-Pentene	1839	0	0.16	0.03	0	N/A	0	N/A
c-2-Pentene	1839	0	0.16	0.03	0	N/A	0	N/A
n-Hexane	1839	0.13	2.1	0.43	0	N/A	0	No
Benzene	1839	0.13	5.31	0.63	0	N/A	0	No
Cyclohexane	1839	0.09	2.04	0.37	0	N/A	0	No
Toluene	1839	0.15	2.63	0.53	0	N/A	0	No
Ethyl Benzene	1839	0.01	0.54	0.17	0	N/A	0	No
p-Xylene + m-Xylene	1839	0.08	2.61	0.63	0	N/A	0	No
o-Xylene	1839	0.02	6.02	0.28	0	N/A	0	No
Isopropyl Benzene - Cumene	1839	0.01	0.62	0.06	0	N/A	0	No
1,3,5-Trimethylbenzene	1839	0.01	0.28	0.07	0	N/A	N/A	No
1,2,4-Trimethylbenzene	1839	0.02	0.48	0.12	0	N/A	N/A	No
n-Decane	1839	0.02	0.56	0.14	0	N/A	N/A	No
1,2,3-Trimethylbenzene	1839	0.01	0.23	0.1	0	N/A	N/A	No

Table 4. Oak Park four-quarter July 2007-June 2008 Auto-GC species of interest

AutoGC Summary Statistics for 48_355_0035 -- Oak Park [32]								
Date Range: July 1, 2007 00:00 CST to July 1, 2008 00:00 CST								
Total Samples Possible: 8784								
Species - ppbV units	Num Ambient Samples	Mean	Peak 1-Hour Value	Peak 24-Hour Value	Num Over 1-Hr	Num Over Veg	Num Over Odor	Over Annual
Ethane	7599	7.87	359.25	49.27	0	N/A	N/A	N/A
Ethylene	7599	0.85	56.34	7.97	0	0	0	No
Propane	7599	5.11	804.95	49.19	0	N/A	N/A	No
Propylene	7599	0.55	76.97	6.70	0	N/A	N/A	N/A
Isobutane	7599	2.31	377.81	23.36	0	N/A	0	No
n-Butane	7599	3.56	656.97	67.92	0	N/A	N/A	No
t-2-Butene	7599	0.15	44.58	2.87	0	N/A	0	N/A
1-Butene	7599	0.09	2.30	0.48	0	N/A	0	N/A
c-2-Butene	7599	0.11	7.88	2.18	0	N/A	0	N/A
Isopentane	7597	3.08	354.39	121.16	0	N/A	N/A	No
n-Pentane	7598	1.93	340.31	88.42	0	N/A	N/A	No
1,3-Butadiene	7599	0.07	1.41	0.23	0	N/A	N/A	No
t-2-Pentene	7599	0.10	2.88	0.41	0	N/A	0	N/A
1-Pentene	7599	0.05	3.76	0.37	0	N/A	0	N/A
c-2-Pentene	7599	0.04	1.23	0.18	0	N/A	0	N/A
n-Hexane	7599	0.47	75.21	5.60	0	N/A	0	No
Benzene	7599	0.42	38.15	6.41	0	N/A	0	No
Cyclohexane	7599	0.19	32.99	2.25	0	N/A	0	No
Toluene	7599	0.62	66.44	4.43	0	N/A	0	No
Ethyl Benzene	7599	0.06	30.41	1.99	0	N/A	0	No
p-Xylene + m-Xylene	7599	0.18	58.25	3.85	0	N/A	0	No
o-Xylene	7599	0.07	29.82	1.85	0	N/A	0	No
Isopropyl Benzene - Cumene	7599	0.03	16.29	1.04	0	N/A	0	No
1,3,5-Trimethylbenzene	7599	0.02	20.88	1.35	0	N/A	N/A	No
1,2,4-Trimethylbenzene	7599	0.07	22.29	1.46	0	N/A	N/A	No
n-Decane	7599	0.03	26.12	1.69	0	N/A	N/A	No
1,2,3-Trimethylbenzene	7599	0.02	19.53	1.26	0	N/A	N/A	No

Table 5. Solar Estates four quarters July 2007-June 2008 Auto-GC species of interest

AutoGC Summary Statistics for 48_355_0041 -- Solar Estates [33] Date Range: July 1, 2007 00:00 CST to July 1, 2008 00:00 CST Total Samples Possible: 8784								
Species -ppbV units	Num Ambient Samples	Mean	Peak 1-Hour Value	Peak 24-Hour Value	Num Over 1-Hr	Num Over Veg	Num Over Odor	Over Annual
Ethane	7525	6.92	132.94	29.44	0	N/A	N/A	N/A
Ethylene	7525	0.40	17.23	6.93	0	0	0	No
Propane	7525	4.13	94.64	19.55	0	N/A	N/A	No
Propylene	7525	0.28	51.50	35.42	0	N/A	N/A	N/A
Isobutane	7525	1.47	47.64	8.25	0	N/A	0	No
n-Butane	7525	2.24	95.36	15.23	0	N/A	N/A	No
t-2-Butene	7525	0.07	2.66	0.52	0	N/A	0	N/A
1-Butene	7525	0.04	4.63	0.36	0	N/A	0	N/A
c-2-Butene	7525	0.04	7.10	0.63	0	N/A	0	N/A
Isopentane	7525	1.41	104.74	7.55	0	N/A	N/A	No
n-Pentane	7525	0.87	100.90	6.33	0	N/A	N/A	No
1,3-Butadiene	7525	0.04	25.28	1.71	0	N/A	N/A	No
t-2-Pentene	7525	0.03	2.81	0.30	0	N/A	0	N/A
1-Pentene	7525	0.02	1.75	0.15	0	N/A	0	N/A
c-2-Pentene	7525	0.02	1.35	0.14	0	N/A	0	N/A
n-Hexane	7311	0.32	47.34	2.59	0	N/A	0	No
Benzene	7311	0.25	11.48	1.07	0	N/A	0	No
Cyclohexane	7311	0.20	14.00	1.20	0	N/A	0	No
Toluene	7310	0.31	10.48	1.51	0	N/A	0	No
Ethyl Benzene	7311	0.04	1.29	0.19	0	N/A	0	No
p-Xylene + m-Xylene	7311	0.20	13.63	3.00	0	N/A	0	No
o-Xylene	7311	0.06	6.02	0.41	0	N/A	0	No
Isopropyl Benzene - Cumene	7311	0.01	3.19	0.44	0	N/A	0	No
1,3,5-Trimethylbenzene	7311	0.02	0.72	0.26	0	N/A	N/A	No
1,2,4-Trimethylbenzene	7311	0.06	5.67	0.97	0	N/A	N/A	No
n-Decane	7311	0.05	3.35	3.12	0	N/A	N/A	No
1,2,3-Trimethylbenzene	7311	0.02	0.52	0.19	0	N/A	N/A	No



A notable finding is that benzene concentrations are practically and statistically significantly lower at both sites compared with past years. Table 6, below, shows a comparison between second quarter averages at Oak Park CAMS 634 from 2005 to 2008, and Table 7, below, shows a comparison between second quarter averages at Solar Estates CAMS 633 from 2005 to 2008. Before drawing a conclusion as to whether this is a result of lower emissions, one must examine the meteorological factors affecting concentrations. Because winds blow less frequently from the north in the second and third quarters of the year compared to the first and fourth quarters, fewer effects from industries north of these sites are measured during the second quarter. Fewer northerly winds in 2008 may have helped lower the average. To test this possibility, an evaluation will be performed next quarter for averages using only hours with winds from 270 degrees to 360 degrees and 0 degrees to 90 degrees.

**Table 6. Summary of 2nd Q benzene at Oak Park 2005-2008, ppbv units**

<b>AutoGC Statistics for Benzene at Oak Park 2nd Quarter 2005, 2006, 2007, 2008</b>				
<b>Quarter</b>	<b>Num Ambient Samples</b>	<b>Mean</b>	<b>Peak 1-Hour Value</b>	<b>Peak 24-Hour Value</b>
2Q05	1935	0.20	11.39	1.28
2Q06	1913	0.31	19.99	3.27
2Q07	1957	0.32	16.57	3.74
2Q08	1962	0.14	3.72	0.79

**Table 7. Summary of 2nd Q benzene at Solar Estates 2005-2008, ppbv units**

<b>AutoGC Statistics for Benzene at Solar 2nd Quarter 2005, 2006, 2007, 2008</b>				
<b>Quarter</b>	<b>Num Ambient Samples</b>	<b>Mean</b>	<b>Peak 1-Hour Value</b>	<b>Peak 24-Hour Value</b>
2Q05	1619	0.25	3.46	0.73
2Q06	1489	0.18	4.97	0.84
2Q07	1330	0.22	3.14	0.92
2Q08	1839	0.13	5.31	0.63

## 2. Pollution Event Case Study

### May 8, 2008, Elevated H<sub>2</sub>S at Dona Park

A 30-min maximum value of 58.8 ppb for H<sub>2</sub>S was measured at Dona Park CAMS 635 on May 8, 2008. This did not constitute a measured exceedance of the State's Residential Standard (80 ppb). However, short-term 5-min maximum of 131 ppb was measured at 13:40 CST. Winds were from the east-southeast (116 deg). Huisache CAMS 98 was upwind but did not measure unusual concentrations, and no other site measured elevated levels that day. There were no reported upsets nearby for this day or surrounding dates in the TCEQ database as of July 23, 2008. The data show a coincident rise in TNMHC and methane with H<sub>2</sub>S, which may point to sour gas from a well or pipeline. Figure 2 below shows the time series for data for wind direction, SO<sub>2</sub>, H<sub>2</sub>S, TNMHC, and methane. The rise in concentrations was associated with winds from 110-120 degrees.

**Figure 2. Time Series for Pollutants and Winds May 8, 2008**

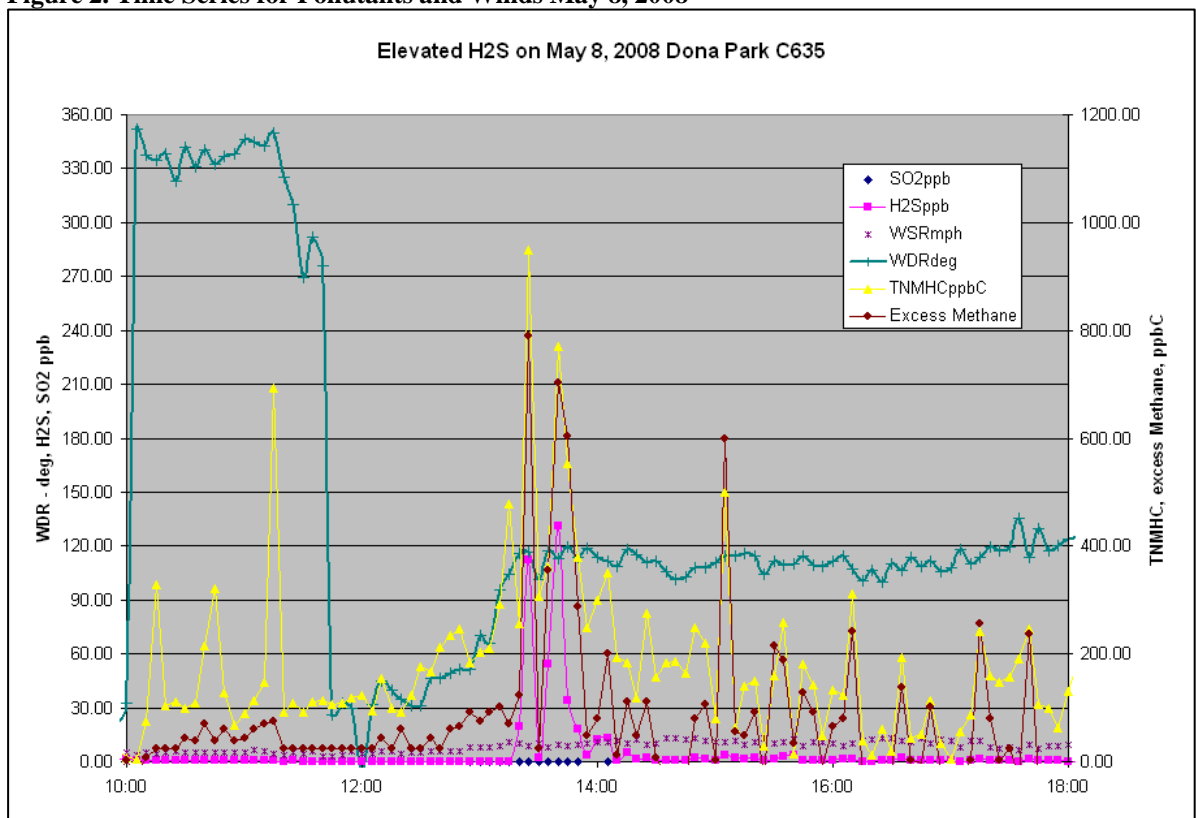
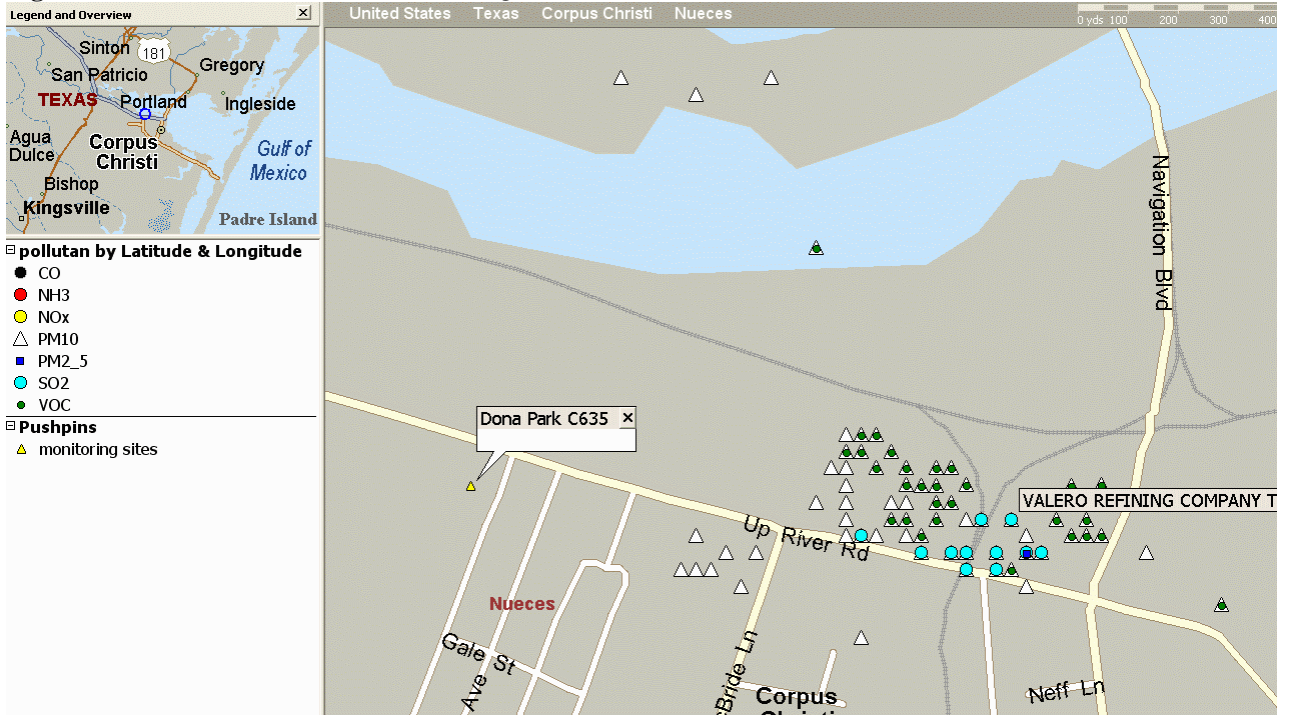
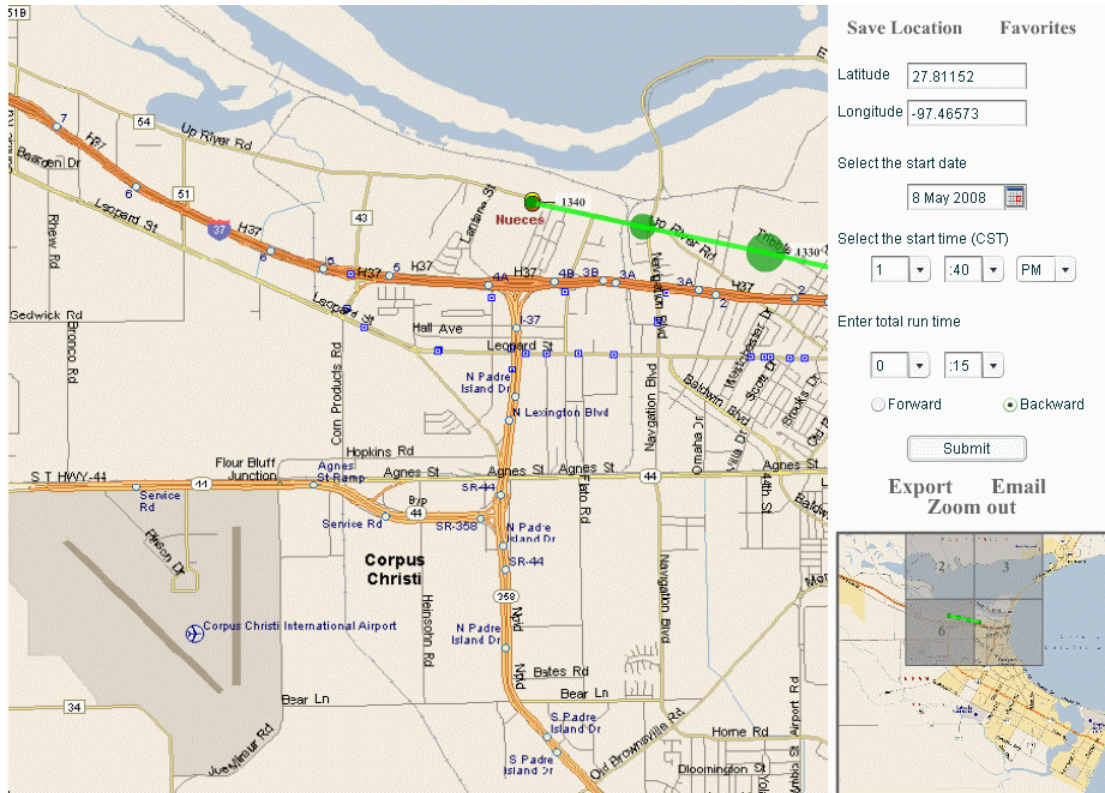


Figure 3 on page 19 shows a map of the industrial point sources from the TCEQ's database. Several sources of sulfur compounds are situated along or near Up River Road east of Dona Park. Figure 4 on page 19 shows the surface back trajectory corresponding to the time of maximum H<sub>2</sub>S concentration. Based on the wind data and low upwind concentrations, it is likely that a source in the Up River Road area east of Dona Park had a minor release of some kind.

**Figure 3. Industrial Point Sources in TCEQ Database East of Dona Park**



**Figure 4. Surface Back-trajectory Dona Park at May 8, 2008 13:40  $H_2S=131$  TNMHC=769  $CH_4=2502$  WS=9 WDR=113**



### 3. Update on Efforts to Couple Pollution and Wind Data to Locate Sources

After the April 2008 meeting of the Volunteer Advisory Board, two requests were made for further work on pinpointing emission sources by looking at the rays from monitors to the directions upwind during pollution events, or by pooling concentrations with coincident wind direction for long time periods to discern directions generally associated with elevated concentrations. Actual triangulation using multiple monitors has been challenging. However, one example of successful source determination is discussed here.

One of the requests dealt specifically with the source of elevated TNMHC at Dona Park CAMS 635. Two findings have been made:

- The increased frequency of elevated TNMHC concentrations at Dona Park during the later months in 2007 is relatable to initial operations in a new oil and gas field to the northwest.
- Elevated concentrations measured from the southeast infrequently but consistently since the onset of monitoring appear to be associated with an incineration facility a half mile away.

Figure 5 on the following page is from an analysis done in May 2008 at the request of the TCEQ Regional Office to investigate the source of an increase in the frequency of elevated TNMHC at Dona Park in late 2007. The Region also had an interest in seeing if a suspected emission source was being detected by the monitoring network, within which Dona Park was the closest site. Figure 5 shows the time series for all observations greater than 1000 ppbC, where data have been separated into four groups based on wind direction. This 1000 ppbC level was selected to try to characterize only the (approximate<sup>1</sup>) top one percent of 5-minute values. The data have been filtered to remove very low speed winds of 3 miles per hour or less. This is because with lower wind speeds one has less confidence in the upwind direction.

In the graphs, each tick mark on the x-axis represents the approximate start of a three month period. So “10/30/2007” is meant to cue the beginning of the November 2007, and the unlabeled last tick mark cues the onset of February 2008. Also, regarding the y-axis, note that currently the TNMHC instrument at Dona Park is tuned to attenuate any concentration above 5,000 ppbC to approximately 5,000 ppbC, but that higher concentrations may have been present and underreported.

Figure 5 shows that elevated TNMHC can arise from all four quadrants at Dona Park, with the lowest frequency associated with southwest quadrant 3 winds. This is in large part owing to the very low occurrence of winds from the west in the Corpus Christi area. A few dates are labeled in the graphs for which many elevated values were measured. In the southeast quadrant 2 graph, the October 16 – 17, 2007 data may be relatable to a known pipeline leak that occurred southeast of the site over the period from October 7 – 26, 2007. The data for the northwest quadrant 4 shows the increase in elevated concentrations beginning in late October 2007 and ending in February 2008. The TCEQ

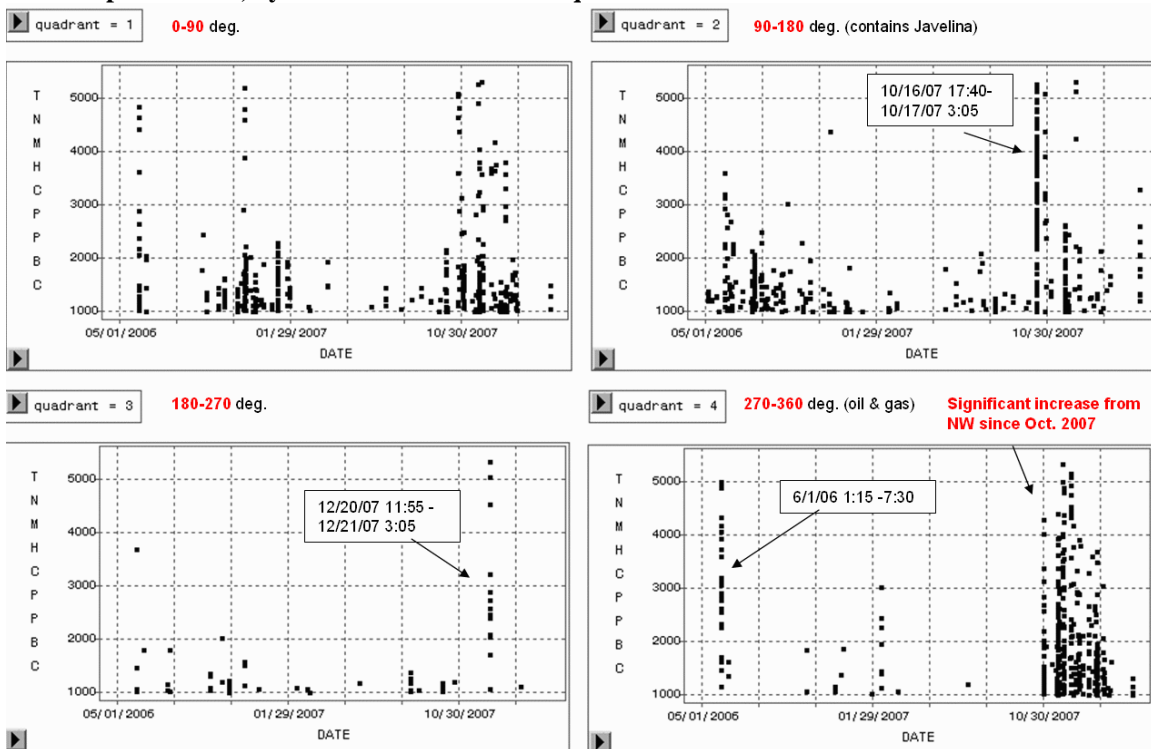
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<sup>1</sup> The actual 99<sup>th</sup> percentile for 5-minute TNMHC at Dona Park, May 2006 – June 2008 is 970 ppbC.

Region is aware of oil and gas extraction operations to the northwest of Dona Park during this period.

Because of the suspected effects of a known nearby pipeline source during the October 7 – 26, 2007 period, data from this period has been removed from the data set shown in Figure 6, page 22. The Figure 6 graph shows TNMHC plotted as a function of wind direction. Two red lines have been overlaid to indicate the key directions represented by the obvious clusters of points: one centered at 114 degrees and one at 345 degrees. The data from the 345 degree cluster come largely from the October 2007 – February 2008 period from oil and gas extraction operations. However, as Figure 5 shows for quadrant 2, winds from the southeast have carried elevated TNMHC over multiple years.

**Figure 5. Dona Park TNMHC 5-min. measurements > 1000 ppbC (only winds >= 3 mph), May 1, 2006 – April 30 2008, by date and wind direction quadrant**



**Figure 6. Dona Park TNMHC 5-min. measurements > 1000 ppbC (only winds >= 5 mph), May 1, 2006 – April 30 2008 (exclude 10/9-26), by wind direction angle**

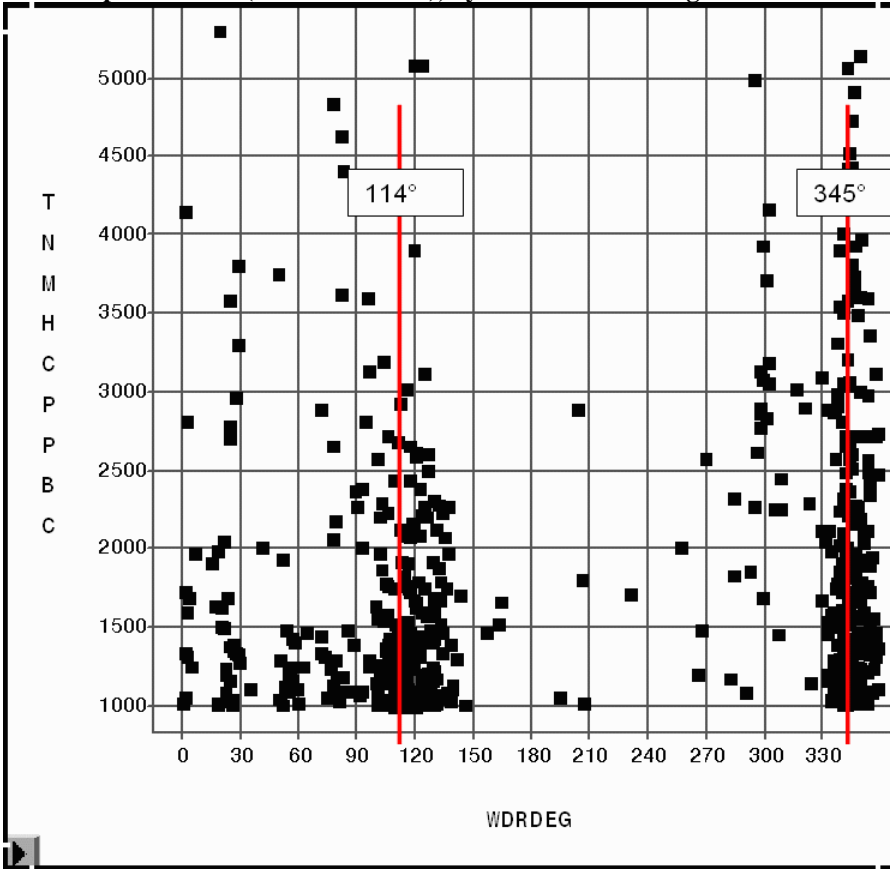
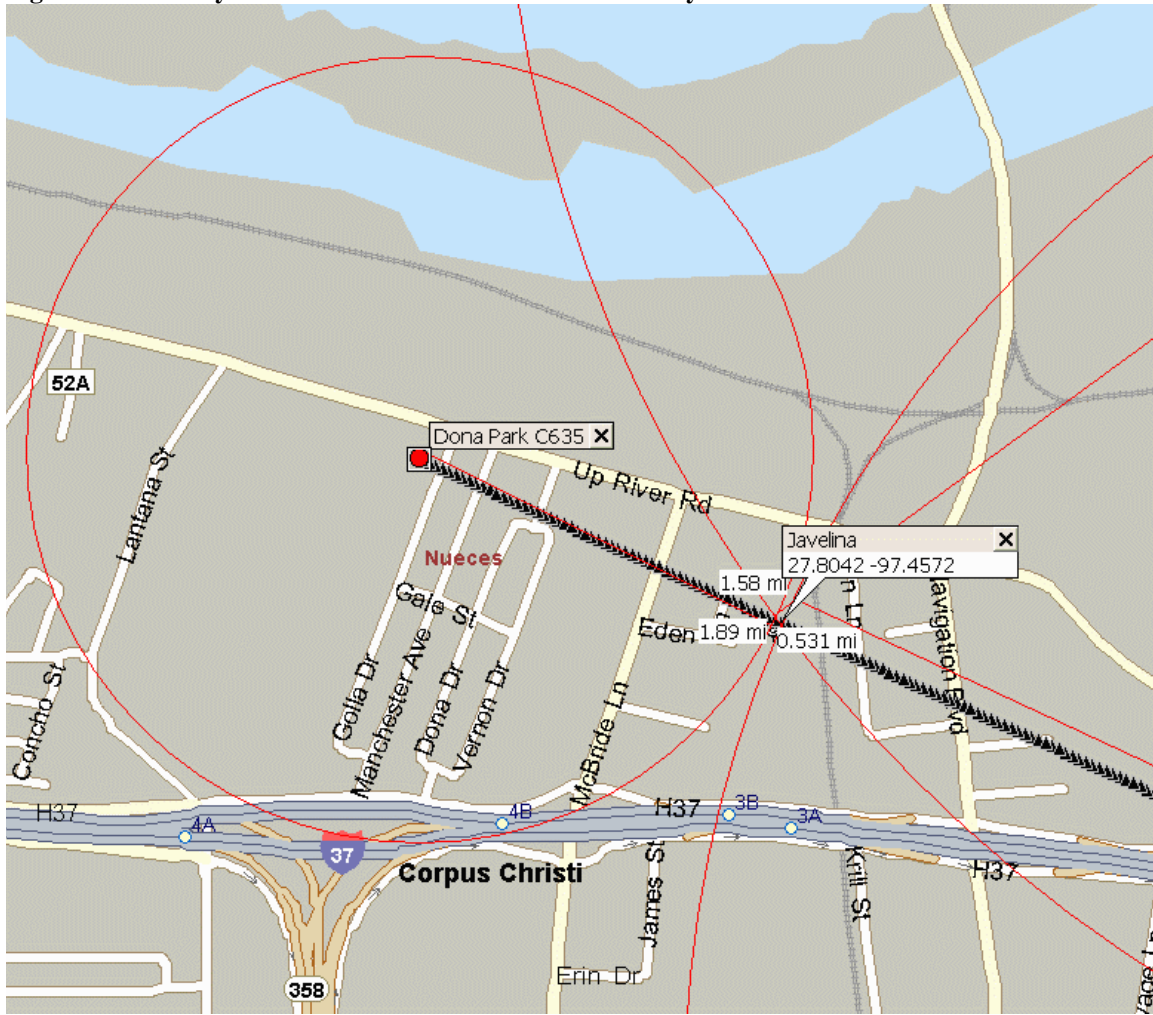


Figure 7 below shows the result of plotting the direction for the southeast cluster on a map. This is the black line from Dona Park. Data were also examined from the J.I. Haley and Oak Park sites to see if elevated concentration by wind direction peaks could be found in a manner to allow triangulation. The red circles and arcs in Figure 7 are centered on the Dona Park, J. I. Hailey, and Oak Park CAMS sites and they intersect at the location of a suspected emission source. However, for JIH or OAK to have a direction peak point to this location, or to any point within a triangle formed by these three sites, some westerly component in winds is required. Data analysis shows that the required southwest winds for JIH and west-northwest winds for OAK occur very infrequently, and no TNMHC peaks could be discerned for these sites in the direction hypothesized. However, the ray drawn from Dona Park alone passed very close to a suspected emission source. This source is an incineration facility one half mile away (0.531 mi in Figure 7) from Dona Park, 1.58 miles from Oak Park, and 1.89 miles from J. I. Hailey.

Figure 7. Geometry of monitor locations and Javelina facility

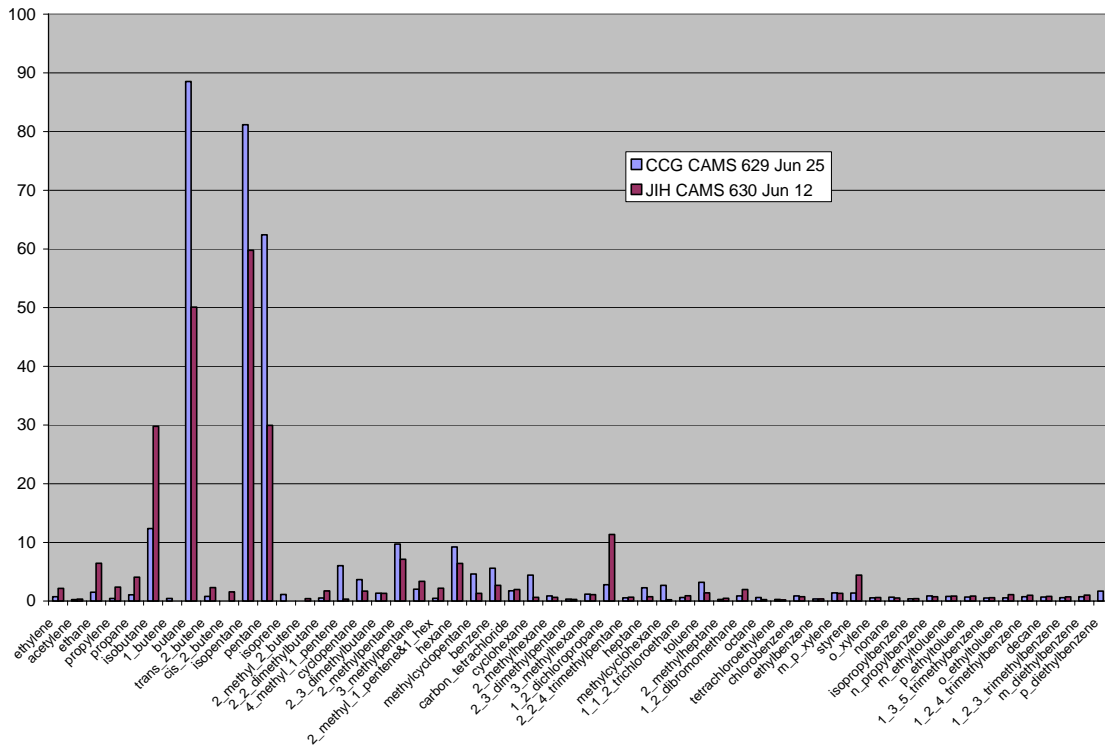


#### 4. Canister Sample Analysis

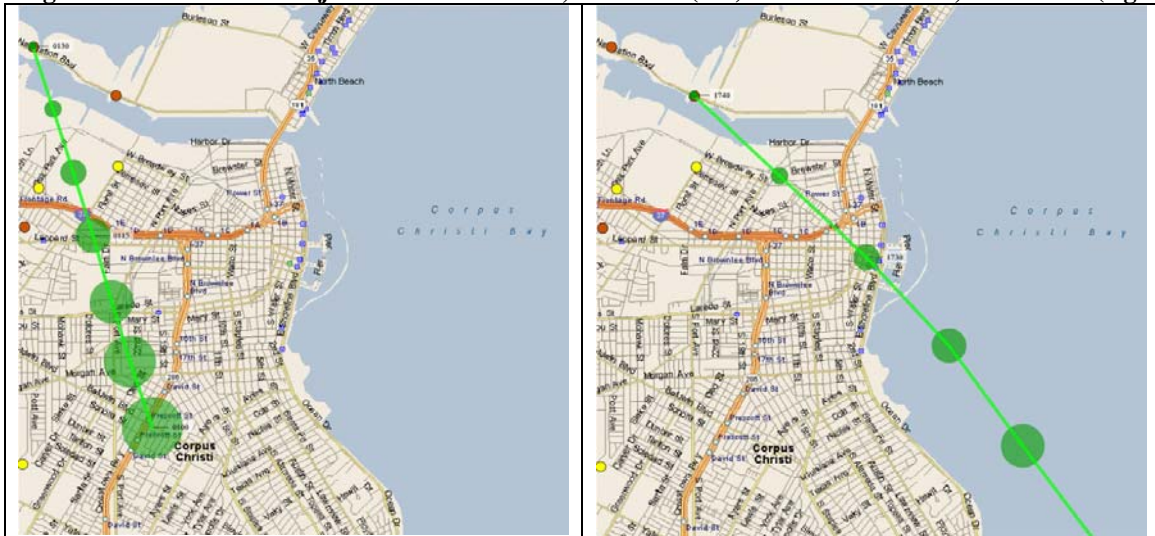
Only two canisters were triggered during the second quarter of 2008. In Figure 8, page 24, data from both canisters are presented side by side. One can is from JIH on June 12, triggered around 1:35 CST under steady (10 mph) south-southeast (158-170 degrees) winds. During the triggering period, elevated SO<sub>2</sub> (up to 10 ppb) was also being measured. The second can is from the nearby Port Grain or CCG site on June 25 at 17:39 CST under steady (10 mph) east-southeast (98-112 degrees) winds. However, as has been noted in the past, wind measurements at this site are compromised by the large grain storage and loading tower nearby to the southeast. At the time this canister sample was collected, all other monitors in the network measured winds from 134 – 151 degrees. No emission events are reported in the TCEQ database for either of these two dates as of July 23, 2008.

Both canisters yielded a butane and pentane-dominated mix of hydrocarbons. Note that several new chlorinated species are now being analyzed by the laboratory, and the June 25 JIH sample contains 11 ppbV of 1,2-dichloropropane. Figure 9, page 24, shows the surface back-trajectories for these two cases. The TCEQ Region has investigated the June 25 case.

**Figure 8. Side-by-side comparison of canister data from JIH June 12 with canister data from CCG June 25**



**Figure 9. Surface back-trajectories JIH June 12, 1:35 CST (left) and CCG June 25, 17:40 CST (right)**





## **Conclusions from the Second Quarter 2008 Data**

In this quarter's report, several findings have been made:

- Periodic air pollution events continue to be measured on a routine basis, but values of hydrocarbons above the reference values and effects screening levels are rarely observed. No measurements exceeded ESLs or Reference Values.
- Benzene concentrations in residential areas were statistically significantly lower this quarter compared to the same quarter in past years of monitoring.
- An analysis of wind direction and TNMHC data at Dona Park shows two results: 1.) oil and gas fields to the northwest of the site contributed to the increased frequency of elevated TNMHC concentration in late 2007; 2.) an industrial site a half mile to the southeast of the site has contributed to elevated TNMHC since monitoring began.

Further analyses will be provided upon request.

## **APPENDIX B**

**April 8, 2008  
Advisory Board Meeting Notes**

ADVISORY BOARD MEETING NOTES  
**Corpus Christi Air Monitoring and Surveillance Camera Installation  
and Operation Project**

Texas A&M University - Corpus Christi  
*Room 1003, NRC Building*  
*1:30 pm – 3:30 pm*  
April 8, 2008

Advisory Board Members Present:

Mr. Ron Barnard	City of Corpus Christi
Dr. Eugene Billiot	Texas A&M University Corpus Christi
Dr. Glen Kost	Public Health Awareness
Ms. Pat Suter	Coastal Bend Sierra Club

Project Personnel Present:

Mr. David Allen	The University of Texas at Austin
Mr. Vince Torres	The University of Texas at Austin
Dr. David Sullivan	The University of Texas at Austin
Mr. David Brymer	TCEQ Headquarters – Austin
Mr. David Kennebeck	TCEQ – Region 14
Mr. David Turner	TCEQ – Region 14
Mr. Ken Rozacky	TCEQ Headquarters – Austin
Ms. Kathleen Aisling	EPA – Region 6
Dr. Elena McDonald-Buller	The University of Texas at Austin
Mr. Gary McGaughey	The University of Texas at Austin

I. Call to Order and Welcome

Mr. Vincent Torres called the meeting to order at 1:35 pm.

II. Project Overview and Status

A. Data Collection and Analyses

Dr. Dave Sullivan presented a summary, *Air Monitoring Data Analysis for Corpus Christi, April 8, 2008*, of the analysis of the sites monitoring data from the period of October 1, 2007 through December 31, 2007. The report also included an explanation of the new Effects Screening Levels (ESL) and Reference Values (ReV) and analysis data from the air canisters collected during the quarter. He also provided a comparison, *Comparing Air Toxics Concentrations across Texas Cities*, of the air toxics concentrations for the Benzene and TNMHC in Corpus Christi relative to other cities/areas in Texas. Dr. Sullivan also provided preliminary information, *Preliminary Information about Oil Spill at CITGO Facility, February 22, 2008*, about the oil spill at the CITGO facility on Feb. 22, 2008.

Dr. Kost asked about what was the Railroad Commission's responsibility to the Saxet Fields area between I-37 and 44. He mentioned that there was a report that 70% of leakage came from this area. Dr. Kost had talked to Russell Pesek, contact person from the Railroad Commission at the Long Term Health group meeting in regards to the Saxet Fields area. Dr. Kost asked Mr. David Turner what he knew of the RR Commission's access to the area and what TCEQ's responsibility to this area was.

Dr. Sullivan said he would try and locate this area Saxet Field that is under the RR Commission. He would report any information he learns back to the Board. **Action Item**

Ms. Pat Suter was concerned about raising the ESL and the ReVs when not enough is known yet about the previously established levels. She was interested in knowing the justification for the new higher concentrations. Was there a well defined explanation? Dr. Kost requested if the Board could be notified of any new regulated revisions to the toxicology assessments. Dr. Sullivan said he would forward any notices of the new regulated revisions when he learns of them to the Board. **Action Item** (*Carried out on April 18, 2008 e-mail-D. Sullivan*)

Dr. Sullivan discussed the canister sampling results of the 4<sup>th</sup> quarter. There were 40 cans triggered during the 4<sup>th</sup> quarter. Now he has enough information to be able to classify the samples by categories that he has developed based on chemical compounds found in the sample. Dr. Sullivan will now keep track of triggered cans per quarter and classify the samples using these categories. He will report these finding to the Board. **Action Item**

In discussing the 4<sup>th</sup> quarter canisters there was a notable sample obtained on 10/18 that reported compound that exceeded the short term ESL. The most concern was in an elevated level in isopentane for health reasons. In reviewing the slides from the surface back-trajectory circles, which show 5 min time steps and grow to reflect increasing uncertainty in upwind area, the loading/unloading of ships at the docks could possibly be a source. The hypothesis is based on the sudden rise in concentration under a strong, steady wind, it seems reasonable to guess that the source was relatively nearby and that a sudden operation at that source commenced shortly after 1:00am. Data documented with Mr. Burns, at the Port of CC, suggested that both a tug boat and a ship were being loaded and unloaded in dock.

Dr. Kost suggested that at the JI Hailey site with all the loading and unloading of ships that this site is needing a surveillance camera. He was concerned with the unloading and reloading of ships and the escaping vapor that this might pose as a possible safety issue.

Dr. Billiot offered that the exhaust posed no risk due to the fact that it had already been burned off.

Mr. Turner added that the shipping companies have now changed to new loading procedures due to being notified of previous episodes. He suggested that an infrared camera is needed for this type of episode.

There was a question asked if this type of infrared camera video can be shown at a meeting. David Turner replied that yes, it can be shown and will be ready for the next meeting. **Action Item**

### **III. Related Matters**

#### **A. Annual Report to the US District Court**

Mr. Torres updated the Board on the presentation of the 2007 Annual Project Report to the Honorable Judge Janice Graham Jack, U.S. District Court. It was reported that the Honorable Judge Jack was pleased with the progress of the project. She did ask a few questions during the presentation, such as how many people were actually accessing the web site information. The information that the Honorable Judge Jack requested has been provided by email by the staff from UT.

#### **B. Update on Railroad Commission to be part of discussion of the Board**

Oil and Gas Division, District 04, Director, Mr. Fermin Munoz, Jr., of the Railroad Commission was contacted. He will attend and will make a presentation at the next meeting.

Dr. Kost reported that the RR Commission had vast resources for possible additional funding for this project.

Mr. Ron Barnard was going to follow up with Dr. John from Texas A&M Kingsville, to get a copy of his presentation on TAMUK research on long-term health related data. Dr. Kost was most interested in the area of Saxet Fields.

### C. Update on the Separate Environmental Project (SEP) Activities

In July 2007, UT was informed of a new SEP award in the amount of \$10,244. In response to previous Board discussions, UT wrote a proposal for a third surveillance camera. The use of a camera, at the Inner Harbor site, would be used to verify ship loading and unloading activities.

With regard to the approval of the Port of Corpus Christi to install the camera, the project has not been given approval to install a camera at the JI Haley site, the Inner Harbor site or the Port Grain Elevator site because of security issues.

TCEQ through Mr. Turner is continuing to work with the Port of Corpus Christi. TCEQ has requested information from the Port of Corpus Christi for other purposes; however it is not a quick process. Mr. Turner suggested keeping the money budgeted for the surveillance camera and he will continue to work with the Port of Corpus Christi. He suggested possibly having a meeting with the Port officials. Mr. Turner also felt that the camera may or may not be helpful.

Dr. Kost requested a copy of the further analyses referenced on page 32 in the conclusions from Dr. Sullivan's section of the Fourth Quarter 2007 report. A copy of the additional analysis will be sent to Dr. Kost **Action Item** (*I have contacted Dr. Kost on 4/25/08, to ask for specifics on his request- D. Sullivan*)

### D. Enhanced Automated Trajectory Tool

Internal testing of the Automated Alert System with the Enhanced Automated Trajectory file is complete. After meeting with the TCEQ to obtain information on their experience with this Automated Alert Notification System, a meeting with industry will be arranged to enlist their participation.

### E. Update on one pager about this project

Dr. Kost requested a corrected version of the one pager without the Table 1 printing problem. The updated one pager will be sent via email to all of the Board members. **Action Item** (*Corrected version sent by email on 4/09/08- T.Mulvey*)

### F. Update the prospect of funding from Class Action Suit in Houston

Dr. David Allen addressed the board referring to the 2006 annual report presentation before the Honorable Judge Jack. She mentioned the possibility of a large new environmental project. Judge Jack let us know that there was potentially \$10 million dollars available for a project that was the result of unpaid royalties. Five million of the unpaid royalties might have to be paid to Texas and placed on the unclaimed property list. The \$4.5 million dollars was for non-Texas royalties and that amount was available for us to submit a project proposal to the Judge. UT submitted a proposal on February 14, 2008. UT was awarded \$4,602,598.66 on March 3, 2008.

Dr. Allen stated that the goal of the Air Toxics Modeling Project would be to develop air quality modeling tools that will utilize the unique air toxics measurement information being collected in Corpus Christi and Houston. It will start with existing modeling tools being used by the EPA and build innovative new tools, focusing on benzene and other petroleum related air toxics.

Dr. Allen stated that UT would report to the Honorable Judge Jack with quarterly and annual reports, as with the COCP Project.

Dr. Kost wanted to know if this project would collaborate with the UT Health Studies in Houston. He emphasized that he would like to make all tools readily available to the public.

Dr. Allen stated that we needed to organize a planning meeting to layout specific objectives for the Air Toxics Project. He also mentioned that we may or may not receive the 2<sup>nd</sup> stage funding for this project. However, he would like to launch a planning process for the 1st phase of the project.

Dr. Allen introduced Dr. Elena McDonald-Buller and Mr. Gary McGaughey from UT as the lead modelers for the UT project. He also mentioned that he would bring on Environ and Tx A&M College Station, Professor John Nelson-Gammon as subcontractors to this project.

#### **IV. Advisory Board**

##### **A. Renewal of the terms of the members of the board**

Mr. Torres informed the Board that Ms. Charlotte Knesek had submitted her resignation citing health reasons. He asked the board to be thinking of potential candidates for the 2 board members who will need to be replaced: 1.) Mr. Ron Barnard, who will be retiring and 2.) Ms. Charlotte Knesek, who has resigned.

##### **B. Schedule for next meeting of the Board**

Mr. Torres asked the board to look at their calendars and start thinking about meeting dates for the rest of the year. The target dates would be in the week of July 7, if desired by the board, and in the week of Oct 20. Dr. Kost replied that he was available for both of those meeting dates at this present time.

#### **V. Other Issues**

Mr. Torres informed the Board that he just learned of a SEP Award in the amount of \$67,900. UT does not yet have information on restrictions for use of this money at this time. He will coordinate with TCEQ to obtain the particulars.

Dr. Kost suggested the possibility of using this money to get Auto GCs for the sites that do not presently have them. It was also mentioned that we possibly save these funds to be added to any additional funds that become available to purchase an infrared (IR) camera like the TCEQ's. The IR camera and training would cost approximately \$140,000.

Dr. Allen reported that he was called by the CDC to inquire about data collected from the Corpus Christi Project network. They were impressed with the level of quality control of the data.

#### **VI. Adjourn**

The meeting was adjourned at 3:45 pm.

## **APPENDIX C**

**Financial Report of Expenditures  
Financial Report of Interest Earned**

**Corpus Christi Air Monitoring and Surveillance Camera Installation and Operation Project**

**Accounting Report for the Quarter  
04/01/08 - 06/30/08**

**A. Total Amount of COCP Funds and Other Funds Received Under This Proposal**

Total Grant Amount: \$6,761,718.02  
 Total Interest Earned: \$627,114.89  
 Total Funds Received: \$7,388,832.91

**B. Summary of Expenditures Paid by COCP Funds**

	Year 3 Budget	Year 4 Budget	Year 5 Adjustments	Yrs 1-5 Adjusted Budget	Prior Activity	Current Activity 04/01/08-06/30/08	Encumbrances	Remaining Balance 6/30/2008
Salaries-Prof	12	\$216,128.63	\$160,652.00	286,279.40	\$683,060.03	(\$514,002.43)	(\$76,360.55)	\$40,054.66
Salaries-CEER	15	\$19,606.37	\$15,636.00	33,123.00	\$68,365.37	(\$48,885.11)	(\$9,671.65)	\$3,231.43
Fringe	14	\$47,984.00	\$38,783.00	58,333.00	\$145,100.00	(\$112,325.12)	(\$17,916.54)	\$7,470.87
Other/C-Analysis	47/68	\$60,474.00	\$73,500.00	(8,656.40)	\$125,317.60	(\$30,310.00)	\$0.00	\$95,007.60
Supplies	50	\$86,844.00	\$33,500.00	68,676.00	\$189,020.00	(\$168,203.48)	(\$13,168.68)	\$6,196.32
	51		\$20,300.00	8,000.00	\$28,300.00	(\$15,170.00)	(\$270.00)	\$12,607.97
Subcontract	62-64	\$1,965,693.00	\$314,022.00	296,734.00	\$2,576,449.00	(\$2,304,813.31)	(\$62,574.52)	\$209,061.17
Travel	75	\$2,300.00	\$2,000.00	7,719.00	\$12,019.00	(\$8,603.76)	(\$3,228.41)	\$186.83
Equipment	80	\$0.00	\$0.00	0.00	\$0.00	\$0.00	\$0.00	\$0.00
Indirect Costs	90	\$359,855.00	\$98,759.00	112,531.00	\$571,145.00	(\$444,344.26)	(\$24,925.91)	\$101,874.83
<b>TOTALS</b>		<b>\$2,758,885.00</b>	<b>757,152.00</b>	<b>862,739.00</b>	<b>\$4,378,776.00</b>	<b>(\$3,646,657.47)</b>	<b>(\$208,116.26)</b>	<b>\$475,691.68</b>

**C. Interest Earned by COCP Funds as of 06/30/08**

Prior Interest Earned: \$600,075.87  
 Interest Earned This Quarter: \$27,039.02  
 Total Interest Earned to Date: \$627,114.89

**D. Balance of COCP Funds as of 06/30/08**

Total Grant Amount: \$6,761,718.02  
 Total Interest Earned: \$627,114.89  
 Current Q. Expenses: (\$208,116.26)  
 Total Expenditures: (\$3,646,657.47)  
 Remaining Balance: \$3,534,059.18 \*includes June '08 interest

I certify that the numbers are accurate  
 and reflect actual expenditures  
 for the quarter

  
 Accounting Certification