

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF ACME BRICK
COMPANY- OUACHITA PLANT

) DOCKET NO. 09-014-P
) ORDER NO. 5

RECOMMENDED DECISION

Appearances: Mr. Charles R. Nestrud, for Acme Brick Company and Ms. Valerie L. Hays for Arkansas Department of Environmental Quality.

1. INTRODUCTION

On October 2, 2009, the Arkansas Department of Environmental Quality ("ADEQ") issued Air Permit No. 1343-AR-3 to Acme Brick Company ("Acme"). On October 19, 2009, Acme filed a Request for Adjudicatory Hearing and Commission Review appealing ADEQ's decision. Acme appeals the numeric emission limits for lead, chromium and arsenic imposed by ADEQ.

2. JURISDICTION

The Arkansas Pollution Control and Ecology Commission ("Commission") has jurisdiction over this matter pursuant to Arkansas Code Annotated § 8-1-203(b)(4), which authorizes an appeal to the Commission of a permitting decision.

3. STANDARD OF PROOF

The standard of proof in administrative proceedings is the preponderance of evidence standard. *Johnson v. Arkansas Board of Examiners in Psychology*, 305 Ark. 451, 455, 808 S.W.2d 766 (1991).

4. FINDINGS OF FACT

1. Acme owns and operates brick manufacturing facilities nationwide and six of its plants are in Arkansas. One of the six in Arkansas is the Ouachita Plant, located at 1615 Grigsby Ford Road in Malvern, Arkansas. It is a natural gas-fired clay brick manufacturing facility that has been in operation since 1980.

2. Section 112 of the Clean Air Act ("CAA") required EPA to develop a list of source categories and subcategories that emit, or have the potential to emit hazardous air pollutants ("HAPs"). In addition, some sources must meet Maximum Achievable Control Technology ("MACT") for controlling HAP emissions. On May 16, 2003, EPA developed MACT standards for brick and structural clay products manufacturing ("Brick MACT") and those standards became effective on May 16, 2006.

3. The Brick MACT required Acme to install control technology capable of reducing emissions of hydrogen chloride and hydrogen fluoride to levels established in the Brick MACT. Since Acme was deemed a major source it had to meet the MACT standard. It therefore installed a dry lime fabric filter air pollution abatement device or scrubber to meet MACT. On December 13, 2006, Acme received a Title V permit since it was deemed a major source, which permitted hydrogen fluoride and hydrogen chloride. There were no other HAPs in the permit in December 2006.

4. On March 13, 2007, the D.C. Circuit vacated the Brick MACT. See, *Sierra Club v. EPA*, 479 F.3d 875 (D.C.Cir. 2007). Acme knew, based on stack testing, that the Ouachita plant was a synthetic minor source and it applied to ADEQ for a minor source permit.

5. On June 12, 2008, Acme submitted its application for a minor source permit to ADEQ. The source number is SN-06, which is a tunnel kiln scrubber exhaust, the final exit point of emissions from the tunnel kiln.

6. On October 2, 2009, ADEQ issued Air Permit No. 1343-AR-3 to Acme. The permit imposes emission rates on three metal hazardous air pollutants ("HAPs"), which are lead, chromium, and arsenic.

7. On October 19, 2009, Acme sought Commission review of ADEQ's decision to impose emission rates on the three metal HAPs.

8. On March 15 and 16, 2010, the administrative hearing officer ("AHO") conducted a hearing on the issues raised by Acme.

5. DISCUSSION AND CONCLUSIONS OF LAW

A. Issue

Acme asserts that ADEQ erred by including in the permit emission rates for lead, chromium, and arsenic because those rates are not based on generally accepted scientific knowledge and engineering practices. It contends that if these emissions are even present, they are present in such insignificant quantities that there is no potential for them to cause air pollution. The emission rates are not required in order to prevent, control or abate air pollution and they provide no environmental benefit by being in the permit. Based on the evidence, the Commission should delete the emission rates set out in the permit for lead, chromium, and arsenic.

ADEQ argues it is charged with preventing pollution, not just controlling pollution that is already occurring. ADEQ has a duty to protect the public health and environment and the emission rates for lead, chromium, and arsenic accomplish that goal.

B. Statute and Regulation No. 18

It is necessary to understand what an applicant is required to do to show that its sources will not cause air pollution.

"Air pollution" means the presence in the outdoor atmosphere of one (1) or more air contaminants in quantities, of characteristics, and of a duration that are materially injurious or can be reasonably expected to become materially injurious to human, plant, or

animal life or to property, or that unreasonably interfere with enjoyment of life or use of property throughout the state or throughout the area of the state as shall be affected thereby. *Arkansas Code Annotated* § 8-4-303(5).

An air contaminant is defined as follows:

"Air contaminant" means any solid, liquid, gas, or vapor or any combination thereof. *Arkansas Code Annotated* § 8-4-303(2).

The AHO finds that lead, chromium, and arsenic are air contaminants that may constitute air pollution. Regulation No. 18, Arkansas Air Pollution Control Code, provides that ADEQ may not issue a permit until the owner/operator demonstrates to the reasonable satisfaction of ADEQ that the source will operate without violating the regulation and without causing air pollution. *Reg.18.302*. Applicants are required to provide ADEQ with information regarding the nature and amounts of air pollutants that will be emitted by the stationary source. *Reg.18.304(A)(1)*. Following the review of the application, ADEQ may request additional information from the applicant and it will set a reasonable deadline for a response. *Reg.18.304(B)*. Finally, ADEQ is to issue a draft permit that contains conditions designed to prevent, control, or abate air pollution. *Reg.18.305(B)*.

C. Enforceable permit limit

Mr. Jason Pence is environmental health and safety manager for Acme. *T. 32, 1. 5-6*. He testified that Acme objects to having an enforceable permit limit for lead, chromium, and arsenic. First, Acme does not have data or information to suggest that these HAPs are present in their emissions. If present, the data suggests they are emitted in such trivial

quantities that they do not present a risk to the environment or public health.

A second reason is that once a permit limit is established, there is a perception by the public that a company emits a particular pollutant. This is not a perception that Acme wants to convey to the public. It also does not want the expense of proving these pollutants are not there every time ADEQ comes up a new list of pollutants that it wants to put into a permit. T. 74, l. 4-21.

Third, if emission rates are included in a permit they cannot be ignored because they are enforceable through Acme's production limits. The production limit is what Acme uses to demonstrate compliance with its emissions. As long as Acme does not exceed its production limit, which is the amount of brick it manufactures on an hourly basis, it will not exceed its emission rates. T. 104, l. 1-19.

Fourth, if the emission rates are included in the permit, Acme will eventually have to do stack testing because that is a requirement that comes up. T. 107, l. 13-21.

Fifth, Acme will become subject to the toxic release inventory report that is required when one of these HAPs is emitted. T. 74, l. 22 - T. 75, l. 4.

Sixth, if Acme were to be out of compliance with a metal HAP, ADEQ could take enforcement action against it and assess it a penalty.

D. AP-42

Ms. Susan Miller is employed by Brick Industry Association, which is a national trade association for the brick industry. T. 128, l. 20-24. She testified that AP-42 is a compilation of ten or more years old test data that EPA collected when it went out and tested facilities in a number of industries. EPA

developed emission factors and then rated them. Each industry listed in AP-42 has its own chapter. T. 131, l. 24 - T. 132, l. 20. AP-42 for brick manufacturing facilities lists 30 HAPs that were documented as emissions from these facilities. *Joint Exhibit 5, Table 4-3.* She testified that the AP-42 emission factors are not to be used for setting site specific emission limits. In addition, EPA has not recommended the emission limits because they represent an average group of data. T. 134, l. 12 - T. 135, l. 12.

The quality of the emission factors for the brick industry was rated based on an analysis of the test data obtained by EPA. The ratings range from A = Excellent to E = Poor. An E rating means the factor was developed from very few facilities and there may be a reason to suspect the facilities that were tested do not represent a random sample of the industry. A rating of D may be suspect because an emission factor that is developed from A-, B-, C- rated test data may not represent a random sample of the industry. *Joint Exhibit 5 at page 3-3.*

E. Relative toxicity ratings

Mr. Mike Porta is the assistant chief of the air division and he helped develop a list of Relative Toxicity Ratings for HAPs swapping and as a de minimis level for reporting in a permit application. T. 231, l. 22 - T. 232, l. 11; *Joint Exhibit 3, Appendix B.* The relative toxicity ratings list was developed to enable an applicant to know whether or not it had to report an emission factor to ADEQ in its permit application. If there was a valid emission factor, it had to be reported.

ADEQ discovered that in 1994 EPA published a proposed rule for use in its Section 112(g) program under the Clear Air Act that listed a de minimis level for all HAPs. *Joint Exhibit 7 and 13; T. 233, l. 15-20; T. 154, l. 24 - T. 155, l. 1.* EPA

proposed rules that would apply to modifications of existing major source facilities. *Acme Exhibit 12*. EPA's de minimis table established emission increases associated with a modification at a major source that was insignificant. *T. 155, l. 5-25*. Its de minimis table identified the de minimis levels for all HAPs. *T. 157, l. 6-8*. The proposed rule was controversial and EPA dropped its proposal to regulate modifications under Section 112(g). *T. 178, l. 16-18; T. 176, l. 24; T. 179, l. 8-20.; T. 240, l. 12-19*. EPA has never finalized the de minimis table and no de minimis relative toxicity table was included in EPA's final rule. *T. 161, l. 12-17; Acme Exhibit 13*.

Mr. Porta testified that ADEQ wanted a level where below the level an applicant did not need to report the HAP and above the level it had to report the HAP. The EPA document had all the compounds listed and had toxicological data. Although EPA did not adopt the de minimus table, ADEQ did. *T. 233, l. 11-20; T. 235, l. 5-17; Joint Exhibit 3, Appendix B*.

F. ADEQ's application review

Mr. Parviz Mokhtari is a permit engineer and he reviewed Acme's minor source permit application. He also prepared a draft permit and the final permit for the Ouachita plant. *T. 315 l. 12; T. 316, l. 17-19; ADEQ Exhibit 2; Joint Exhibit 1*. The only HAPs reported by Acme in its application were hydrogen chloride and hydrogen fluoride. *ADEQ Exhibit 2, HAPs Emission Rate Table*. Based on the amount of raw materials used in the process and the large amount of natural gas used for firing the clay, Mokhtari believed there should be some metal HAPs reported on the Emission Rate Table form. *T. 319, l. 1-25*. He referred to AP-42 for brick manufacturing operations to make sure that all the information Acme submitted was correct. *T. 325, l. 8-*

22. He concluded that Acme had not reported all the other HAPs that are in AP-42 and he asked the company to provide him with more information. After ADEQ determines an application is complete it may request additional information from the applicant and set a reasonable deadline for receiving a response. Reg.18.304(B). Mokhtari asked Acme to take the AP-42 emission calculations and generate emission estimates for the 30 HAPs shown in AP-42. T. 54, l. 16-23.

The minor source permit instructions show what HAPs should be included in a permit application. Joint Exhibit 3. Applicants are to estimate what their hourly emission rate is for all HAPs and compare the emission rate to a number on the relative toxicity ratings chart. If the emission rate exceeds the relative toxicity rating, then it is to be included in the application and reported to ADEQ. T. 56, l. 24 - T. 57, l. 6. The relative toxicity rating is used as a de minimis level for reporting in the permit application. Joint Exhibit 3, Appendix B. The relative toxicity ratings chart does not inform an applicant that the de minimis level for reporting is going to be used as a permit limit. T. 59, l. 18-24. The relative toxicity rating for each chemical contains only a number but no unit of measurement. T. 60, l. 8-17.

Acme had stack test data for certain pollutants and it developed an emission factor to show how many pounds of pollutant were emitted on an hourly basis. T. 49, l. 22 - T. 50, l. 4. The cost of testing is on a pollutant-by-pollutant basis. The cost of testing for hydrogen fluoride and hydrogen chloride was approximately \$30,000. For other pollutants, the cost ranges from \$10,000 to \$100,000. T. 52. l. 8 - T. 53, l. 3. Mokhtari testified that a plant is not required to identify every compound that might be in a plant's emission profile. T.

369, l. 13 - T. 370, l. 3. The AHO finds no regulation requiring an applicant to undertake expensive stack testing to quantify the emission of HAPs.

Acme was concerned about reporting estimates of arsenic, chromium, and lead to ADEQ because Acme believed ADEQ would include those limits in the permit as enforceable emission rates for the tunnel kiln and scrubber. T. 61, l. 2-8. Acme told Mokhtari that it had no data to suggest those pollutants were present in its emissions at the Ouachita Plant and it had no information about what was being emitted from SN-06. Acme also believed the estimates were at de minimis levels. T. 55, l. 10-22; T. 61, l. 18-22; T. 325, l. 23 - T. 326, l. 9.

Mr. Mokhtari accepted Acme's response and so he calculated the metal HAP emission limits for the Ouachita plant. He found that ten out of the 30 HAPs were reportable based on the relative toxicity ratings chart. T. 327, l. 10 - T. 328, l. 4. Mokhtari determined that of the 30 HAPs listed in AP-42 for brick manufacturing facilities, only lead, chromium, arsenic, benzene, 2-methylnaphthalene, chlorine, beryllium, selenium, cadmium, and nickel were potentially being emitted in quantities exceeding the minimum permitting level on the relative toxicity ratings chart. T. 326, l. 11-17; Joint Exhibit 4. He asked Acme to respond to his calculations to see if it agreed or disagreed with them. Acme again responded that it did not have any knowledge that it was emitting those HAPs. T. 327, l. 8-23. Mokhtari was directed by his supervisor to draft the permit and include his calculations of emission limits for the ten metal HAPs in Acme's draft permit. T. 329, l. 11-16.

During the public comment period on the draft permit, Acme submitted comments regarding the inapplicability of the AP-42 emission factors for lead, chromium, arsenic, benzene, 2-

methylnaphthalene, chlorine, beryllium, selenium cadmium, and nickel. Acme stated that it did not accept AP-42 factors as credible because the Ouachita plant was different than the facilities he used to develop the factors. T. 81, l. 5 - T. 82, l. 6; T. 333, l. 7-14. The AP-42 factors were developed based on three types of kilns, natural gas, sawdust, and coal. The final emission factors are averages and Acme believed that the factors that came from sawdust-fired kilns or coal-fired kilns were not representative of its Ouachita plant which is a natural gas plant. In addition, Acme claimed some of the emission factors had a rating of "E" and those factors should not be used because of poor quality. T. 333, l. 19 - T. 334, l. 3. The emission factor rating for lead, chromium, and arsenic was "D." T. 334, l. 8-13. The quality of an emission factor is based on the test data obtained by EPA and the factors have been rated from "A = Excellent" to "E = Poor."

Based on Acme's comments, Mokhtari reevaluated the ten pollutants to see if some of them should be excluded. He removed the ones that had an "E" rating and those that came from coal-fired or sawdust-fired facilities. T. 334, l. 21 - T. 335, l. 3. As a result, he removed from the final permit the emission rates for benzene, 2-methylnaphthalene, chlorine, beryllium, selenium cadmium, and nickel. *Joint Exhibit 1.* However, the emission rates for lead, chromium, and arsenic remained in the permit. T. 335, l. 6-7; *Joint Exhibit 1.*

G. Permit condition to be based on "generally accepted scientific knowledge and engineering practices"

Acme argues the lead, chromium, and arsenic emission rates are not based on "generally accepted scientific knowledge and engineering practices."

In the case of any discharge limit, emission limit, environmental standard, analytical method, or monitoring requirements, the record of the proposed action and the response shall include a written explanation of the rationale for the proposal, demonstrating that any technical requirements or standards are based upon generally accepted scientific knowledge and engineering practices. *Arkansas Code Annotated* § 8-4-203(e) (2) (B) (i).

Mr. Mokhtari used the AP-42 emission factors in Table 4-3 of the Brick and Structural Clay Product Manufacturing Final Report. *Joint Exhibit 5 at page 4-47.* Mokhtari looked for natural gas-fired kiln data in AP-42 because Acme objected to the use of data from sawdust-fired and coal-fired kilns. He relied only on data from the Merry Oaks plant in North Carolina to develop his emission factor for lead, chromium, and arsenic. *T. 353, l. 6 - T. 354, l. 21.* The emission factor rating for lead, chromium, and arsenic received a "D" rating. *Joint Exhibit 8, Table 11.3-7 at page 11.3-17.*

The emission factor data in AP-42 for lead, chromium, and arsenic was based on three to four plants in the United States. These plants are designated as Reference 1, 2, 4, and 22. *Joint Exhibit 5 at page 4-47.* Mokhtari deleted Reference 1 from his evaluation of arsenic because he did not like it since arsenic was not detected in all three test runs at the facility. It was below the detection level and not reliable. *T. 360, l. 9 - T. 361, l. 24; Joint Exhibit 5 at 4-34.*

For lead, Mokhtari did not use the average of the four plants, but used only the Reference 22 emission factor. That one number was higher than the average of all four plants, which resulted in an emission factor ten times lower than the average. *T. 362, l. 2-23.*

The AHO finds that the use of AP-42 data when averaged for the four plants on which EPA obtained data on lead, chromium, and arsenic emission has only a "D" rating. This rating means the average data is "Below Average." *Joint Exhibit 5 at 4-34.* The fact that Mokhtari deleted all the averages in favor of just the North Carolina plant data means reliance on that data should be considered as "E" = Poor. The AHO is not convinced that data from one facility represents a random sample of the industry. The AHO concludes an emission factor based on data from one plant is not reliable and it should not be used.

H. Rounding

Mr. Mokhtari calculated the emission rate for lead, chromium, and arsenic and then "rounded" each number to add a safety factor. He rounded the emission rate to the nearest 0.01 pound per hour and this became the emission rate set out in Acme's permit for lead, chromium, and arsenic. *Joint Exhibit 1, Total Allowable Emissions at page 8.* For example, he estimated the emission of chromium at 0.000356 pounds per hour and then rounded the emission rate to 0.01 pounds per hour. *Joint Exhibit 1, Response to Comments at page 6 of 8; Total Allowable Emissions at page 8.* Mokhtari used .01 because that is the way the department does it. He presented no evidence that his number was based on any evaluation or whether or not an emission above or below that number would constitute air pollution. *T. 363, l. 10 - T. 364, l. 21.* He admitted that rounding was not used for every permit issued by ADEQ. *T. 368, l. 3-19.* The AHO finds no scientific basis for rounding the emission rate calculated by Mokhtari.

I. Air dispersion modeling

Mr. Porta testified that not every molecule that comes out of a stack has to be reported in an air permit application and

there is some level that is so trivial or de minimis that it does not need to be reported. T. 251, l. 5-13. EPA does not use the de minimis table for any regulatory purpose. T. 254, l. 20-22. However, ADEQ is using the relative toxicity ratings chart as a de minimis table because there is no other place where all the information is in the same spot. The information in relative toxicity ratings chart is suitable for screening purposes and it has worked well for the last 10 to 15 years and there is no reason to change it. T. 255, l. 5-16. Porta testified that ADEQ's job is to prevent pollution so people will not get sick rather than waiting until it finds someone is being harmed by a level of pollution. T. 268, l. 15-25. ADEQ wants to prevent a problem so it looks at the characteristics and the amount and it tries to set permit limits that will be protective of the public health.

Mr. Shannon Lynn is employed as a senior project manager by ECCI, a consulting firm. T. 189, l. 15-21. He modeled the three pollutants to determine their compliance with Arkansas non-criteria pollutant control strategy requirements. T. 191, l. 2-8. Air dispersion modeling calculates what the maximum off-site impact is for each pollutant specified in the model for each averaging period that is requested. He compared the concentration of what is coming out of the stack to some level to see if it is going to be a problem. T. 194, l. 10-21.

Lead is a pollutant that is subject to the National Ambient Air Quality Standards ("NAAQS"), because it has a three-month averaging period. T. 197, l. 18-22. The NAAQS are established by the Federal government and these exposure levels are determined to be safe for the prevention of environmental harm to human and animal life. T. 198, l. 3-6. Lynn modeled three cases. The first was using the relative toxicity rating value

for lead, the second was the level of lead estimated by ADEQ, and the third was the emission rate set out in the permit. For each case, the result was .001 micrograms per cubic meter or less. He compared those numbers to the NAAQS lead standard of .15 and found that the numbers in each of the three cases was about 150 times less than the safe level EPA established in the NAAQS. T. 201, l. 9-23; Acme Exhibit 14 at page 1.

The Arkansas state standard is the threshold limit value ("TVL"). T. 193, l. 22-25. Lynn modeled the arsenic and chromium relative toxicity ratings, the amounts estimated by ADEQ, and the permit emission rates, and then compared the results from the model to the TLV standard. T. 193, l. 22-25. The TLV standard is .1 micrograms per cubic meter. His modeling results showed both arsenic and chromium were much less than the TVL standard. T. 202, l. 12 - T. 205, l. 16; Acme Exhibit 14 at pages 2 and 3. ADEQ did not dispute his findings.

The AHO finds that the modeling results for each pollutant is below the NAAQS for lead and below the TVL for arsenic and chromium.

Dr. Thomas Dydek is a consulting toxicologist. T. 212, l. 6-10. He relied on the results of Lynn's air dispersion modeling for his opinion. T. 216, l. 1-11. It was his opinion that if Acme emitted lead at the relative toxicity rate or at the ADEQ's estimate of lead emission or at the permit limit, the predicted impact was 150 times lower than the level known to be safe for the protection of human health and the environment. "So these impact numbers are so trivial and insignificant, that there's no way it could rise to the level of being injurious to the public health or welfare." T. 217, l. 18 - T. 218, l. 9. His opinion for arsenic and chromium was the same as for lead.

The predicted impacts are so low as to be trivial and would not constitute air pollution. T. 221, l. 22 - T. 222, l. 2.

The AHO finds that any lead, chromium, or arsenic emissions from the Ouachita plant, if they are present at all, are present in insignificant quantities. The evidence does not support imposing a lead, chromium, or arsenic emission rate in Acme's permit because there is no scientific evidence demonstrating that these contaminants will be injurious to human health or the environment.

J. Stipulations

On May 19, 2010, ADEQ and Acme filed the following stipulations that require the permit to be modified as follows:

"1. Page 6 first full sentence, ADEQ will delete "being added in this application" from the permit.

2. Specific Condition 2 (page 11), ADEQ will delete the references to 2-methylnaphthalene, benzene, chlorine, cadmium, nickel, selenium and beryllium from the permit."

IT IS THEREFORE ORDERED:

1. Permit No. 1343-AR-3 is affirmed, except as follows:

a. ADEQ is directed to delete the lead, chromium, and arsenic emission rates set out in Specific Conditions 1 and 2 of the permit;

b. ADEQ will delete in the first full sentence on Page 6 of the permit the following: "being added in this application;"

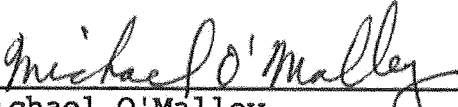
c. and ADEQ will delete the references to 2-methylnaphthalene, benzene, chlorine, cadmium, nickel, selenium and beryllium from Specific Condition 2 on Page 11 in the permit.

2. This docket is closed.

RECOMMENDATION

It is the recommendation of the administrative hearing officer that the Arkansas Pollution Control and Ecology Commission adopt and affirm, without modification, the findings of fact and conclusions of law set out in the above Recommended Decision.

This 25th day of June 2010.



Michael O'Malley
Administrative Hearing Officer

CERTIFICATE OF SERVICE

I, Patricia Goff, Commission Secretary, hereby certify that a copy of the foregoing Order No. 5, In the Matter of Acme Brick Company-Ouachita Plant; Docket No. 09-014-P has been mailed by certified mail or by first class mail, postage prepaid to the following parties of record, this 25th day of June 2010.

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