

Minutes

Seventeenth Meeting of the
Joint Advisory Committee for the Improvement of Air Quality in the
Cd. Juárez, Chihuahua / El Paso, Texas / Doña Ana County, New Mexico Air Basin
Museo de Arqueología, Int. Parque Chamizal
Cd. Juarez, Chihuahua
22 March, 2001

JAC Members Present:

For Mexico:

Adrian Fernandez - Co-Chair - National Institute of Ecology

Quim. Ma. del Pilar Leal Hernandez - PROFEPA

Dr. Enrique Suarez - FEMAP

Ing. Cesar Nuñez - Ecology Dept. - The State of Chihuahua

Biol. Alma Leticia Figueroa - Cd Juarez, Dept of Urban Development and Public Safety and Ecology

Quim. Adrian Vazquez - UACJ

For the U.S.:

Mr. Bill Luthans - Co-Chair - USEPA Region 6

Mr. George Avalos Director - Transportation Dept.

Mr. Archie Clouse - TNRCC

Dr. Carlos Rincon - Environmental Defense

Mr. Al Melero Alternate for Mr. Jesus Reynoso - EPCCHED

Elaine Barron, M.D. - An El Paso physician

Wen-Whai Li, Ph.D. - UT-El Paso

Mr. Bob Currey

Mr. Mark Rodriguez - El Paso Electric

1) Welcome and Introductions

Dr. Adrian Fernandez (AF) and Bill Luthans (BL) welcomed all to the 17th meeting of the JAC. AF commented that it is important to keep in mind all the accomplishments and projects under development by the JAC. This group should be proud of itself and hopefully in other parts of Mexico there are or will be groups with similar enthusiasm at the academic, industrial, and governmental level. The cooperation in Juarez is an example of how we can work together in a binational setting. BL indicated it was an honor to co-chair a meeting w/ AF and looked forward to a very good meeting.

2) Presentation and approval of current agenda

The agenda was approved without modifications.

3) Approval of minutes of the 4 October, 2000 JAC meeting

The minutes were approved without modifications.

4) Announcements

BL introduced Mark Rodriguez as the new member on the US side of the JAC.

Adrian Fernandez announced that Dr. Paramo is now working as director of Air Quality Programs for Mx DF. AF stated he's pleased w/ this and Dr. Paramo has an impeccable background. The JAC may be losing VHP, but MX City gains a vary good worker. VHP had the role of air quality Mgr. for the federation and now he takes theses to the city of MX. BL first congratulated VHP his new job. Last week at a meeting of Border 21 stakeholders meeting people mentioned they look at the JAC as a model of local cooperation for providing recommendations for solutions to our air quality problem. Clearly that view of the JAC's success couldn't be accomplished w/out the total support for the work of the JAC. BL presented to VHP a picture w/ the most number of JAC members assembled at the site of the Environmental Brick Kiln located in KM-20 in Cd. Juarez. Also to remind VHP of the air we all breathe Carlos Rincon presented to vhp a PM10 filter. CR also gave VHP a painting ov VHP painted by local artist Nacho Padilla. On behalf of the Municipio of Cd. Juarez Alma Leticia Figueroa ALF presented to

VHP a plaque recognizing him for the hard work he's done on behalf of Mexico. ALF also presented to Adrian Fernandez a plaque for the all the work he's provided in support of the JAC.

VHP commented that his is a very interesting job w/o too many issues to address, and this brought him closer to the problems we have in this region of his country.

BECC / NADBANK

Recent changes to the mandate which governs the Border Environmental Cooperation Commission (BECC) and North American Development Bank (NADBANK) allow for funding of air quality improvement initiatives. Donald Hobbs, General Counsel for the BECC presented the changes to the mandate of the BECC and NADBANK. BECC has 2 priorities: 1) provide technical assistance, 2) certify projects to be funded by the NADBANK or any other funding organization addressing water, wastewater, waste and other associated projects. This is the current mandate. What is addressed in the recent change in mandate? Approved 6 Dec by the BECC at Monterrey is the following: 1) BECC gives priority to projects addressing water, ww, waste, and 2) defines for the first time that there are other projects that will be defined as industrial hazardous waste as far as those projects impact water and wastewater as well as other infrastructure projects such as those related to air quality, public transit, and clean energy. BECC will be looking for pilot projects. Regarding air q. projects they received some proposals such as an expanded vehicle verification program addressing mobile sources and for Air quality monitoring equipment. The most complete proposal are the 26 JAC priority projects. What follows will be analyzing projects on both sides of the border and look for funds for these projects.

New representation from the State of New Mexico

Victor H. Valenzuela stated that Fabian Macias has obtained a job w/ the City of Albuquerque, and the State of NM will soon be announcing a new representative.

5) Consent Agenda Written Updates

Old Business

Several items were recommended during the previous JAC meeting.

- 1) Alma Figueroa asked that the used tire issue remain on the agenda to try to find a solution to this issue. ALF stated that the JAC used tire group has advanced thru the first phase of certification. It is working on its 2nd phase of certification, has equipment priced, and has some purchasers of the tire shreds.
- 2) An effort will be undertaken to place the air quality data ahead in the queue for validation purposes and presentation to the JAC. Still under development
- 3) A Technical Commission will meet to help Mexico obtain its air quality monitoring equipment. Efforts are underway to obtain beta gauges from TNRCC.
- 4) The Task Force has the ability to defend and advocate the work of the JAC, the Junta Municipal, and INE in their Juarez Air Quality Plan.
- 5) Chuy Reynoso will take the lead to work w/ the Clean Air Partnership to provide local forecasting for CO Action Days. The group met to discuss a CO action days program and determined that CO forecasting would not be done locally. The burn-noburn program would continue.
- 6) The Strategic Plan will be reviewed to check on progress of the 26 priority projects. CR stated he would like to mention this during the new initiatives.

Air Quality Report

-Air Quality report for Sept to Dec, 2000

The 4th trimester histogram indicated we had 2 CO exceedances December 24 & 25 at Club 20-30 in Juarez. ALF indicated that air quality is worsening in regards PM and CO. Ozone levels are dropping on the average in Juarez.

BL stated that EPA won a recent U.S. Supreme Court challenge to the new PM2.5 standard. We've done PM2.5 in EP for 18 months. The PM2.5 standard is $65\mu\text{g}/\text{m}^3$ for 24 hr average. You take the average of the 98 percentile readings to determine attainment. El Paso is well below the $65\mu\text{g}/\text{m}^3$ concentrations. Looking at annual averages its less than $10\mu\text{g}/\text{m}^3$ at all sites. We have a pretty extensive network currently in place in EP, but perhaps we may want to increase the number of PM2.5 monitors in Juarez.

AF asked what's the ratio between PM2.5 and PM10. Wen Whai Li replied that the typical ratio of PM2.5 to PM10 is .2 - .25 and appears independent of PM10 levels. Last 3 years have indicated no violations of the PM10 standard. El Paso must comply w/ the PM10 standard before it goes away then we must comply w/ PM2.5 standard.

Update of Cd. Juarez Monitoring stations.

Bob Gray reported that automation of data collection cd. Juarez CAMS is proceeding. Thru the EMPACT grant we'll be setting up Zeno dataloggers and Dasibi calibrators to connect to the TNRCC MediaStar system to provide near real time air quality data from Juarez. Communication will be provided via 2-way radios to transmit and receive data to between the TNRCC system. Total cost is \$@46K.

GT reported that personnel from CENICA and its contractors will soon install a nationwide air quality reporting system in 5 cities: MX D.F., Toluca, Guadalajara, Monterrey and Juarez. The contractor will integrate data into CENICA's database and post local air quality conditions on the web. AF presented to BL a publication prepared by INE that provides air quality data from the 5 above-mentioned cities. Included in the publication are tables and CD's where hourly data is presented.

Cd. Juarez 2000 Vehicle (Emissions) Verification (VV) Program

The Cd. Juarez Vehicle (Emissions) Verification Program is reaching its goal of having 50% of vehicles inspected by year's end. Luis Carlos Salmeron presented the Jz Vehicle Verification annual report.

For the year 2001 more vehicles are being tested. The program is designed to test domestic vehicles 1x/yr and commercial vehicles 2x/yr. There are 3 levels in the Jz VV program: Level 1, Level 2, Level 3 (which addresses electronic controls). Vehicle emissions testers are now being trained on more technical electronic equipment. From a program enforcement perspective, 1 center was closed and 2 closed voluntarily. Inspections included that the provider was certified. From a program recognition perspective: 12 businesses were recognized for participating in the VV program. Some businesses like Coca-Cola fund the vehicle inspection sticker of their employees. Jz testing stations have also updated their emissions testing machines which are not more intensive but more precise. The machines are connected by modem to report the results to a central receiving station to prevent fraud and abuse. Given the recent changes in this equipment there are bugs that occasionally need to be worked out. Jz is also implementing a gas cap replacement program funded by Clean Cities. A recent review of these programs by Veronica Carbajal indicated the levels of VOC evaporation increase w/ a defective cap.

ALF indicated that funds are being requested to install an emissions testing station at the international bridges to provide a 4-gas test static. The vehicle fleet of the city is the largest of all local fleets. They're getting more emissions testing sites and providing free testing thanks to funds available from ED. Archie Clouse congratulated Jz for the work they've done and the advances they've achieved. Cr congratulated the VV stations providers who were present at this meeting. LCS mentioned to AC a site in the TNRCC website that didn't support the level of work being accomplished in Juarez thru a comment made by a source not employed by the TNRCC. These comments don't help but hurt the level of work we've achieved. The trends we are achieving to have more vehicles tested, more stations available for testing vehicles and more community involvement, this helps the community come together to clean the air. He requested that particular page be retracted from the TNRCC website.

El Paso Seasonal Fuels Program

Al Melero presented the fuels report for the City of EP which is in nonattainment for CO and required to implement an oxyfuels program. The wintertime gasoline distributed in EP must be 2.7% (wt). Neither ethanol, nor MTBE are specifically mandated. Since 1990 the oxyfuels program has had a real impact on air quality in EP by reducing CO emissions. A very low number of violations were reported from refineries, dispensers, wholesalers. When TNRCC weakens on the penalties issued by EPCCHED, the number of violations rises. BC asked if the 10% drop in vehicle mileage due to the oxyfuels actually increases toxic emissions of other types. Data on MTBE as an oxygenate indicates you lose about 2% of fuel efficiency.

CR reported there is a technical commission working w/ SEMARNAT / INE to address Norm 086. It is important to see what can be done to require oxyfuels in Juarez. Currently 086 is under review to require and increase the concentration of oxygenate corresponding to the level of oxygenate that perhaps could be used year-round. What the oxyfuels Tech. Comm needs to do is request that the oxygenate of choice be ethanol. There is an effort in parts of Mexico to replace MTBE w/ ethanol since the MTBE infrastructure in Mx is already developed. Issues to address are transporting ethanol oxygenated gasoline to Mx via the US/MX pipeline. Incremental costs are not highly relevant in the long run given the recent run-up of gasoline prices which depend more on supply and demand for gasoline rather than the oxygenate itself. Matthew Witosky stated that a point made at the last JAC meeting was that testing done locally indicate there is some MTBE in Jz, but the air quality benefit may be limited. Chuy Reynoso's point is why add MTBE w/o a major air quality benefit?. The point may be that Chuy's issue addresses water quality concerns. This point interests AF since he agrees w/ us. If the level of oxygenate is so low that it doesn't improve air quality there may not be a need to oxygenate. A group is forming in Mexico City to consider the pros and cons of MTBE as an oxygenate.

ALF reported on the Fifth International Conference on Mobile Sources and Clean Air. In Jz there has been a high level of polemics addressing air pollution. Stappa/Alapco met as air quality administrators. Conclusions.

1) In the coming 20 years we will continue using the same type of fuels and derivatives; reformulated gasolines and oxygenates, and 2) we need to diminish the use of MTBE.

ASARCO Agreed Order Update

Lairy Johnson presented his report on the consent decree signed between ASARCO, TNRCC, and EPA. Background: Problems and fines arose from the operation in a Corpus Christy facility and those who received certain materials. Fines were issued across the board and across the country. The agreement that was considered was to put the fine dollars into the community as a Supplemental Environmental Program. (SEP). ASARCO agreed to a \$1.8M 5 yr. street paving project. To this point ASARCO (working w/ the City of El Paso) has paved 1.6 miles: Madeline between Robinson & Park street; Oklahoma Street, Marr Street and several other improvements. ASARCO works w/ TNRCC, EPA, and the City of EP and determines what streets get paved. This list is prioritized on an annual basis. One issue: UTEP gets \$50K/yr to fund road paving projects on campus. There was a dirt parking lot that UTEP that recently was acquired and received pressure from the City of EP to pave.

CR stated that Jz was asked to provide an estimate of the cost/sq.meter to pave roads in Jz as a preliminary effort on this project. The Juarez estimate was that 30KM of roadways could be paved with that amount of money. What we need to do is assess these types of projects in Juarez as we've been discussing on many occasions. BL added that we need to discuss how to obtain funds including develop the Clean Air Investment Fund. BECC also discussed using funds that may be leveraged to help provide NADBANK funding. SEP funds can be leverage for helping as seed funds for BECC certified grants. BC submitted quite vigorously that those funds would have funded more roadway improvements in Jz than the few roads that were paved in EP. SEPs are monies that are paid into a fund. If we can get more information on how the determination was made to fund these projects we could have influenced the decision making process. BC asked if there is a process for notifying the public in developing a SEP? Perhaps. When we negotiate a SEP, those people who decide need to consider the community input.

Pilar added that this issue has been discussed as to how ASARCO was going to handle this SEP. If we

check the minutes this item was sent to the enforcement workgroup and more than a year passed before EPA provided a comment on this issue. SEPs need to be considered and greater effort needs to be taken to give consideration to JAC and other participants in the enforcement process.

Matthew Witosky introduced Heather Dieffendorf who will be working w/ Greg Cook, EPA Reg. 6 Administrator, who will make a request to have EPA act on their guidance to develop economic incentive programs such as a Clean Air Investment Fund and how they should be structured. Now is the time to work on this type of project to develop a CAIF that looks like a bank and a broker. By the time of the next jac meeting we may have a first cut of what a CAIF looks like. CR commented that there's a technical commission working on economic incentives and perhaps we could work as a technical commission.

Paso del Norte Environmental Health Coalition

Dr. Enrique Suarez, representing the Paso del Norte Environmental Health Coalition, reported on a new initiative taking place in the PdN region which is one of the more marginal areas in the environmental health area. The purpose of the PDNEHC is to promote, seek, and optimize health resources available to persons living in economically depressed regions and prevent sickness and disease to reduce the costs associated with improving people's health.

Particulate Matter (PM) Mortality and Visibility Research

Jim Parks reported on Mortality Association of PM windstorms. His data indicate that there appears to be a increase of 0.8 deaths per 10ug/m³ increase of PM₁₀. Elaine Barron commented that mortality data managed by the county tends to be consistently erroneous therefore care should be taken in developing a statistical correlation in regards the causes of mortality within the community and impacts due to environmental conditions. Regarding Visibility Research Dr. Parks showed primary targets look at coefficient of variation of the pixels. On a hazy day all pixels have almost the same value and pixels have same range which is from 0-255 when a jpg file is converted to grayscale. The large building does not give a high contrast. On the soft pastel impressions. We have seen various trends in PM₁₀ concentrations. Looking at average of what every hr. looks like every year from 93-94 the peak drops and 95 the peaks smooth out. Everyone's criteria pollutant data indicate that these trends continue. Question that has been raised regards calibrations of this equipment used on the visibility side. Dr. Parks conducted functional component analysis that unravels patterns. Start taking the number of average deaths/day, average air pollution and average PM₁₀ levels. Conversely look at clean air day such as after rains events. Constant PM₁₀ levels everyday or invariant air related mortality are not found. Concentrations associated w/ blowing dust or sandstorms did not show a statistically significant association w/ mortality. Winds over 17mph are considered sandstorm events. During high inversion events on PM sampling days the filter is usually gray. On a mixed day the filter is green and on sandstorm days the filters are tan. Gray filter days developed when winds were less than 6mpg.

Enrique Paz from PAHO asked if morbidity data was considered in this since mortality data was considered to be inconsistent. Dr. Parks replied that there was no contemplation of morbidity data. Perhaps PAHO can share environmental data w/ him. The entire report is on the web at www.statlab.utep.edu/sampleproject. All data, missing data, all reference to all procedures used available in detail. Results indicate there is a 3-day lag between high PM events and mortality, and we're aware of aggravated pulmonary edema which we don't consider. EB would like to study on the amount of PM in relation to pollen and look at relationships and look at transportability of pollens on the PM filters. BC commented that what's special of Dr. Parks study is that he used 1-hr average and this gives more information of the diurnal variation of the PM.

EMPACT Grant Update

Bob Gray (BG) reported that UTEP received \$500K from EPA to split between UTEP, El Paso, and IMIP to provide real-time environmental conditions. Typically air pollution problems in EP are due to vehicles which creates regional challenges due to rapid industrialization, expanding population, low income levels, uncertain water supply, lack of infrastructure, lack of hazardous waste facilities, poor air quality. As we study air pollution on the JAC, the PdN should be considered as a place to invest in the work we're doing and assure the work we're doing is transferrable to other parts of the U.S. since the PdN is the largest international community. San Diego/Tijuana, has a large population but its separated by 45 miles.

Bring data to establish a functional database, increase people's knowledge of air pollution data to inform them of where they are being impacted and how to avoid exposure. We need to involve students at all levels (elem, HS, college) to increase their involvement and participation.

Chuck Kooshian (CK) presented the MPO perspective. We need to use real time data to the public in easily understandable formats to target behavioral changes. IMIP is installing cameras in Jz, MPO is connecting into the TxDOT cameras to report air quality near those sites. We'll soon develop transit data to offer updated data on the local public transit system. Perhaps they'll install a GPS on buses to know the exact location of the bus on the road.. We have the travel demand model to estimate traffic volumes. What we hope to do in the long term is take realtime data from TxDOT and put into model and have the model run dynamically to update itself.

BG added this project is giving us the dollars to purchase the tools we need to do the work we wish to do. The EMPACT project has allowed us to leverage dollars from the PDNHF to generate a PDN GIS in collaboration between the City and County of EP, and Dona Ana. We're trying to make this a binational tri-state project. We've hired a contractor from Canada to build a GIS database for Jz. UTEP has also caught the attention of the Digital Frontier, SEMARNAT, and Canada to develop a prototype for this project. They propose to bring data into a common format method of viewing and interpreting data.

Cd. Juarez Roadway Improvement Study

Salvador Gonzalez presented results of the Part 5 study. This is a collaborative effort between TNRCC, IMIP, Cd. Juarez, and UACJ. Some of the objectives of this study were to dedicate an effort to an area which is about 4KM² to determine vehicle entrained PM₁₀ emissions to update the Part5 software package developed by EPA. Conclusions will help to integrate or recommend improvements that could be made to those areas and the city in general. This region is a representative sample of the entire city of Jz. This was an intense project of vehicle counts and street information conducted by UACJ and Ecology dept. of Jz. We undertook studies of road dust using vacuum cleaners to obtain silt data in g/m². In summary we obtained certain values of silt in the various areas of the study area in g/m². These values were prepared to determine an average value of g(silt)/day/mile of roadway. The results gave g/day of PM₁₀ and 2.5 entrained into the air. Depending on vehicle class you obtained 80% of PM generated by certain sources with a result that 97% of entrained PM are fugitive emissions. Added to this are vehicle emissions, brake dust, and others. Part5 is a model that is developed for the U.S. A Mexican version of the Part 5 model doesn't exist to provide values for Mexican cities. These data may be preliminary and conservative.

3 control levels were recommended:

- 1) periodic sweeping of paved roadways;
- 2) stabilize riding surface of unpaved roads; and
- 3) combination of scenarios 1 & 2

Currently PM fugitive emissions generated by Part 5 indicate 7.75 tons of PM₁₀, and 2.223 tpy of PM_{2.5} given 45% of Jz roads are paved 55% of roadways are unpaved. So from a necessity perspective it appears better to pave than sweep roadways.

Recommendations:

- 1) Due to health risks involved from extended PM exposure and the detected influence of unpaved streets in PM emissions, it seems obvious that reducing the paving deficit should be assigned as a "Policy with the highest priority"
- 2) Consider it important to build housing subdivisions with street paving included in development. .
- 3) Along w/ the previous recommendations, further studies should be conducted to rearrange urban design of public low income housing developments to obtain optimal densities. And minimize roadway area such that pavement could be included w/o increasing the project construction costs per capita.

BC stated that our 2 nations need to assure that substantive improvements require massive investments in funds to preclude health problems due to exposure to an incomplete infrastructure. In Nogales the #1 health problem is exposure to PM. We need to quit doing pilot projects and get real funds invested into

this community. EB asked what formula works for our community because perhaps it would help w/ the use of the PM10 hivols if we can corroborate the data obtained by the Part 5 model w/ data reported by PM 10 hivols. AC added that in determining the value of improvements, curbing and guttering need to be considered since these are important to determine if improvements work.

It was asked what is the composition of the PM10 & PM2.5. It depends on the location of the sampler. We have a paper presented in Queteraro that indicates that about 80% of material is of crustal origin with very little organic or carbonaceous materials.

Strategic Plan Development

Carlos Rincon stated that he's been speaking w/ the JAC Co-Chairs and this was an opportune time for the JAC to review the Stratplan as a living document containing lots of information, data and reports. Health studies are currently taking place by the Env. Health Workgroup, Wen-Whai LI's PM report, the Part 5 study, Health and Mortality Research, etc.. Given all that is available we can review which projects we can check off and provide an update on other projects. Added to this is an opportunity to apply a methodology by a group in Mx DF that is chaired by Mario Molina from MIT and his colleagues from Harvard regarding a study recently completed for Mexico City. This group is interested in the activities of this region. They've had 4 meetings already in MX DF where the expert group can add itself to the work of the JAC and in turn the JAC will benefit from the contribution from the group from MIT and Harvard.

The JAC strategic plan group will join w/ the group of experts headed by Mario Molina to work on strategic plan projects and prepare something for President Fox and perhaps President Bush. Pilar asked that we meet as a Strategic Plan TC to update the Plan and conduct a review of these projects to see what we've achieved and what we should consider.

Legislative Proposals

In October, 2000 a meeting of the JAC Legislative Committee met w/ El Paso Senator Eliot Shapleigh to suggest recommendations for the 77th Session of the Texas State Legislature. AC reported that three important Bills have been submitted by the Senator as a result of this meeting.

- 1) SB749 allows the TNRCC to work in Mexico as authorized by Mexico's officials;
- 2) SB905 calls for studies of brickkilns along the Texas / Mexico Border;
- 3) SB1561 is huge and allows US industries in Texas to reduce emissions in Mexico and received an Emissions Reduction Credits for the facility located in Texas.

Also AC showed slides indicating no violations have been reported by any ambient monitoring sites in El Paso during the past 4 years. You need to have 2 exceedances at 1 station to have a violation. TNRCC is starting to consider discussions into requesting redesignation of certain pollutants for which El Paso is in nonattainment. EP could be redesignated as a "maintenance area". There's a lot of stuff in place in place Mark Rodriguez from EPElectric is interested in these issues especially in regards Mexico's sovereignty.

AF stated that Mexico doesn't have a major precedent in working on these opportunities. He's totally open to many proposals where in the past there were misunderstandings. When these projects consolidate themselves we're excited about how they work out and new proposals that can be worked out.

Public Comment

Salvador Gonzalez commented on a meeting that IMIP had w/ NADBANK in San Antonio, with NADBANK. Seeks support for this project. He was asked to develop his proposal before the JAC.

EB brought up a problem they're having working w/ becc and nadbank are the environmental reviews that need to be undertaken. Those er's are problematic because each reviewing agency has its own format and information that is required by each agency. Costs may be too large and slow interest in developing projects.

Pilar: one of the issues that need to be considered are the tools that we use and study to determine if environmental quality is improving. Aside of the proposals made by IMIP to include prevention

BL considered the amount of information that was discussed at this meeting brought up many different topics and issues. He's heard some encouraging things of bringing resources such as bringing the TNRCC to allow investment in Mexico as well as the CAIF.

EB stated that the on 31 Jan CAAAC met to propose nominees for the Environmental Excellence Awards EB recommended that the CAAAC nominate the JAC for this award.

AGREEMENTS

1) AF asked that during the next meeting a report on North American Transportation Corridors be presented.

2) Adrian Vazquez asked that any data on fuel oxygenates be forwarded to him.

3) It was requested by BL that the Strategic Plan be brought up to date to see if there are things we've completed and things that need to be elevated.

Establishment of date for next meeting

Next meeting.: June 21 in New Mexico