2nd INTERNATIONAL WORKSHOP ON REMOTE SENSING OF EMISSIONS–

NEW TECHNOLOGIES AND RECENT WORK

DATE:

April 1-3, 2008

LOCATION:

Auditorium, US EPA Campus, 109 T.W. Alexander Drive, Research Triangle Park, N.C. 27711

SPONSORS:

- **EPA's Office of Air Quality Planning and Standards**
- **EPA's Office of Solid Waste and Emergency Response**
- **EPA's Office of Research and Development**

PARTICIPANTS:

- **Canadian, European, Federal, State, and Local Environmental Agencies**
- **Industrial and Academic Scientists and Researchers**
- **Regulated Industries**
- **ORS Equipment Manufacturers and Vendors**

BACKGROUND

Recent years have shown great advances in the detection and measurement of fugitive VOC and other emissions using optical remote sensing devices (ORS). Regarding VOC, use of these new techniques in the U.S., Canada, and Europe shows a surprising quantity of hitherto unknown quantities of VOC being lost by the processing, distribution, and consumption of petroleum and petroleum byproducts. New field studies indicate that unexpected levels of fugitive losses (currently defined as "leaks" or "upsets") are routinely emitted from storage tanks, pumps, pipes, cooling towers, wastewater separators, and the like. These emissions are extremely important for two reasons: (1) they are end-products of the refining process, which means they are both volatile and toxic; and (2) they occur throughout the national energy network ranging from wellhead to refining to distribution to storage and retailing. These uncounted emissions could have a strong impact on environmental control strategies and emission inventories. Many of these losses are currently uncounted in the emission inventories and thus are lost for offsets and trading. This will be of significant importance to New Source Review programs.

Significant ORS advances occurred in the characterization of fugitive emissions from a variety of non-refinery sources such as landfills, animal feeding operations, and manufactured gas plants. A number of presentations on these non-refinery applications will be given at the Workshop.

PURPOSE

The purpose of the Workshop is to build and expand upon the science and dialogue begun in the October 2006 Workshop. (View Workshop Summary at http://www.epa.gov/ttn/chief/efpac/projects.html.) Discussions will: (1) summarize the recent IR camera, DIAL, and radial-plume mapping findings over the past year and relate them to estimation methods now in use; (2) review ongoing and imminent national and state studies as well as contract/grant resources/test sites potentially available for further studies; and (3) include a wide range of options available to government and industry in dealing with these fugitive losses (i.e., emission inventories, permitting, and compliance monitoring). We will also identify directions for future emissions characterization for the non-refinery sources.

Small group gatherings, panel sessions, and plenary meetings will help to narrow the focus on options that are likely to be most fruitful and cost-effective. A proposed blueprint or guideline for future ORS field studies will be one major outcome of the Workshop.

REGISTRATION

To register or to request Workshop details, contact Wade Peele, Workshop Coordinator, at peele.wade@epa.gov or at 919-541-4945. For further information, call Workshop Manager, John Bosch, at 919-541-5583. Seating is limited so attendees desiring to participate must preregister by March 1, 2008 at the latest to guarantee attendance. There is no registration charge.

Agenda

Tuesday, April 1, 2008

12:00 noon-1:00 p.m.

Welcome

- Round-Table Introductions
- Workshop Objectives and Rules

1:00 p.m.-2:45 p.m.

ORS Technical Sessions: Chair Dr. Ram Hashmonay, ARCADIS

- Summary of Previous DIAL Work in the Oil & Gas Industries, Ms. Jan Moncrieff and Mr. Tony Wootton, Spectrasyne Ltd., UK
- TCEQ Refinery Study in Texas City, TX Using DIAL, Mr. Russell Nettles, TCEQ, US, and Mr. Rod Robinson, NPL, UK
- Industrial Emission Measurements using Solar Occultation Flux and Mobile DOAS Methods, Dr. Johan Mellqvist, Chalmers University of Technology, Sweden
- American Petroleum Institute Perspectives

2:45 p.m.-3:00 p.m. – Break –

3:00 p.m.-5:00 p.m.

- Long-Term Application of OTM-10 Using DOAS in Industrial Settings, Dr. Eben Thoma, US EPA
- Long-Term, Continuous, Fence-line Monitoring of VOC in TX Using OTM-10, Dr. Robert Spellicy, IMACC, US
- International Applications of OTM-10 in Chemical and Petroleum Industries, Dr. Ram Hashmonay, ARCADIS, US
- Hazardous Liquids Airborne Lidar Observation Study (DOT-HALOS), Dr. Steven Stearns and Mr. Daniel Brake, ITT Corporation, US

5:00 p.m.-6:00 p.m.

Tour of EPA's National ORS Test Site And Equipment Exhibits, Dr. Eben Thoma

7:00 p.m.

Dinner at Selected Restaurant

Wednesday, April 2, 2008

8:15 a.m.-8:30 a.m.

Overview by Dan Powell, EPA's Office of Solid Waste and Emergency Response

8:30 a.m.-10:30 a.m.

ORS Technical Sessions (Continued)

- Quantum Cascade Lasers–Recent Advances and Future Directions, Dr. Gerard Wysocki, Princeton University, US
- Perimeter Air Monitoring during Manufactured Gas Plant Cleanups, Dr. Steve Takach, GTI
- Landfill Applications of ORS, Ms. Susan Thorneloe, US EPA
- ORS at Consolidated Animal Feeding Operations, Dr. Richard Grant, Purdue University, US, and Mr. Richard Shores, US EPA

10:30 a.m.-10:45 a.m. – Break –

10:45 a.m.-12:00 noon.

Panel-Mapping, Ranges, and Complementary Aspects of Different Open-Path Technologies

12:00 noon-1:00 p.m. – Lunch –

1:00 p.m.-2:00 p.m.

Panel- Standardization of ORS Field Test Practices (What? Why? How much?)

2:00 p.m.-3:00 p.m.

Panel- Future Applications and New Opportunities

3:00 p.m.-3:30 p.m. – Break –

3:30 p.m.-5:30 p.m.

Small Group Discussions

- Blueprint for future ORS Field Studies
- Solid Waste Applications
- Other Topics (to be decided at workshop)

5:30 p.m.-6:30 p.m.

Tour of EPA's National ORS Test Site and Equipment Exhibits

Thursday, April 3, 2008

8:30 a.m.-10:00 a.m.

Continuation of Small Group Discussions

10:00 a.m.-10:30 a.m. – Break –

10:30 a.m.-11:00 a.m.

Presentation of Small Group Findings and Recommendations

11:00 a.m.-11:15 a.m.

Future Information Exchange Opportunities (OSWER Websites and Web-Casting)

11:45 a.m.-12:00 noon.

Summary, Action Items, and Wrap-Up