State of Utah
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Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

UTAH AIR QUALITY BOARD MEETING
February 2, 2022 – 1:30 p.m.
195 North 1950 West, Room 1015
Salt Lake City, Utah 84116
FINAL MINUTES

I. Call-to-Order

Randal Martin called the meeting to order at 1:30 p.m.

Board members present: Randal Martin, Erin Mendenhall, Michelle Bujdoso (attended electronically), Kevin Cromar (attended electronically), Cassady Kristensen (attended electronically), John Rasband (attended electronically), Arnold Reitze (attended electronically), Kimberly Shelley (attended electronically)

Executive Secretary: Bryce Bird

II. Date of the Next Air Quality Board Meeting: March 2, 2022

III. Approval of the Minutes for December 1, 2021, Board Meeting.

- Arnold Reitze motioned to approve the December 1, 2021, minutes. Erin Mendenhall seconded. The Board approved unanimously.

IV. Propose for Final Adoption: Repeal of R307-301. Utah and Weber Counties: Oxygenated Gasoline Program as a Contingency Measure. Presented by Bo Wood.

Bo Wood, Rules Coordinator at DAQ, stated that R307-301 established a contingency measure in the carbon monoxide state implementation plan. If triggered, it would have required gasoline sold in Utah and Weber counties during the winter months to be oxygenated with ethanol to a blend with 2.7%. In December 2021, division staff proposed the repeal of R307-301 and the Board approved a 30-day public comment period. The public comment period was held from December 15, 2021, to January 15, 2022. No comments were received and no public hearing was requested. Staff recommends that the Board approve the repeal of R307-301.

Ms. Mendenhall asked if the current 10% oxygenation blend is regulated, or is that simply a cap of the formula that the industry has taken. Staff responded that the current 10% ethanol in fuel is a Congressional mandate.

- Erin Mendenhall motioned that the Board approved the repeal of R307-301. Michelle Bujdoso seconded. The Board approved unanimously.

V. Informational Items.

A. Linkages between Air Quality and the Shrinking Great Salt Lake. Presented by Dr. Kevin Perry, University of Utah.

Dr. Kevin Perry, Associate Professor at the University of Utah, made a presentation about the linkages between the air quality and the shrinking Great Salt Lake (GSL), focusing mainly on potential air quality issues. Dr. Perry's presentation covered three items of potential air quality impacts which included: exposed playa is a known source of PM_{10} and $PM_{2.5}$, exposed playa is also a potential source of hazardous air pollutants (HAPs), and exposed playa is hypothesized to increase ozone production due to increased actinic flux.

Part of the presentation described results from the GSL study which was conducted from 2016 to 2018 and jointly funded by the Utah Division of Natural Resources and the Utah Division of Facilities, Construction, and Management as part of the construction for the new prison. For the first impact regarding PM_{10} and $PM_{2.5}$, Dr. Perry described the field work used to identify GSL dust source regions such as hot spots in several quadrants. It is important to protect the fragile surface crust on the GSL lake bed because once you destroy that crust then you have a much larger area of the surface that can act as a dust source. Another goal of the study was to estimate how fluctuating lake levels might impact future dust production from the GSL. And finally, to determine if PM_{10} dust from the GSL contains heavy metals which might pose a threat to human health.

Exposed playa can be a potential source of HAPs. Dr. Perry's focus was on heavy metal which was part of the GSL project where they did measurements to determine if the GSL sediment contained significant quantities of heavy metals. They used regional screening levels to determine potential risk for the adjacent populations. He noted that arsenic in essentially every measurement exceeded the regional screening levels for both residential and industrial exposures, but added that arsenic is fairly uniformly distributed over the entire lake bed. This indicates to Dr. Perry that it has a natural origin and that the rocks of Utah are just higher in arsenic and that the sediments that end up in the GSL are a result of that natural phenomenon. Other elements had potential concern as well. The GSL dust poses both acute and chronic health risks from the PM_{10}, the $PM_{2.5}$, and the heavy metals, and all residents of northern Utah are likely to be exposed from these various dust source regions on the GSL.

Dr. Perry concluded with a brief explanation of the hypothesis of how the exposed playa can also increase ozone production due to an increased actinic flux where ultraviolet radiation passes through the precursor gases of NO_x and VOCs to produce ozone in the atmosphere using the different underlying surfaces between a water covered lake and a playa covered lake. Finally, failure to address the future of the GSL could threaten the hard-earned air quality improvements from PM_{10}, $PM_{2.5}$, and ozone resulting in costly federally-mandated mitigation.

Mr. Martin asked about the size distribution to particle, what fraction of the $PM_{2.5}$ compared to PM_{10}? Dr. Perry responded that the PM_{10} to $PM_{2.5}$ fraction is one of the unknowns. He attempted to look at the size distribution but because of the soluble nature of the evaporite minerals, as soon as you do a traditional particle size distribution in any kind of aqueous environment it changes the particle size distribution.

Mr. Martin asked if he compared any data from the field or from the DAQ sites, when a dust event occurred? Dr. Perry responded that no, he has not done that systematically yet, but that is something they will be following up on.

When asked if GSL study has been published, Dr. Perry responded that all of the work is available in a final report that was submitted to the Utah Division of Natural Resources. The data itself has not been published yet and it is currently going through the peer review process.

Ms. Mendenhall asked if we should be looking into the possible impacts of these dust events on our local monitors, and therefore our residents? For example, with the presence of arsenic. Dr. Perry explained that part of the issue is that with the monitoring schedule, when there is a dust event, there is a 2/3 likelihood that we will miss it in terms of the chemical composition data. They have the data available going backwards in time. Also, it's not just the GSL, there are several other playa surfaces in the Intermountain West that contribute. Part of the problem is teasing out the contribution from the West Desert versus the GSL. All of these are potential dust sources that are typically mixed by the time they end up at the receptor site.

B. University of Utah Energy Assessments. Presented by Dr. Kerry Kelly, University of Utah.

Dr. Kerry Kelly, Associate Professor at the University of Utah, introduced that the StepWise Program has a goal to adopt cost-effective strategies that also have an air quality benefit. They are also focusing on area sources that are not on the radar screen of the DAQ. The program aligns with state priorities as part of the Utah Road Map by identifying energy efficiency strategies as a way to reduce air quality emissions and as a way to be cost-effective and promote competitiveness.

Moriah Henning, StepWise Program Engineer, explained that the team members of the program will go out and do assessments to identify high impact natural gas efficiency projects. They use a team of professionals to perform these evaluations while also providing opportunities for students in the program to get involved and develop their engineering skills. Through the program they serve manufacturers, municipalities, commercial building owners, and they are starting work with some school districts as well. The overall goal is to find and serve customers who may have prior natural gas usage but don't have the resources or in-house expertise to find energy projects themselves.

Alexis Jenson, employee of the StepWise Program and the Intermountain Industrial Assessment Center (IIAC), explained that the StepWise and the IIAC programs employ undergraduate PhD students where they receive real engineering experience, on-the-job training, and in-class instruction on steam, electricity, energy, management, etc. Ms. Jenson then gave a brief explanation of the assessment process which included the prework, a plant visit, the analysis and reporting, and follow-up.

Dr. Kelly explained how they estimated the potential emission savings by developing a range of emission estimates for electricity and using AP-42 emission factors for natural gas. Since the start of the program in March 2021, they have complete 16 assessments in the modeled nonattainment regions. The energy savings for all 16 assessments identified potential savings of $2.9 million in utility bill savings. On average the savings identified will reduce about 15% of each facilities natural gas usage. And 80 projects identified in the 16 assessments have an average 6-year simple payback period for each project.

Ms. Mendenhall commented that some of the capital costs associated with any of the suggested improvements can be prohibitive, and asks if there are any grants or low interest loan programs such as CPACE that could help with those costs? Ms. Henning replied that the program is hoping to expand in the future and to use additional funding through Dominion and Step legislation to provide financial assistance to customers.

Mr. Martin asked what mechanism did the program propose to get the big NO_x reduction from all of clients? Ms. Henning responded that she is not sure specifically what contributed to the NO_x reductions but that the reductions came from a variety of processes that were assessed over the various client projects.

Mr. Martin asked if they have a sense from the potential clients and customers about their buy-in to go to these different strategies? Ms. Henning answered that historically the IIAC programs have a 50% implementation rate. Since the StepWise program is in its first year they do not have the numbers yet for the specific assessments at this time.

C. Air Toxics. Presented by Leonard Wright.

D. Compliance. Presented by Harold Burge and Rik Ombach.

E. Monitoring. Presented by Bo Call.

Bo Call, Air Monitoring Section Manager at DAQ, gave a brief update on the monitoring charts and noted that the preliminary data show that we are not meeting the ozone standard in most places that are monitored in 2021.

Ms. Bujdoso asked if Mr. Call could explain again the potential impacts of going back into nonattainment. Mr. Call listed some preliminary ozone numbers at various monitoring sites and stated that he is not sure how those will impact current activities with regard to what course EPA may take. For particulate, even though the past year had a lot of higher numbers throughout the network, our 3-year running average on the 98th percentile number pretty much shows us in attainment in most every place. Mr. Call then explained how staff analyzes data sets at the multiple samplers to determine which data set is going to be the primary data set and which is going to be the co-located data. There is also some concern about the annual standard which is at about 12. Our highest location right now is 11 on an annual number and the lowest is down in the 6's. This becomes important because EPA is considering lowering that standard.

Ms. Bujdoso asked if DAQ has three years of data for the near-road monitor? Mr. Call responded that DAQ does. This three year average is not completed because an additional monitor was added during the year and a few more filters still need to be added into the system.

Ms. Bujduso asked if Mr. Call knew what is contributing to high ozone in the areas without a lot of population or mobile sources? Mr. Call explained that the guidance that the DAQ goes by is that ozone monitors are to be sited downwind of the sources by a fair distance. This is so that any pollution that is emitted has time to get up into the atmosphere and be acted upon photochemically by the sun and cause ozone formation. So it's not uncommon to see the high ozone in remote places because they could be miles downwind of some source. Along the Wasatch Front where we have the most monitors the prevailing winds can push the ozone cloud to different places. In addition, some studies have shown there can be ozone transport coming from other places. And also, in the mountainous West we generally tend to have a much higher background than a lot of other places around the country.

F. Other Items to be Brought Before the Board.

Mr. Bird announced that Governor Cox recommended Commissioner Greg Todd from Duchesne County to fill the vacancy on the Board. After a 30-day public comment period, Commissioner Todd's recommendation has been forwarded to the State Senate for final approval.

G. Board Meeting Follow-up Items.

Meeting adjourned at 2:37 p.m.

Minutes approved: April 6, 2022