Written Testimony
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Subcommittee on Investigations and Oversight
Committee on Science & Technology
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Sal Mier, Midlothian, Texas

We are on a treadmill to nowhere. Our community's human and animal health issues have been "festering" for a long time. Time and time again the Texas Department of State Health Services (TDSHS) tell citizens of Midlothian the Texas Commission on Environmental Quality (TCEQ) affirms toxic emissions from industries are too low to endanger public health – hence there is no point in looking at their health issues. **Pleas for help die at EPA, TDSHS and TCEQ doorsteps.**

In my 37-year public health career -- most of which was with the Centers of Disease Control (CDC) -- I never experienced such a reluctance or lack of will to determine sources of illnesses. There was never a quarrel about finding the source when you were dealing with a bacteria or a virus. But when the potential source involves an industry, dynamics change drastically. This is why I decided to look back towards my prior employer (CDC) for answers. Thus, we turned to ATSDR, the purported ultimate environmental public health agency, for help.

Instead of getting help promised by ATSDR in their mission statement, we found ourselves catapulted right back on to that treadmill and further from the truth.

ATSDR has demonstrated they either do not want the responsibilities inherent in their mission statement or they do not have the will and commitment to overcome external pressures and act independently to abide by the promises of this mission statement.

The Industries

Midlothian, Texas, has the largest concentration of cement manufacturing in the United States. The town and schools are nestled amid three cement manufacturers -- Dallas-based TXI's Midlothian cement plant, with five kilns, boasts to be the biggest in the U.S.**;** Ash Grove of Kansas, with three older wet kilns and Swiss company Holcim, with two kilns, are nearby. Limestone, cement's main component, is mined locally. Cement kiln dust is buried in local unlined quarries. These industries incinerate, among traditional fuels and other refuse, petroleum coke, whole and shredded tires, and hazardous waste – tons of hazardous waste -- in kilns never designed to burn hazardous waste.

Adjacent to TXI, Brazilian-owned Gerdau Ameristeel, one of the largest steel mills in North America, melts trainloads of scrap metal and crushed cars into new structural steel.

Daily, tons of toxic emissions pour out of ten cement kilns and two steel industry stacks.

In late 1980 TXI became one of the nation's largest hazardous-waste-combustion facilities accepting commercial hazardous waste. Cement kilns were authorized by EPA in a 1996 MACT rule to operate under <u>weaker</u>, <u>less protective</u> MACT standards for Hazardous Waste Combustors (HWC) compared to hazardous waste incinerators.

In a statement (attached) Dr. Neil Carman, Ph.D, comments:

> "Cement kilns burn up to 1,000 degrees hotter than incinerators and a concern is they may burn too hot for metals causing higher mass emissions due to greater metal volatility at higher temperatures. …Exposure to toxic metals is consistent with some health problems reported at Midlothian."

Contradictions in Data

In a report "Midlothian Industrial Plant Emission Data," Amanda Caldwell and Susan Waskey, two University of North Texas (UNT) graduate students added up all emission reports submitted to state and federal government by the three cement plants and adjacent steel mill in Midlothian. They spotlighted differences in reported volumes of air pollution when industry submits emissions reports to the State versus the Federal government. These students discovered:

> "A cursory examination of EPA air release data in Figure 56 (Total Air Releases per Firm 1990-2006) and TCEQ air release data in Figure 60 (Total Hazardous Air Pollutants per Firm 1990-2006), show strikingly different results. For this reporting period, the EPA data shows TXI to be the firm with the largest amount of toxic chemicals released to the air (5,287,384 lbs.), while the state's data show Holcim to be the largest emitter of hazardous air pollutants (1,507,663 lbs).
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> According to the plants' TRI [Toxic Release Inventory] reports, there were almost **48,000 pounds of lead** air pollution released by all four facilities over the entire 16 years, versus the over **90,000 pounds of lead** the same plants reported sending up their stacks to the TCEQ and its predecessors during the same period.
>
> According to the plant's TRI reports, there were approximately **5000 pounds of Mercury** air pollution released by all four facilities from 1990 to 2006 **versus** the approximately **10,000 pounds of Mercury** air pollution reported to the state over the same time."

EPA has recently acknowledged total mercury emissions from cement plants in the U.S. are twice as high as reported to the TRI. Based on the two UNT students report, TRI emissions appear not to match state records. Differences like these should give rise to questions.

Midlothian Schools

Approximately 7,000 students attend 9 schools situated in Midlothian.

USA Today in collaboration with the University of Massachusetts, the University of Maryland and Johns Hopkins University employed EPA Model, "Risk Screening Environmental Indicators," in an attempt to measure the extent of chemicals children were being exposed to while attending school. This model relied on EPA TRI data for calendar year 2005. In this analysis, <u>all schools rated in Midlothian</u> ranked in the <u>upper third percentile of the nation's most toxic schools</u>. Two ranked in the <u>first percentile</u> of the nation's most toxic schools, two ranked in the <u>third percentile</u>. Their findings **"**Toxic Air and America's Schools" were published in the *USA Today* December 2008.

Risk Assessments

In order to allay community anxiety caused by the burning of hazardous waste, in November 1995, the TNRCC (now TCEQ) prepared the *Screening Risk Analysis for the Texas Industries (TXI) Facility in Midlothian, Texas* and the *Critical Evaluation of the Potential Impact of Emissions From Midlothian Industries: A Summary Report.*

The American Lung Association contracted with Dr. Stuart Batterman, PhD, Environmental and Industrial Health, University of Michigan, to do an evaluation of this risk analysis. In Dr. Batterman's 70-page de novo analyses he warns:

> "…Based on risk assessment techniques, other environmental impact assessment methodologies, and an assessment of existing environmental monitoring data, we conclude that the environmental and health impacts have and are likely to occur in the Midlothian area from industrial activity, including the combustion of hazardous waste at TXI. **That TXI, the other cement kilns and steel smelter in Midlothian cause impacts is inescapable**." [emphasis mine]

Dr. Batterman further states:

> "…Some of the monitoring programs appear entirely reasonable….Others, however, are highly deficient with respect to study design, execution, data quality and data analysis. Overall, the monitoring program is not impressive given the scale of industry and waste combustion in Midlothian and the degree of public concern."
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> "…The serious deficiencies in the Screening Risk Analysis and Summary Report indicate that **the ability of the TNRCC to conduct an objective assessment is compromised**, and the record demonstrates significant concerns regarding the effectiveness of the TNRCC in regulating the combustion of hazardous waste at TXI."

Illness Surfacing

Beginning in the late 1980's and early 1990's, shortly after TXI started burning hazardous waste:

- Physicians began observing increases in office visits from patients complaining of upper respiratory problems.
- Ranchers started reporting breeding problems, aborted fetuses and deformed offspring in both horses and cattle.
- A Statistically Significant cluster of Down syndrome babies was identified in 1995.
- A peer-reviewed study of respiratory illnesses in Midlothian, conducted by University of Texas Medical Branch and authored by Dr. Marvin Legator in 1996, concluded a 35% higher incidence of respiratory problems in Midlothian than the control group.

- Based on a study completed in 2005, the prevalence of overall birth defects from 1999 through 2003 for Midlothian was 150% that of Texas and the prevalence of hypospadias/epispadias (congenital defects in which the urinary outlet opens above or below the penis or on the perineum) in Midlothian was 350% that of the State.

- Since1990 and continuing, Ms. Debra Markwardt, a local dog breeder experiences large numbers of illness in her animals that are related to immune system deficiency issues, aborted fetuses, failure to thrive, cancers and deformed offspring. Local veterinarians have attributed these problems to environmental factors. (*See addendum for her statement.*)

- In 1994 a group of mothers concerned for their children and the community pleaded with EPA that EPA at least do an animal health study. Poorly planned and based on a questionable methodology of execution, EPA initiated an animal health survey. Ultimately, the survey was abandoned and no conclusions drawn. The study did, however, identify an apparent high level of animal health problems in the study area in horses at one ranch. This rancher had seven to ten horses in any given year and reported between 50 – 88 % of the animals had reproductive health problems during the survey period. The majority of these horses had estrous/cyclic problems. One mare repeatedly had problems giving birth or keeping the foals after birth. This horse died shortly before the survey was conducted and a necropsy was performed. An inflamed ovary and a cyst on the ovary were discovered. There was also chronic enlargement of the lymph glands in the head, neck and under the throat. The mare exhibited a muscular line on the side of the abdomen indicative of labored breathing problems. (Note: Problems experienced by this rancher are similar to problems experienced by Ms. Markwardt and other livestock owners.)

ATSDR, TDSHS, TCEQ refuse to look at or even acknowledge the existence of any empirical evidence for fear a link may be related to industrial emissions and some responsibility may ensue. They instead take refuge in theoretical mathematical computations based on questionable air monitoring data.

Seeking Answers

For years, citizens turned to TDSHS for help. TCEQ eagerly and staunchly declared emissions from industries were safe and TDSHS used this as a refuge to look no further. **No answers came.**

Questions about a suspect air monitoring system and how air monitors not placed in predominant wind patterns could produce valid readings went unanswered. What about all the empirical evidence that was surfacing? No answers came. **Year after year this cycle kept repeating. The search for a scientifically validated response could not get off the treadmill.**

To many in the community, TCEQ's methodology for collecting air monitoring data appeared to be designed to avoid major emissions and to create an illusion of ambient air purity. Could this data's reliability to assess community impact and public health withstand the scrutiny of objective unbiased scientists? We thought we would find that objectivity when we turned to ATSDR.

ATSDR Involvement

In July 2005, our petition went before an ATSDR panel. The panel deemed it met the criteria for a public health assessment.

On August 10, 2005, we received a letter from ATSDR stating that "**they"** would be doing a Public Health **Assessment** as authorized under the CERCLA. ATSDR indicated that they planned "**to ask TDSHS for help"** responding to our concerns. This was disconcerting; however, ATSDR was a federal health-based agency with a mission statement that promised the use of the best science and to provide trusted health information—and they would be in control. "So, maybe," we thought, "there was hope."

Sadly, as the assessment started to slowly roll out, objectives began to morph into paths that dodged addressing critical issues such as the need for a scientific assessment of the monitoring data and an evaluation of the empirical evidence. Example:

1. Initially ATSDR promised to do a Public Health ***Assessment*** "to more fully characterize the emissions from multiple large industries in the area and evaluate potential health risks resulting from individual and aggregate chemical exposures."

2. Once the State became involved, things started to morph. The **"Public Health *Assessment*"** changed to something new**.** On Sep 12, 2005, we received a letter from ATSDR stating that because of **"*community health concerns"** they would be conducting instead a health **consultation.** They further implied that a health consultation would allow for a **"timely response (early 2006)."** In this letter ATSDR indicated that they were deferring the decision back to the State. ATSDR would review and certify it. In addition (**even though one major concern we expressed was the inadequacy of the State monitoring data for evaluating public health issues**) they stated they would rely on State monitoring data to make conclusions. **It was at this point I realized we were catapulted right back on to that treadmill going nowhere**.

   (***Note: I am still puzzled about what ATSDR meant by "community health concerns." The community was concerned that no one was looking at their health issues and asking the question, "Could something by awry with the monitoring data in which TDSHS and TCEQ take refuge to declare there were no public health issues?" Obviously the community's "health concerns" and ATSDR's health concern did not run a parallel path.)

   An ***assessment*** requires a closer examination of community health issues and may even entail some epidemiological activities; whereas, theoretically a ***consultation*** is done when time is of essence and a rapid decision is necessary. The value of a ***consultation*** from ATSDR's/TDSHS' perspective would be that if air-monitoring data did not support any adverse health effects, the job ends there. **All empirical evidence and epidemiological data can then be ignored.** All other red flags indicating health problems such as high birth defects, immune system deficiencies, animal issues, UTMB Study on Upper Respiratory illness, etc., can be dismissed as irrelevant. Since ATSDR/TDSHS were going to accept monitoring data at face value

and if this monitoring data is purported to reflect the cleanest air in Texas, the simplicity of the conclusions was promising.

3. To further simplify the task, the scope of the consultation narrows to looking at **air data only**.

4. Toxins in the air can be tricky -- entering a body in more ways than one. So to avoid any possible complications, the scope must now be further narrowed to the "**inhalation" pathway only.**

Empirical evidence and epidemiological data has been deemed non-relevant for this Consultation. It has been treated like an untouchable pariah. To include it would mean someone would have to address whether something is awry. This is a challenge that apparently ATSDR nor the State want to face.

I finally realized that regardless of what arguments are made or regardless of what empirical evidence is presented, the bottom line on this public health consultation was determined before it even began. The entire process would just be a matter of making documentation support the bottom line.

We needed input from objective unbiased reputable scientists. Shortly before the consultation was due to be released, I reached out begging for help. Six scientists responded and offered their time and skills to critique the draft consultation report.

A draft decision with an "Indeterminate Public Health Hazard" was finally posted for comments on December 11, 2007.

What The Scientists Said

The scientists who reviewed the draft were all highly critical of the product

Dr. Stuart Batterman, **Ph.D,** Professor of Environmental Health in the School of Public Health and Professor of Civil and Environmental Engineering at the College of Engineering, both at the University of Michigan, comments: ***"…This Health Consultation has so many omissions, inconsistencies, and inadequate, flawed, or misleading analyses and language that my best suggestion, given in advance of my comments, is that it should not be issued by ATSDR. …The Health Consultation is biased. It contains overarching statements that discount all indications that emissions from local industry and environmental conditions might or do pose a health concern in the community. The Health Consultation should be objective yet maintain the health-protective stance which is appropriate for health-based agencies like ATSDR. …The Health Consultation relies exclusively on air quality monitoring results measured at four monitors. It does not discuss, in any coherent way, the adequacy of the spatial and temporal coverage of this network. This includes, for example, the ability to***

identify hotspots, the appropriateness of the network, the adequacy of the monitored parameters, the quality of the data, and the need for additional monitoring sites. …There is little mention of meteorology. The area shows very persistent and directional winds, which means that monitors that are not directly downwind are likely to not show impacts from local sources. The Health Consultation should include appropriate wind roses and other analyses that indicate the likely impact areas vis-à-vis monitoring sites. …In its present form, however, I find so many biases and deficiencies that I do not believe that the Health Consultation achieves its aims and, as stated above, I would urge that ATSDR reconsider its issuance.

I do hope that ATSDR sponsorship and oversight provides a means to correct these problems…"

Dr. Peter L. deFur, Ph.D. and **Kyle Newman**, Environmental Stewardship Concepts, comment: "***…ATSDR's classification of this site as an "Indeterminate Public Health Hazard" is in direct contradiction with the data the Agency presents in the report. Throughout the document, ATSDR attempts to marginalize or disregard data that indicate that compounds produce human health risks. ATSDR has more than enough data to classify the site as a "Public Health Hazard. …The problems with this assessment are numerous, and the most serious problem with the interpretation is that ATSDR discounts their own metrics of health effects, ignoring the data that exceed health levels.***

For a number of chemicals, the air concentrations are in excess of the health levels, but ATSDR dismisses the excess toxic chemicals as not a problem because the number or people harmed is small, despite the fact that the risks exceed the levels used to protect people from environmental threats (i.e. 1 in a million)…"

Dr. Neil Carman, Ph.D, Program Director, Lone Star Chapter of Sierra Club and former employee of the Texas State environmental agency, comments: ***"I find the report highly inadequate for a variety of reasons*** [listed in full in comments] ***and fails to seriously acknowledge the numerous gaps in the ambient air monitoring in the Midlothian area. …A basic concern here is that asthma, allergies, immune system deficiencies,***

and other health problems in adults and children are not being evaluated and yet these kinds of adverse health effects are being reported by Midlothian residents…"

Dr. Dennis Cesarotti, **Ph.D,** Northern Illinois University, comments: ***"It appears that the DSHS (State Public Health) set out to prove that there were no health issues in Midlothian, Texas."***

Dr. Al Armendariz, **Ph.D,** Environmental Engineer, Southern Methodist University *comments:* ***"The report lacks an analysis of the impact of dioxin and furan emissions from local industry to the public health of the community…however, dioxin and furan emissions are an extremely significant component of the emissions from the local industry. … a significant fraction of the mercury emitted by the industrial sources in the area is likely to be emitted in gaseous form, given the volatile nature of mercury, and the temperatures of the stack gases. The gaseous mercury <u>will not</u> be collected in the particulate filters, leading to further underestimates of the true atmospheric concentrations of mercury. In addition, the gaseous mercury will not be detected by the techniques used to identify the VOC compounds***."

Debra L. Morris, Ph.D., Adjunct Assistant Professor in the Department of Preventive Medicine and Community at the University of Texas Medical Branch in Galveston, comments**:** ***"A symptom survey of residents in the geographical area that this document covers has been conducted and published (Legator et al, 1998). The results of this study showed that residents in this area had more respiratory symptoms than individuals in a control region. However, I am unaware that any attempt has been made to follow up on the results of the study using methodology that directly addresses and measures the health concerns of the community. Because the individuals in this area are exposed to a combination of chemicals, studies of health effects in this population would be much more revealing than an approach that makes mathematical approximations of the health risks based on measurements of individual chemicals."*** [Dr. Morris was a participant in this study.]

TCEQ Response

The Texas environmental agency (TCEQ) was highly critical of the "Indeterminate" finding. In comments to EPA, posted on their website TCEQ complains:

*"**POTENTIAL IMPACT ON TCEQ:** The Indeterminate Public Health Hazard finding regarding air toxics in Midlothian may lead citizens and elected officials to believe the air quality is causing health impacts when air toxics monitoring in the Midlothian area not only indicates acceptable air quality but also better air quality than most monitored areas of the country. This concern could lead to pressure on TCEQ to shift resources from areas of concern in order to expend more resources in the Midlothian area."*

As of this date (March 12, 2009), the public health consultation has not been finalized.

Due to this Administration's proposed strategy to rebuild the nation's infrastructure, the steel and cement industries are in a position to boom. In the last year, however, all local industries in Midlothian have severely cut back on production of concrete and steel. As of October 2008, TXI has temporarily, idled its four older wet kilns and has temporarily suspended burning hazardous waste. What is coming out of the industries now does not represent what the community has been exposed to or what they will be exposed to once production accelerates and once burning of hazardous waste resumes. **If you want a less than adequate picture of emissions to which the public has been exposed and to which they will be exposed -- now is the time to monitor.**

In an effort to get the "Indeterminate Public Health Hazard" lifted, TCEQ embarked on a $349,000 project purportedly to "answer some of the community's questions" and determine the percent of chromium-6 in the identified chromium emissions (a major unknown factor that lead to the indeterminate finding).

The first of 4 five-day monitoring periods scheduled over a year took place in December 2008 -- **right after TXI temporarily idled its 4 older wet kilns and temporarily suspended incineration of hazardous waste. "***TXI's status might affect the chromium's numbers depending on whether the older kilns are operating during any testing*,**"** TCEQ officials conceded to a reporter from the *Dallas Morning News.*

Any monitoring during the time hazardous waste is not being incinerated would skew more than just the chromium numbers. It would also not capture emissions with the highest levels of concern – those resulting from the incineration of hazardous waste. What information will this data provide? Perhaps it will provide a baseline for comparison when hazardous waste incineration is revived.

The fact that this data will not be representative of actual emissions to which the public was exposed, or will be exposed, appears not to be a material consideration in the scheduling of air monitoring. **How ATSDR/TDSHS plan to retrofit this data into the conclusions of the public health consultation remains questionable.**

When ATSDR was questioned about the reliability of any data collected during the idling of these kilns, during decline in production, and during the temporary suspension of hazardous waste incineration, the response was, **"**We have no control over changes in plant operations due to economic conditions. Couple this with the fact that state agencies often have a limited window within which funds made available for a project must be spent.**" Spending funds seemed more important than the quality of the data and**

evaluating public health impact to real exposures. What appears to be important **is that the money be spent now.**

ATSDR critically missed the boat at step one. They failed to validate the science behind the methodology used to determine the placement of the air monitors. If they could not validate the data at the initial step, of what value are any ensuing conclusions? **The deficiencies in this consultation indicate ATSDR's ability to conduct an objective assessment is compromised.**

We never asked anyone to find a problem if one did not exist. We just wanted an unbiased objective assessment. We expected an assessment incorporating the most recent science, logic, common sense and objectivity. We did not get this.

Instead of exercising due diligence by becoming an active participant in the evaluation, ATSDR relegated their responsibility without question back to the State. The assessment of Midlothian's public health ended up back in the hands of the same decision makers who over the years staunchly and flagarantly turned a deaf ear and blind eye to the empirical evidence handed them. **Science was not going to be factored in.**

It appears ATSDR divorced themselves from their mission statement. There was no value added to ATSDR's involvement. ATSDR's involvement only served to keep the public at bay for another 4 years. It was a costly waste of taxpayers' money. This involvement only elongated a process to nowhere and gave credence to impediments in the system that block science and truth.

If ATSDR does not have the **commitment or capacity** to objectively temper and counter external forces that dissuade them from their mission to serve the public by using the best science and providing trusted health information -- then ATSDR needs to get out of the Public Health Assessment and Consultation business. Maintaining the status quo will only continue risking the public health of many U.S. communities.

U.S. communities desperately need an external environmental public health entity able to carry out the mission assigned to ATSDR. Perhaps contracting with a University or a School of Public Health would be a better alternative. We need an entity that is proactive and not just merely an acquiescing observer.

Addendum

1. Statement, March 12, 2009, by ***Dr. Al Armendariz,*** **Ph.D,** Environmental Engineer, Southern Methodist University

2. Statement March 7, 2009, by Debra Markwardt, local dog breeder experiencing health problems in her animals.

3. Comments to *Health Consultation, Midlothian Area Air Quality Part I: Volatile Organic Compounds & Metals*, *December 11, 2007*, by Dr. Stuart Batterman, Ph.D Professor of Environmental Health in the School of Public Health and Professor of Civil and Environmental Engineering at the College of Engineering, both at the University of Michigan,

4. Comments to *Health Consultation, Midlothian Area Air Quality Part I: Volatile Organic Compounds & Metals, December* 11, 2007, by Dr. Peter L. deFur, Ph.D. and **Kyle Newman**, Environmental Stewardship Concepts,

5. Comments to *Health Consultation, Midlothian Area Air Quality Part I: Volatile Organic Compounds & Metals, December 11, 2007* by **Dr. Neil Carman, Ph.D,** Program Director, Lone Star Chapter of Sierra Club and former employee of the Texas State environmental agency

6. Comments to *Health Consultation, Midlothian Area Air Quality Part I: Volatile Organic Compounds & Metals, December 11, 2007* by Sal and Grace Mier, Midlothian, Texas

7. Statement dated Mar 12, 2009, by Dr. Neil J. Carman, Ph.D., regarding how MACT Rule and Enforcement Failures by EPA and State of Texas are Related to Health Hazards from Toxic Waste Incineration in Cement Kilns at Midlothian, Texas

8. Document Not Just Steam, A Review of "Emissions Data from Midlothian Industry" For the Texas Senate Natural Resources Committee, September, 2008 based on a report "Midlothian Industrial Plant Emission Data," Amanda Caldwell and Susan Waskey, two University of North Texas graduate students.

9. Executive Statement extracted from <u>Analysis of Screening Risk Analysis for the Texas Industries (TXI) Facility in Midlothian, Texas and the Critical Evaluation of the Potential Impact of Emissions From Midlothian Industries: A Summary Report</u>, dated May 1, 1996, written by Dr, Stuart A. Batterman, Ph.D, and Yuli Huang, M.S., Environmental and Industrial Health The University of Michigan