

Before the  
Land Reclamation Commission  
State of Missouri

LARRY STOCKMAN, VICKY STOCKMAN, )  
MICHAEL ATKISSON, JACQUELINE )  
ATKISSON, ANDREW ZAWISLAK, JUDY )  
TAYLOR, DONALD BAKER, MARLENE )  
ZAWISLAK, JOHN M. ZAWISLAK, )  
ROBERT ZAWISLAK and LAKE )  
OZARK/OSAGE BEACH JOINT SEWER )  
BOARD, )

No. 11-0903 LRC

Petitioners, )

vs. )

DEPARTMENT OF NATURAL RESOURCES )  
LAND RECLAMATION PROGRAM, )

Respondent, )

MAGRUDER LIMESTONE CO., INC., )

Applicant. )

**RECOMMENDED DECISION**

The Administrative Hearing Commission (“AHC”), as the hearing officer for the Missouri Land Reclamation Commission (“LRC”), recommends that the LRC grant Magruder Limestone Co., Inc.’s (“Magruder”) application for a permit expansion, subject to certain conditions.

**Procedure**

On May 10, 2011, the AHC entered into a memorandum of understanding (“MOU”) with the Department of Natural Resources (“DNR”) providing that the AHC would act as hearing

officer in the above referenced case. On May 19, 2011, the AHC sent notice to the parties that the case had been assigned Case No. 11-0903 LRC.

We held a hearing on October 23, 24, 25, 26, and 30, 2012. Attorneys Steven E. Mauer and Melody L. Rayl represented the Lake Ozark/Osage Beach Joint Sewer Board (“the Sewer Board”). Assistant Attorney General Timothy P. Duggan represented DNR. Attorneys Jay Dobbs and Adam Troutwine represented Magruder. Michael Atkisson, Robert Zawislak, and John M. Zawislak appeared and represented themselves.<sup>1</sup> The matter became ready for recommended decision on January 28, 2013, the date the last written argument was filed.

### **Findings of Fact**

#### History of This Case

1. On April 17, 2007, Magruder filed an application (“the application”) to expand LRC Permit 0086 (“the permit”) to operate a quarry on a 205-acre mine plan in Miller County, Missouri (“the proposed quarry site”). The operating period requested is 100 years.

2. LRC staff deemed the application complete on May 21, 2007. Magruder then published notice of its intent to operate a surface mine, as required by § 493.050.<sup>2</sup>

3. The Sewer Board and a group of individuals (“Petitioners”) requested a public meeting. Magruder declined to hold a public meeting, as permitted by 10 CSR 40-10.080(1)(A).<sup>3</sup>

4. On July 16, 2007, the LRC’s director, Larry Coen, recommended approval of the application because he deemed it complete.

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<sup>1</sup> Several other individual petitioners attended the hearing, but did not testify or present evidence.

<sup>2</sup> Statutory references are to the RSMo Supp. 2012 unless otherwise indicated. Except as noted herein, the relevant statutes have not changed since 2007.

<sup>3</sup> All references to the CSR are to the Missouri Code of State Regulations as current with amendments included in the Missouri Register through the most recent update. The current regulations are identical to those in force in 2007-08.

5. Coen's recommendation was presented at the LRC's September 27, 2007 meeting. Magruder, the Sewer Board, and a number of individuals made presentations at the meeting. The LRC granted standing to 31 individual petitioners<sup>4</sup> and the Sewer Board to proceed to a formal public hearing as authorized by 10 CSR 40-10.080(2).

6. The LRC appointed a hearing officer, who presided over a hearing ("the 2008 hearing") over seven days in March, April, May and June of 2008.

7. On July 13, 2008, the hearing officer issued a recommended decision granting the application subject to five permit conditions.

8. At a meeting on July 24, 2008, the LRC adopted the recommended decision, but modified two of the five permit conditions. The LRC issued a final decision on that date.

9. Petitioners appealed to the Circuit Court of Miller County. The Circuit Court reversed the LRC's decision. The LRC appealed to the Western District Court of Appeals. On August 31, 2010, the Court of Appeals also reversed the LRC's decision and remanded the case to the LRC for a new hearing.<sup>5</sup>

#### Parties to this Case

10. Magruder is the applicant in this case. Magruder is headquartered in Troy, Missouri. It has been in the business of operating quarries since the 1960's. Magruder currently operates eight quarries in Missouri. All but one are operated under the permit. Magruder is owned in part by Mark Magruder.

11. Magruder holds a leasehold interest in the proposed quarry site property. The fee interest in the property is owned by Eolia Development Company ("Eolia"). Mark Magruder owns Eolia. The lease is dated July 29, 2008. The term of the lease is 100 years.

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<sup>4</sup> On February 9, 2008, several unrepresented petitioners were dismissed from the case for failing to follow the orders issued by the hearing officer.

<sup>5</sup> *Lake Ozark/Osage Beach Joint Sewer Board v. Mo. Dept. of Natural Resources*, 326 S.W.3d 38 (Mo. App., W.D. 2010 (application for transfer denied December 21, 2010)).

12. At the 2008 hearing, certain individuals were represented by counsel. In the hearing on remand, the individual petitioners were unrepresented. By order dated July 25, 2011, we ordered any party who wanted to remain a petitioner to provide the AHC with a notice of intent to remain a party and whether they would be represented by counsel. We also ordered any party who did not want to remain a party to file a dismissal. The individual petitioners remaining in the case at the time of this decision are: Robert Zawislak, John M. Zawislak, Marlene Zawislak, Donald Baker, Judy Taylor, Andrew Zawislak, Mike Atkisson, Jacqueline Atkisson, Vicky Stockman, and Larry Stockman.

13. The Sewer Board is an entity comprised of representatives from the cities of Lake Ozark and Osage Beach, Missouri. It owns and operates, through a contractor, a sewage treatment plant (“the plant”) on property adjacent to the proposed quarry site. A system of sewer pipes that run from various locations in the two cities feed into the plant (together, “the sewer system”).

14. DNR is the respondent in this case. It is neutral on the issue of whether the permit should be granted.

#### Blasting

15. Blasting is commonly used at quarries to dislodge rock. Holes are drilled into the ground, and explosives are loaded into the holes. The strength of the blast depends on a number of factors, including the size of the hole and the amount of explosives used.

16. In Missouri, the effect of blasting on above-ground or “uncontrolled” structures is regulated by the Missouri Blasting Safety Act, §§ 319.300 to 319.345, enacted in 2007. The Blasting Safety Act does not regulate the effect of blasting on underground structures.

17. Buried structures such as pipelines move with the surrounding ground in response to blasting vibrations. Thus, they are more resilient to blasting vibrations than are above-ground

structures. In blasting terminology, underground structures are “restrained” or “restricted” because they are confined on all sides. Blasting near buried pipelines is a common occurrence.

18. Blasting vibrations travel through the ground and cause particles to oscillate. Each inch per second of vibration causes particles to oscillate  $\frac{4}{1000}$  of an inch,<sup>6</sup> or about the thickness of a piece of copy paper. Therefore, a blast vibration of five inches per second would cause ground particles to oscillate a distance approximately equal to the thickness of five sheets of copy paper.

19. “Block movement” occurs in the area of such close proximity to a blast that the ground is permanently displaced. The area where the blast permanently displaces the ground and any buried structure is known as the “blast zone,” “rupture radius,” “crater zone,” or “block movement zone.”

20. Experts in the field of blasting consider studies conducted by the United States Bureau of Mines to be authoritative. Report of Investigations 9523 (“RI 9523”) is one such study.

21. RI 9523 is a study of five buried pressurized pipelines, four made of welded steel ranging from six to twenty inches in diameter, and one made of eight-inch PVC pipe, buried in clay-soil over shale. The pipelines were monitored for vibration, strain, and internal pressure over a six-month period while blasting occurred at closer and closer distances to them. No pressurization failure occurred at vibration levels of over 20 inches per second. However, the study recommends a vibration level limit of 4.92 inches per second for buried pipelines.

22. The authors of RI 9523 concluded that the primary threat to buried pipelines from blasting is “permanent ground displacement” in the block movement zone, which means that the

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<sup>6</sup> Worsey testimony, 5/24/08, at 171-72. Transcript references are to the 2012 transcript unless noted, as here, with the date.

ground or rock permanently shifts rather than oscillating and returning to its original position. Within the block movement zone, rock may fracture and be propelled into the pipeline at a high velocity. No permanent ground displacement was seen at a distance of 44 times the diameter of the hole into which the explosives are loaded.

23. Another Bureau of Mines study, RI 8507, contains a recommended blasting vibration limit of 2.0 inches per second for above-ground structures. The Missouri Blasting Safety Act has incorporated this recommendation as the vibration limit for above-ground structures. Because the plant is an above-ground structure, Magruder must comply with this limitation for the plant.

24. Humans are very sensitive to blasting vibrations. They are aware of them, and often annoyed by them, at levels far lower than the levels that cause damage to above-ground structures.

#### Potential Effects of the Quarry on Petitioners

##### The Atkissons

25. From 1990 to 2000, Mike Atkisson was the materials division manager of APAC, another quarry in the lake area. He attended the “Rolla School of Mines,”<sup>7</sup> and was certified in blasting. He was certified to oversee blasting operations, but he never performed the blasting.

26. In his work with blasting, Atkisson observed problems such as keeping dust within the property boundaries, noise, odor, and vibration. Atkisson observed unintended results from blasting such as holes in roofs, rocks flying over 600 feet, and equipment damage. He was responsible for receiving complaints about the blasting process, and he felt there were some legitimate complaints about the blasting operations.

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<sup>7</sup> We assume this was the informal name for the Missouri University of Science and Technology at the time Atkisson attended.

27. In 2005, Atkisson started developing an upscale subdivision on Highway D (“the Subdivision”). The Subdivision property is approximately 320 acres.

28. Atkisson began developing the Subdivision knowing that there was another quarry, the Hudson Hollow Quarry, located nearby. There has never been any mining of limestone rock at this quarry.

29. Development of these homes is a source of income for Atkisson and his wife.

30. The Subdivision is located adjacent to the Magruder site. The mine plan comes within 50 feet of the Subdivision property. The mine operations would be between 500 to 700 feet from the actual construction of homes. Magruder’s blast plan indicates that it would start blasting about a mile from the Subdivision.

31. In 2008, in the Subdivision, Atkisson had some homes occupied, some completed, and some under construction. The homes are priced at approximately half a million dollars.

32. Atkisson has not sold property in the Subdivision since 2008. He believes this may be in part due to Magruder’s plan to operate the quarry. However, there have been two resales in the Subdivision, one in 2011 and one in 2012.

33. Blasting in such close proximity has the potential to increase the noise, dust, vibration levels, and fumes in the Subdivision.

34. Dust migrating from the quarry to the homes could have health implications for the residents. Fumes could result from explosive powder if it failed to detonate.

35. The homes in the Subdivision are not connected to the sewer system. Each owner has a septic facility.

36. The Atkissons own another business, a gift and home accessory shop in Osage Beach. The shop is served by the sewer system.

37. If the Osage Beach sewer system was not operational for a significant period of time, the Atkissons' shop would be out of business until the sewer system could be repaired.

#### The Stockmans

38. In 2008, Vicky Stockman and her husband owned and operated Riverview RV Park, LLC ("Riverview").<sup>8</sup> This was their sole source of income.

39. Riverview is a 15-acre campground that accommodates recreation units ranging from tents to million-dollar recreational vehicles ("RVs"). Riverview has 75 sites; all are occupied on weekends during the peak season of Memorial Day through Labor Day. Each year, Riverview is closed from November 15 to March 1.

40. Riverview is approximately a mile from the proposed Magruder site. It is advertised as a "quiet, peaceful place."<sup>9</sup>

41. Riverview advertises only in trade directories, such as the Travel Life Directory. The Travel Life Directory rates RV parks, and one of the categories in its rating system is "environmental quality." Subcategories that are considered in the rating system are "noise" and "park setting." The Travel Life Directory also publishes consumer complaints against RV parks.

42. Before purchasing Riverview, Stockman investigated the APAC quarry that was already in existence near the property. She was told that it was being shut down in a few years, and this impacted her decision to buy the Riverview property. While the APAC quarry was operating, she had complaints about it from her guests.

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<sup>8</sup> At the time of the 2012 hearing, the Stockmans were leasing Riverview to a local developer and were in negotiations to sell it. It is unclear whether they continue to own Riverview at the time of this decision.

<sup>9</sup> Vicky Stockman,, 3/28/08, at 103.

43. Stockman believes the APAC quarry impacted the rating that Riverview received. After the APAC quarry shut down, Riverview's ratings improved, and the income received at Riverview increased.

44. In 2008, Riverview had a high rating of "8 ½" in Travel Life. Stockman is concerned that the Magruder quarry would reduce Riverview's rating, and travelers would choose other RV parks.

45. There are approximately ten to twelve other RV parks in the Lake Ozark area. None of these is in close proximity to a quarry.

46. Riverview is serviced by the sewer system. If the sewer system was not operational for a significant period of time, Riverview would be shut down and any guests would be asked to leave until it could be repaired. This would affect not only those guests but future guests as well because RV parks depend on referrals from satisfied customers.

47. Riverview is below the level of the sewage treatment plant, and problems with the sewer system could result in raw sewage flowing onto the Riverview property.

48. When leaving Riverview, the RVs travel uphill to reach the point of intersection with Highway 54. Some of the RVs are more than 60 feet long with a fifth wheel. Some are pulling trailers and vehicles.

49. The larger RVs must travel very slowly. The quarry vehicles would be traveling downhill and coming around a curve at the entrance to Riverview.

50. In addition to blasting noise, Stockman is concerned that warning sirens prior to blasting could add to the noise level at the RV park.

## Robert Zawislak

51. Robert Charles Zawislak lives approximately 200 yards from the Magruder property. In 2008, he had one child, age 11, living at his home. His home is located on a gravel road.

52. Zawislak is self-employed as a carpenter and plumber (usually as a subcontractor), and has a “side job” building and refinishing furniture. In the last ten years, he has made from \$9,000 to \$18,000 a year in his side job.

53. Zawislak’s basement is a wood shop containing routers, planers, table saws, and other hand tools. He stains wood in the basement, but applies lacquers and finishes outside his home on a level gravel area.

54. Additional dust in the air could damage the finish of a woodwork project. If Zawislak had to refinish a project because the finish was damaged by dust that migrated onto his property, it would affect his profits on the project.

55. In 2007, there was an asphalt plant at the proposed quarry site that caused windborne grit and dust in the air that migrated to Zawislak’s land. This damaged the finish on his wood products, and he had to redo work. This has not happened since the asphalt plant stopped operating.

## The Sewer Board

56. The Sewer Board contracts with Alliance Water Resources to operate and maintain the sewage treatment plant (“the plant”). Pursuant to its contract with the Sewer Board, Alliance must maintain a \$1 million insurance policy.

57. The plant was constructed in the 1980’s as a joint project of the cities of Lake Ozark and Osage Beach. The plant treats sewage from those two cities.

58. The plant sits approximately 2,500 feet uphill from the Osage River. It is located on a 45-acre parcel to the north and west of the proposed quarry site. The plant is 650-700 feet from the property line.

59. The plant is permitted to treat 3 million gallons per day, but it has the capacity to treat more. During the weekend of July 4, 2008, the plant processed 4 to 5 million gallons of sewage per day. Its average total inflow is approximately 1.5 million gallons per day, of which about 1.2 million gallons come from Osage Beach.

60. The sewer system contains approximately 120 miles of pressure lines and nine miles of gravity lines serviced by approximately 1,250 pump and/or lift stations.

61. Sewage from Osage Beach generally travels uphill through the various sewer lines and pumping stations until it reaches a plateau at Highway D. From there, all of the sewage collected from the community flows downhill through the proposed quarry site into the plant.

62. Sewage enters the plant through two force main sewer lines<sup>10</sup> that cross the proposed quarry site. Both lines sit in a 30-foot easement located in a valley.

63. One of the sewer lines is constructed of 18-inch PVC joined together by a bell and spigot joint. The other is a 24-inch ductile iron pipe<sup>11</sup> joined together by bolts. According to the construction plans, both are buried at a depth of 36-42 inches. These lines are owned by the City of Osage Beach.

64. Sewage is treated at the plant by making its way through a series of oxidation ditches, where it is broken down by naturally occurring bacteria. The oxidation ditches are made of concrete and are 15-20 feet deep. Each ditch contains four slew valves that are designed like a flapper sitting over a drainage hole.

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<sup>10</sup> Material flows through force main lines through pump action, as opposed to gravity. Thus, the material is under pressure. Dressler, 6/6/08, at 21.

<sup>11</sup> "Ductile" means the material will bend rather than shatter under pressure. Worsey, 5/23/08, at 180.

65. After its treatment at the oxidation ditches, the sewage is then further treated by an ultraviolet light system (“the UV system”) before being discharged into the Osage River.

66. The UV system has several banks of 72 light bulbs. Staff inspect them on a regular basis and replace bulbs as they go out.

67. If the UV system fails, an alert system notifies the plant staff. Between the 2008 hearing and the 2012 hearing, the alert system has been upgraded so that staff is notified of a failure within a minute and a half. Resetting the system takes about five minutes.

68. If the UV system is offline for a few minutes, the quality of the plant’s effluent will not be impaired. However, if it is offline for two hours or more, it could be.

69. Vibrations from blasting, if strong enough, could disrupt the operation of the UV system by causing its light bulbs to break.

70. Pipelines located in the block movement zone of a blast could be displaced and rupture or develop leaks.

71. Pipelines can also be damaged by heavy digging equipment, if the equipment comes into contact with the pipe.

72. Karst topography is characterized by underground caves, cavities, and sinkholes. Such topography could add to the danger of blasting near sewer lines because the underground cavities and sinkholes could render the sewer lines and their bedding more unstable. Although karst topography is common in the Lake of the Ozarks area, there are no signs of karst topography at the proposed quarry site.

73. Continued vibrations, if strong enough, may cause or accelerate failure of materials such as iron, steel, or PVC. They could also cause pipeline joints to weaken and leak. However, some of the sewer lines in the sewer system that are not located close to quarries are exposed to

significant vibrations. One sewer line that is composed of ductile iron is suspended underneath the Grand Glaize Bridge and is subject to constant vibration from overhead traffic.

74. Excessive weight caused by heavy trucks or stockpiling of materials on the sewer line easement could cause underground pipes to rupture or leak from direct pressure or from further settling of the pipes and their surrounding bedding materials.

75. If either of the force main sewer lines running through the proposed quarry site ruptured, millions of gallons of raw sewage could spill within a short period of time. There are no redundancies in the sewer lines at that point that would allow for diversion of the sewage. Unless contained, the sewage would flow downstream into the Osage River.

76. Alternatively, the plant staff could shut down the entire system, including all the lift and pumping stations, but sewage would quickly back up into the homes and businesses in Osage Beach.

77. Blasting, if not carefully controlled, may also cause damage to above-ground structures from fly rock.

#### The City of Osage Beach

78. The City of Osage Beach (“the City” or “Osage Beach”) depends on tourism to generate multiple millions of dollars of revenue annually.

79. The population of Osage Beach is slightly under 5,000 residents, but on weekends the City has nearly 100,000 visitors for tourism and retail shopping.

80. The Lake of the Ozarks is a vital component of the City’s economy. To remain so, it must not only be clean and safe for water recreation and supply, but also be perceived by the public as clean and safe for those purposes.

81. A massive sewage spill or failure of the sewer system would be very damaging to the economy and reputation of the Lake and its surrounding communities.

82. Neither the City, nor Lake Ozark, is a petitioner in this case.

The Experts in this Case

83. Dr. Paul Worsley testified as an expert for Magruder. He is a professor at Missouri University of Science and Technology. He has multiple degrees in geology, rock mechanics excavation, and engineering. He holds a blaster certification from the Missouri Limestone Producers Association and is a member of the International Society of Explosives Engineers. He is an approved instructor for both the Missouri Department of Transportation's ("MoDOT") and the Missouri Blasting Safety Act's certification programs. He is also a chartered engineer in the United Kingdom and has published many scholarly works pertaining to blasting. For a MoDOT project, Worsley supervised blasting within 600 feet of delicate geologic features inside a cave with no resulting damage. He also supervised blasting near an existing sewer plant in Rolla.

84. Larry Mirabelli testified as an expert for Magruder. He holds a degree in chemical engineering and is a consultant for Dyno Nobel, the largest blasting company in the United States. He has substantial experience blasting near pipelines and structures. He participated in the blast planning for the "Big Dig" tunnel crossing beneath the Boston Harbor, which involved blasting near underground utilities.

85. Keith Henderson testified for Magruder. He was formerly employed by Dyno Nobel. He is now employed by Buckley Powder ("Buckley"), which entered into a joint venture with Dyno Nobel in 2011 and acquired Dyno Nobel's Missouri distribution locations. He is a licensed blaster in Missouri and is the chairman of the Missouri Blasting Safety Board. He is an instructor for blaster certification courses. He designs specialty blasts and provides technical assistance on issues relating to blasting. Henderson has blasted around sensitive electronic equipment and has never seen blasting cause an equipment failure.

86. Donald Dressler testified for the Sewer Board in 2008.<sup>12</sup> He was a practicing civil engineer licensed in Missouri, Kansas, Oklahoma, and Texas. He had a master's degree in engineering with an emphasis in damage assessment from seismic vibration, including blasting. He had numerous copyrights and publications related to blasting, and his work experience included construction projects for sewage treatment plants and the installation of high pressure sewer lines.

87. David Dressler testified for the Sewer Board. He has a bachelor of science degree in Environmental Planning. He is employed as a Field Project Professional at Terracon, a consulting company. He conducts pre-blast surveys and blast damage assessments, designs blast plans, and monitors blasting. He is not a certified blaster and does not do blasting on his own.

88. None of the five experts who testified in this case has ever seen an underground pipeline damaged by blasting vibrations.

#### Magruder's Blast Plan

89. No government agency regulates or enforces blast plans *per se*. However, industries or projects that require blasting sometimes develop and use blast plans.

90. Worsey designed a blast plan for the proposed quarry site, in consultation with Magruder's vice president, Dean McDonald.

91. The blast plan includes the following features:

- a. No blasting will occur within 150 feet of the sewer lines.
- b. Blast holes will be 4 inches in diameter. The excavation will be benched with a maximum bench height of 50 feet.<sup>13</sup>

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<sup>12</sup> Donald Dressler died in 2010.

<sup>13</sup> A "bench" is the horizontal ledge in a quarry or mine faces, or in a road or trail cut, along which holes are drilled vertically. Benching is the process of excavating whereby terrace or ledges are worked in a stepped shape.

- c. Quarrying will begin west of the sewer lines and proceed in three zones, “A,” “B,” and “C,” comprising approximately 60 of the 205 acres in the mine plan.
- d. Blasting will be done by 10,000-ton shots (by comparison, 20-30,000 ton shots are detonated at other Magruder quarries).
- e. As blasting progresses in the direction of the pipelines, Magruder will turn the blasting of the bottom bench 90 degrees to reduce pressure on the rock in the direction of the pipeline. This reduces the potential for rock movement toward the pipeline.
- f. Blasting vibrations at the sewer lines and the plant will be monitored by seismographs installed and monitored by a reputable third-party monitoring company.

Magruder’s Plans and Practices Not Contained in the Blast Plan

92. Magruder employs several practices to control fugitive dust. These include covering or enclosing production equipment, placing covers on screens used in processing crushed limestone, and using water and dust suppressant chemicals.

93. Magruder plans to use a conveyor system, rather than trucks on site, to transport material on the property. If it decides to use trucks at some point, the company would engineer and build a proper crossing similar to the crossings utilized by Osage Beach where public roads cross over buried utilities.

94. Magruder projects that it will quarry approximately 300,000 tons of limestone per year. This rate of production would require about 30 blasts per year.

95. Magruder plans to subcontract with Buckley to conduct blasting at the proposed quarry site.

96. Magruder has already leveled a part of the proposed quarry site to use as a pad for stockpiling rock. It does not plan to pile rock on the sewer pipe easement.

97. Magruder will have heavy equipment on site at the quarry that could quickly dig a retention basin to contain a sewage spill, if necessary.

98. The elevation of the mine floor at the quarry will be above the sewer lines to reduce the possibility of ground shifting or block movement in the pipeline area from blasting.

99. The quarry will be operated between 8:00 a.m. and 5:00 p.m. on weekdays, as necessary. It will not operate on weekends.

100. When Magruder expands its operation beyond the original 60 acres in the blast plan, it will utilize the safety features in the blast plan for the entire 205-acre mine plan.

101. Magruder maintains a \$1 million general liability policy and a \$4 million umbrella policy.

#### 2008 Blasting at the Proposed Quarry Site

102. Magruder initiated five blasts at the proposed quarry site on four dates in 2008, for the purpose of building a level pad site where Magruder could set up its quarry equipment and stockpile quarried rock. The blasting was performed by Dyno Nobel.

103. Before the blasting took place, seismographs were placed at four nearby locations: the sewer lines, the sewage treatment plant, the “Vincent residence” to the west of the site, and another nearby residence, the “Lake Ozark house.”

104. Seismographs are an accepted industry tool for monitoring blast vibrations.

105. Seismographs are set at a designated trigger level, meaning they only detect vibrations above a certain level. A blast triggering vibrations below that level is known as a “no trigger” event.

106. Blasting took place on the following dates with the following results:<sup>14</sup>

Date	Sewer Lines	Plant	Vincent Res.	L.O. House
08/22/08	no trigger	no trigger	—	.18
09/09/08	.055	.0675	—	—
09/11/08	.06	—	.0925	—
09/19/08	no trigger	—	.0375	—
09/19/08	no trigger	—	.185	.0775

107. On September 9, 2008, Gary Hutchcraft, the plant manager, was at the plant. He felt the ground shake, saw fly rock overhead, and heard a blast. Shortly after that, a routine status check revealed that the UV system had experienced a partial shutdown.

108. On September 19, 2008, Hutchcraft was again on site, in his office, when he felt the floor shake and heard the windows rattle. Within moments, he received a pager alert notification that the UV system had malfunctioned and shut down.

109. On September 25, 2008, the Sewer Board obtained an order from the Miller County Circuit Court enjoining all blasting.

110. The only other time the UV system has shut down is when a turtle chewed through some of its wiring.

111. In November 2008, Hutchcraft discovered that a piece of clay tile drain pipe on the plant property was broken. The pipe was over 20 years old.

#### Other Blasting Events

#### Highway 54 Expressway Project

112. ECI was a blasting subcontractor on the Highway 54 Expressway project through Osage Beach.

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<sup>14</sup> App. 46-49. All measurements are inches per second.

113. The expressway ran by a Wal-Mart. ECI placed a seismograph at Wal-Mart, approximately 150 feet from its blasting site.

114. ECI detonated blasts up to 41,500 tons in this area. The highest vibration level recorded by the seismograph at the Wal-Mart was 1.48 inches per second.

115. A 24-inch ductile iron sewer pipe and an 18-inch PVC sewer pipe ran between the blasting site and the Wal-Mart, approximately 100 to 120 feet from the blasts. Neither was damaged by ECI's blasting.

#### Prewitt's Point

116. Gary Prewitt developed a 168-acre parcel known as "Prewitt's Point" near the intersection of Highways D and 54 in Osage Beach, Missouri.

117. Prewitt's Point needed 3,000,000 cubic yards of "fill" material, which was excavated from a nearby site also owned by Prewitt ("the borrow pit").

118. Prewitt blasted at the borrow pit in 1998 or 1999. At the time, an 18-inch PVC sewer pipe ran across the west side of the borrow pit.

119. A 24-inch ductile iron pipe was installed through the borrow pit in about 2002. Blasting was ongoing and proceeded through the borrow pit for three to four years. Blasting came within five to ten feet of the sewer lines without causing damage.

120. Because the City was aware that Prewitt wished to use the site in question as a borrow pit, it buried the sewer pipes running through the property deeper than is customary. The depth of the pipelines ranges from 36 inches to 30 feet below ground in some spots.

#### Mexicali Blues

121. On January 4, 2011, as part of the Highway 54 Expressway construction project, Kolb Grading ("Kolb") was working in the area of the Mexicali Blues restaurant in Osage Beach, Missouri.

122. On that date, Kolb detonated a blast. A water main that was in the block movement zone ruptured.

123. Kolb's shot report for that blast stated: "average depth was 11 feet, shot went good, broke a water main, didn't know it was there."<sup>15</sup>

124. Richard King, director of the Osage Beach public works department, dispatched a crew to the site, and the crew confirmed that a water line was broken.

125. It took public works staff and a hired contractor one to two days to repair the water line break.

126. King became concerned that blasting might also have damaged a sewer line. Testing was performed, and it was confirmed on January 19, 2011, that a sewer line was broken and leaking.

127. King could not visually locate the sewer line break. The city hired a contractor who located the break by excavating the area. The sewer line break occurred approximately 150 yards from the water line break. The line that ruptured was a 2 ½ inch PVC pipe in a steel casing.

#### 1995 Incident

128. In the mid-1990s, a 16-inch PVC force main ruptured at the site of a former quarry operation when a void or settling underneath the pipe occurred and shot rock was piled on top of the line. In response, Osage Beach called all pumper trucks within a 100-mile radius. They worked around the clock for three or four days to make the repair, during which time approximately 1.5-1.6 million gallons of raw sewage leaked onto the ground.

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<sup>15</sup> BP 62.

### 1999 Incident

129. In 1999, an 18-inch PVC force main broke because nearby construction activities disturbed the ground near the line and changed the surrounding pressure on the line. The break resulted in approximately 150,000 gallons of raw sewage being spewed onto the ground in about thirty minutes. Clean-up and remediation took five days to complete.

### 2008 Incident

130. In 2008, a 24-inch force main was ruptured when a large scraper gouged a hole in it during the Highway 54 construction project. The rupture sent a geyser of raw sewage approximately 100 feet into the air. An on-site contractor immediately constructed a holding basin to contain the sewage while the repair was made.

### Environmental Violations and Complaints against Magruder

131. The LRC issued eleven notices of violation (“NOVs”) to Magruder between April 17, 2002 and April 17, 2007. Nine of those occurred at Magruder’s Troy quarry. Of those, six occurred during a two-month period in 2004 because its chemical dust suppression system failed. From 2004 to 2007, the only NOV Magruder received was for failure to submit an operating permit renewal application on time. Magruder has received no NOVs since 2008.

132. Five people made complaints to the Missouri State Fire Marshal (“the Fire Marshal”) about blasting at Magruder’s quarry at Sunrise Beach, Missouri, in 2007-08. The complaints primarily concerned vibrations from blasting at the quarry. The blaster in each case was Buckley.

133. In each case, the investigator concluded that blasting vibrations were within the limits of state law, although some were elevated and approaching the legal limits. In some cases, data was missing from paperwork, resulting in regulatory violations.

## Conclusions of Law

The Land Reclamation Act was passed in 1971. Its purpose is set forth in § 444.762,

RSMo 2000:

It is hereby declared to be the policy of this state to **strike a balance between surface mining of minerals and reclamation of land subjected to surface disturbance by surface mining**, as contemporaneously as possible, and for the conservation of land, and thereby to preserve natural resources, to encourage the planting of forests, to advance the seeding of grasses and legumes for grazing purposes and crops for harvest, to aid in the protection of wildlife and aquatic resources, **to establish recreational, home and industrial sites, to protect and perpetuate the taxable value of property, and to protect and promote the health, safety and general welfare of the people of this state.**

(Emphasis added.)

Section 444.773 allows the LRC to grant a public hearing to formally resolve concerns of the public regarding a permit application. If a public hearing is granted, it shall “address one or more of the factors set forth” in § 444.773.4, which provides:

**In any public hearing, if the commission finds, based on competent and substantial scientific evidence on the record, that an interested party's health, safety or livelihood will be unduly impaired by the issuance of the permit, the commission may deny such permit. If the commission finds, based on competent and substantial scientific evidence on the record, that the operator has demonstrated, during the five-year period immediately preceding the date of the permit application, a pattern of noncompliance at other locations in Missouri that suggests a reasonable likelihood of future acts of noncompliance, the commission may deny such permit.** In determining whether a reasonable likelihood of noncompliance will exist in the future, the commission may look to past acts of noncompliance in Missouri, but only to the extent they suggest a reasonable likelihood of future acts of noncompliance. Such past acts of noncompliance in Missouri, in and of themselves, are an insufficient basis to suggest a reasonable likelihood of future acts of noncompliance. In addition, such past acts shall not be used as a basis to suggest a reasonable likelihood of future acts of noncompliance unless the noncompliance has caused or has the potential to cause, a risk to human health or to the environment, or

has caused or has potential to cause pollution, or was knowingly committed, or is defined by the United States Environmental Protection Agency as other than minor. If a hearing petitioner or the commission demonstrates either present acts of noncompliance or a reasonable likelihood that the permit seeker or the operations of associated persons or corporations in Missouri will be in noncompliance in the future, such a showing will satisfy the noncompliance requirement in this subsection. In addition, **such basis must be developed by multiple noncompliances of any environmental law administered by the Missouri department of natural resources at any single facility in Missouri that resulted in harm to the environment or impaired the health, safety or livelihood of persons outside the facility.** For any permit seeker that has not been in business in Missouri for the past five years, the commission may review the record of noncompliance in any state where the applicant has conducted business during the past five years. Any decision of the commission made pursuant to a hearing held pursuant to this section is subject to judicial review as provided in chapter 536. No judicial review shall be available, however, until and unless all administrative remedies are exhausted.

(Emphasis added.) Thus, in order to deny a permit, the LRC must determine, based on competent and substantial scientific evidence on the record, one of two things: either that an interested party's health, safety or livelihood will be unduly impaired by the issuance of the permit; or that the operator has demonstrated, during the five-year period immediately preceding the date of the permit application, a pattern of noncompliance at other locations in Missouri that suggests a reasonable likelihood of future acts of noncompliance.

## I. Preliminary Issues

### A. Evidence

#### 1. Exhibits/Testimony

We asked the parties to designate exhibits and portions of the transcripts from the 2008 hearing to be included in this record. We accept into the record of this hearing the following transcript designations from the 2008 hearing:

Mike Atkisson	pgs. 14-73 (March 24)
Vicky Stockman	pgs. 74-135 (March 24)
Robert C. Zawislak	pgs. 7-29 (April 28)
Mitchell Roberts	pgs. 33-129 (April 28)
William Zeaman	pgs. 130-220 (April 28)
Larry Coen	pgs. 220-261 (April 28)
Dean McDonald	pgs. 7-250 (April 29)
Richard C. King	pgs. 250-282 (April 29)
Gary Hutchcraft	pgs. 10-100 (April 30)
Greg Gognan	pgs. 102-138 (April 30)
Richard C. King	pgs. 141-198 (April 30)
Nicholas Edelman	pgs. 199-232 (April 30)
Penny Lyons	pgs. 232-260 (April 30)
Dr. Paul Worsey	pgs. 85-331 (May 23)
Lawrence Mirabelli	pgs. 7-159 (June 4)
Keith Henderson	pgs. 160-305 (June 4)
Donald Dressler	pgs. 6-280 (June 6)

We have included in this record all of the 2008 hearing testimony designated by the parties because it was not objected to. For the benefit of the members of the LRC who review this record pursuant to § 444.789.3, however, we note that much of the designated 2008 hearing testimony duplicated the hearing testimony adduced at the 2012 hearing. The exceptions are the testimony of those persons who testified only in 2008: Vicky Stockman,<sup>16</sup> Worsey, Mirabelli, and Donald Dressler. The testimony of Mitchell Roberts, William Zeaman, and Larry Coen about the process by which Magruder's application was submitted, processed, and deemed complete, is irrelevant. Any issues relating to the completeness of the application were resolved in Magruder's favor by the appellate court in *Lake Ozark* and are now law of the case.

The parties also made deposition designations. We have included these designations as exhibits, and grant the request to make these designations part of this record. We note, however, that while Magruder designated portions of David Dressler's depositions on three separate

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<sup>16</sup> Mike Atkisson, Vicky Stockman, and Robert C. Zawislak were petitioners in the case at the time of both hearings. Atkisson and Zawislak testified in 2008 and 2012. Stockman testified only at the 2008 hearing.

occasions, it never provided deposition pages from David Dressler's August 23, 2012 deposition. Accordingly, we have not considered them.

The parties also designated exhibits from the 2008 hearing, and introduced additional exhibits at the 2012 hearing. A list of all exhibits admitted into the record in this case is attached to this recommended decision as Appendix A.

## 2. Rulings

Two evidentiary issues were reserved for resolution with the case. At the hearing, the Sewer Board offered into evidence Exhibits BP 115 and 117 – 129. Exhibits BP 115 and BP 117-23 are printouts from the federal Mine Safety and Health Administration (“MSHA”) website titled “Mine Citations, Orders, and Safeguards.” They list, but contain no other information about, Magruder’s MSHA violations. Exhibits BP 124-129 are records of the Fire Marshal, which include complaints and investigations. Although Magruder objected to both, it then made a conditional offer of its own Exhibit App. 59, which is the full record of the MSHA violations.

The Sewer Board acknowledges that citations or complaints against Magruder from government agencies other than DNR are not relevant to deny Magruder’s permit on the ground that it has demonstrated a pattern of noncompliance in Missouri that suggests a reasonable likelihood of future noncompliance. That prong of § 444.773.4 may be satisfied only by showing “multiple noncompliances of any environmental law **administered by the Missouri department of natural resources** at any single facility in Missouri that resulted in harm to the environment or impaired the health, safety or livelihood of persons outside the facility.”

(Emphasis added.) The Sewer Board has abandoned that argument as a ground for denying the permit application. Nonetheless, the Sewer Board argues these violations are relevant because:

Magruder’s track record demonstrates its unwillingness or inability to comply with applicable industry regulations and to take steps to minimize its impact on neighboring property owners. While

Magruder's history may not demonstrate a pattern of non-compliance of the sort contemplated by RSMo. § 444.773.4 as *per se* grounds for denial of a permit application, its history nonetheless illustrates a lack of regard for industry standards, complaints of citizens and claims of property damage by neighboring property owners.

\* \* \*

While this history of complaints and failure to comply with state and federal standards and regulations does not establish a pattern of non-compliance sufficient to warrant denial of the permit under RSMo. § 444.773.4, it does demonstrate that Magruder's quarry operations have been a consistent source of safety and environmental concerns as well as complaints from neighboring property owners.<sup>[17]</sup>

In essence, the Sewer Board's argument is: Magruder has an extensive history of regulatory violations with MSHA, the Fire Marshal, and DNR; it is not a careful operator; its blast plan and its expressed intentions might be helpful safeguards, but the company cannot be trusted to follow through with them.

DNR, which remained a neutral party in this case, expressed an opinion on this issue. At the hearing, its counsel opined that the MSHA violations were not relevant because MSHA regulates worker safety, not the impact of mining operations on the environment or the general public. By contrast, the Fire Marshall's incident reports concerned the impact of blasting on the environment and members of the public.

The purpose of the Mine Safety and Health Administration is the administration and enforcement of the Mine Safety Act. 29 U.S.C. § 557a. The purpose of the Mine Safety Act is to ensure the safety of miners. *Cumberland River Coal Co. v. Federal Mine Safety and Health Review Com'n*, 712 F.3d 311, 317 (6<sup>th</sup> Cir., 2013). In 30 U.S.C. § 801, Congress declared the purpose of the Mine Safety Act as follows:

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<sup>17</sup> *Petitioner Joint Sewer Board's Proposed Findings of Fact and Conclusions of Law* ("Sewer Board Brief") at 60-61.

Congress declares that—

- (a) the first priority and concern of all in the coal or other mining industry must be the health and safety of its most precious resource—the miner;
- (b) deaths and serious injuries from unsafe and unhealthful conditions and practices in the coal or other mines cause grief and suffering to the miners and to their families;
- (c) there is an urgent need to provide more effective means and measures for improving the working conditions and practices in the Nation’s coal or other mines in order to prevent death and serious physical harm, and in order to prevent occupational diseases originating in such mines;
- (d) the existence of unsafe and unhealthful conditions and practices in the Nation’s coal or other mines is a serious impediment to the future growth of the coal or other mining industry and cannot be tolerated;
- (e) the operators of such mines with the assistance of the miners have the primary responsibility to prevent the existence of such conditions and practices in such mines;
- (f) the disruption of production and the loss of income to operators and miners as a result of coal or other mine accidents or occupationally caused diseases unduly impedes and burdens commerce; and
- (g) it is the purpose of this chapter
  - (1) to establish interim mandatory health and safety standards and to direct the Secretary of Health and Human Services and the Secretary of Labor to develop and promulgate improved mandatory health or safety standards to protect the health and safety of the Nation’s coal or other miners;
  - (2) to require that each operator of a coal or other mine and every miner in such mine comply with such standards;
  - (3) to cooperate with, and provide assistance to, the States in the development and enforcement of effective State coal or other mine health and safety programs; and
  - (4) to improve and expand, in cooperation with the States and the coal or other mining industry, research and development and training programs aimed at preventing coal or other mine accidents and occupationally caused diseases in the industry.

We conclude that DNR’s distinction between the comparative relevance of the MSHA violations and the complaints to the Fire Marshal is a sensible one that accords with the primary purpose of the Land Reclamation Act – protection of the environment – and the language of § 444.773, which is concerned with the health, safety, and livelihood of interested parties.

Furthermore, the Fire Marshal's records are the ones most relevant to the Sewer Board's argument that "Magruder's quarry operations have been a consistent source of safety and environmental concerns as well as complaints from neighboring property owners." Accordingly, we admit Exhibits BP 124-29. We exclude from the record Exhibits BP 115 and 117-23 and App. 59.

The second evidentiary issue concerns the admissibility of hearsay in connection with the testimony of two of Magruder's experts, Worsey and Henderson, regarding the Mexicali Blues incident. Both concluded that the reason Kolb's blasting broke a water main was that the blast was detonated within the block movement zone. They relied in part on a conversation they had with Tom Greiwe, Kolb's drill and blast supervisor. There is no evidence that Greiwe was present at the site when the blast occurred. The Sewer Board seeks to exclude that portion of their testimony that reported their conversations with Greiwe.

Section 490.065, RSMo 2000, governs the admissibility of evidence on which experts may base their opinions in civil cases in Missouri. It provides in part:

3. The facts or data in a particular case upon which an expert bases an opinion or inference may be those perceived or made known to him at or before the hearing and must be of a type reasonably relied upon by experts in the field in forming opinions or inferences upon the subject and must be otherwise reasonably reliable.

Greiwe's statements to Henderson and Worsey are clearly hearsay, but case law makes it clear that experts may rely on hearsay. *State v. Fulton*, 353 S.W.3d 451, 457 (Mo. App. W.D., 2011). However, under § 490.065.3:

"The questions are ... whether the hearsay [or lack of firsthand knowledge] as tested by professional acceptance standards in the field is reasonably reliable, and whether it is otherwise reasonably reliable as a matter of general evidentiary principle." The first mandate under subsection (3) requires a court to determine

whether the facts and data are reasonably relied upon by experts in the particular field.

The practice of allowing an expert to testify as to facts and data of a type reasonably relied upon by experts in the field “as a juridical principle, is justified by the premise that a witness with specialized knowledge is as competent to evaluate the reliability of the statements presented by other investigators or technicians” as a fact-finder is to pass upon the credibility of an ordinary witness on the stand. Generally, the trial judge is expected to defer to the expert's assessment of what data is reasonably reliable. For instance, “[m]edical records are the quintessential example of the type of facts or data reasonably relied upon by experts in the field of medicine.”

The second mandate under section 490.065.3 requires the trial judge to look beyond the expert's testimony that his or her reliance on certain facts and data are reasonable due to the general standard of the expert's field. The trial judge must then ensure that the facts and data are otherwise reasonably reliable. “It is only in those cases where the source upon which the expert relies for opinion is so slight as to be fundamentally unsupported, that the finder of fact may not receive the opinion.”

*Goddard v. State*, 144 S.W.3d 848, 854 (Mo. App. S.D., 2004) (internal citations omitted).

Magruder argues that its experts' testimony about their conversations with Greiwe should be admitted because experts in the field of blasting rely on conversations with witnesses or others involved in the blasting from which a complaint arises. Thus, such conversations are “of a type reasonably relied upon by experts in their field.” Further, it argues, the information is “otherwise reasonably reliable” because Greiwe gave the identical information to both Worsey and Henderson in two separate conversations. The Sewer Board counters that neither Henderson nor Worsey offered any evidence that Greiwe was either a witness or even at the blasting site when Kolb's blasting ruptured the water main, and that Greiwe, as an employee of Kolb, could not be considered an objective witness.

We agree with Magruder that experts in the field of blasting might reasonably rely on witnesses' verbal reports of an incident. But we also agree with the Sewer Board that a

conversation with a supervisor of the blasting company that caused the damage, who was not himself an eyewitness to the blast, and who did not provide further details as to how he formed his own conclusions, is not a sufficiently “otherwise reasonably reliable” source under § 490.065.3. We sustain the Sewer Board’s objection and exclude this testimony.

Nonetheless, as our findings of fact reflect, there is other evidence in the record sufficient to find that the water main that ruptured near Mexicali Blues was in the block movement zone of the blast that ruptured it. Thomas Powers, a MoDOT field inspector, stated in an affidavit that excavation “approximately 30 or more feet away from the blast site”<sup>18</sup> revealed the damage to the pipe and its encasement. There is no evidence in the record indicating whether “30 or more feet away” was outside the blast zone. Even if it was not, Powers’ statement clearly did not mean to indicate an exact measurement. Moreover, Henderson testified to his conclusion that the water main fell within the block movement zone not only on the basis of his conversation with Greiwe, but also from studying the GPS coordinates in the blast report and maps provided from David Dressler’s deposition. The shot report, which states, “broke a water main, didn’t know it was there,” does not state that the pipe was in the block movement zone, but implies that the cause for the rupture was that the blaster did not know the location of the pipe. David Dressler, the Sewer Board’s expert, agreed with this conclusion.<sup>19</sup> If the cause for the rupture was that the blaster did not know the pipe “was there,” the logical inference is that the pipe was in the block movement zone. Finally, all experts, including the Sewer Board’s, agreed they had never seen an underground pipeline break simply due to vibrations.

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<sup>18</sup> BP 156 at 2.

<sup>19</sup> The Sewer Board, in its reply brief, states that David Dressler did not make such a statement. His testimony at hearing on this point was unclear, but he agreed with this proposition in his deposition. *See* App. 65 at 235.

Although we exclude the hearsay testimony from both Henderson and Worsey regarding Tom Greiwe's statements, we nonetheless conclude the water main near Mexicali Blues ruptured after a blast because it was in the blast's block movement zone.

#### B. Burden of Proof

In 2008, § 444.773.4 stated: "In any hearing held pursuant to this section the burden of proof shall be on the applicant for a permit." Despite this, in its 2008 decision the LRC allocated the burden of proof to the Petitioners in this case. The court of appeals, in reversing the LRC's 2008 decision, stated:

The [LRC]'s statements are contrary to the plain language of section 444.773 and 10 CSR 40-10.080(3)(B). Petitioners bore only the burden of producing sufficient scientific evidence to establish an issue of fact that the permitted quarrying operations would impact their health, safety, or livelihood. As the applicant, Magruder bore the burden of persuading the [LRC] to rule in its favor by proving that the impact from the permitted quarrying operations would not unduly impair Petitioner's health, safety, or livelihood.

*Lake Ozark*, 326 S.W.3d at 44.

The sentence allocating the burden of proof was removed from § 444.773 in 2011, and the statute is now silent on that issue. The LRC's regulation, however, has not been rescinded. In this case, Magruder initially argued that the statutory change signaled the legislature's intent to place the burden of proof on the Petitioners. Magruder changed its position during the course of these proceedings, however, and all parties now agree that, in accordance with 10 CSR 40-10.080(3)(B), Petitioners bear the burden of production and the Applicant subsequently bears the burden of persuasion.

Regulations promulgated pursuant to statutory authority have the force and effect of law. *Killion v. Bank Midwest, N.A.*, 886 S.W.2d 29, 32 (Mo. App., W.D. 1994). Thus, despite the

statutory change in 2011, we agree with the parties and apply the burdens of production and persuasion in accordance with the LRC's regulation.

The burden of production is the burden “of establishing an issue of fact regarding the impact, if any, of the permitted activity on [his/her] health, safety, or livelihood.” 10 CSR 40-10.080(3)(B). The “impact to the petitioner’s health, safety, and livelihood must be within the authority of an environmental law or regulation administered by” the DNR. 10 CSR 40-10.080(2)(B). If the petitioner carries its burden of production, the burden then shifts to the permit applicant to refute the evidence. “To satisfy the burden of persuasion, the applicant must prove, by competent and substantial scientific evidence, that the petitioner’s health, safety, or livelihood will not be unduly impaired” by the permitted activity. *Lake Ozark*, 326 S.W.3d at 44 (citing 10 CSR 40-10.080(3)(B) and (D)). The court in *Lake Ozark* further distinguished between the burdens of proof and production by citing Black’s Law Dictionary:

[T]he hearing petitioner has the initial burden of production, that is, the “duty to introduce enough evidence on an issue to have the issue decided by the fact-finder.” BLACK’S LAW DICTIONARY 223 (9<sup>th</sup> ed. 2009) . . . If the petitioner produces sufficient scientific evidence of the impact of the permitted activity under this standard, the applicant must then satisfy the burden of persuasion, which is the “duty to convince the fact-finder to view the facts in a way that favors that party.” BLACK’S, *supra* at 223.

*Lake Ozark*, 326 S.W.3d at 43-44.

C. The LRC has the authority to impose conditions on the Permit.

On May 14, 2013, the Missouri Court of Appeals, Eastern District, issued a decision in *Saxony Lutheran High School, Inc. v. Missouri Department of Natural Resources*, Case No. ED99038, 2013 WL 1966387 (Mo. App., E.D. May 14, 2013). Saxony Lutheran High School filed a motion for rehearing or transfer in the Court of Appeals on May 28, 2013 that has not yet been disposed.

On June 3, 2013, the Sewer Board filed a supplemental briefing concerning the effect of that ruling on the case before us. On June 19, 2013, Magruder filed a response to the Sewer Board's supplemental briefing.

In *Saxony Lutheran*, the court determined that the LRC had the authority to impose a condition on a permit to operate a limestone mine before it approved the application. While the quarry's application was pending, a newly enacted law took effect requiring a 1,000-foot buffer between a mining area and a school. *Id.* at \*1. The quarry's application had specified a 55-foot buffer. *Id.* The LRC allowed the quarry to revise its mine plan during the hearing process to conform to the new law. *Id.* On appeal, the circuit court ruled that the LRC lacked authority to condition approval on a revision to the mine plan submitted for the purpose of bringing the mine plan into statutory compliance. *Id.* at \*2. In other words, the LRC had authority to approve or deny a permit application, but not to conditionally approve one. The appeals court reversed this decision.

The Sewer Board attempts to limit the holding to the specific facts of that case – a newly adopted statute that created a statutory prohibition to the mine plan and the agreement by the applicant to revise its application. There is language to that effect in the opinion: “An even narrower issue is presented here: that is, whether the [LRC] may condition approval specifically by requiring a modification to the mine plan that would bring the proposed operation into compliance with existing law.” *Id.* at \*3. But there is much more to the opinion, and we do not read *Saxony* so narrowly. The court of appeals emphasized the difference between the LRC and other DNR commissions, stating that *Saxony's* reliance on *Mueller v. Missouri Hazardous Waste Management Comm'n*, 904 S.W.2d 552 (Mo. App., S.D. 1995), was misplaced:

[T]he power to modify a permit after it has been issued is different than the power to impose a condition on a permit as part of the process of initial approval. Here, we are not concerned with

whether the Commission has the power to modify a permit after it has already been issued. The HWMC's role in the hazardous waste permitting process (as well as the roles of the commissions compared to the HWMC in *Mueller*) is different than the Commission's role under the Act regarding surface mining permits. The HWMC considers permits that have already been approved on appeal, whereas the Commission, in the context of applications that are contested by third parties, passes on the permit applications in the first place.

*Id.* at \*3. Because the LRC's role in the permit approval process was different from that of the other DNR commissions, the court found that the danger that formed the basis for the *Mueller* decision – that of undermining public involvement in the permit approval process by allowing post-approval revisions – did not exist in the LRC permit approval process. *Id.* at \*8.

The court also found that the enabling language authorizing the LRC to “[e]xamine and pass on all applications,” §§ 444.767(3) and 444.801(3), RSMo 2000, was broader than other DNR commissions' authority to *review* DNR decisions to grant or deny permit applications. *Id.* at \*5. It compared the LRC to DNR agencies that issue permits, all of which have some provisions for issuing conditional permits. “[W]e have no reason to believe the legislature intended [the LRC] to be the only permit-granting entity without power to impose conditions on such permits during the process.” *Id.* at \*6. Quite simply, other DNR commissions *review* DNR's permit decisions; in the case of an LRC permit, the LRC *makes* the decision and can place conditions on the permits it issues.

The reasoning in *Saxony Lutheran* is persuasive. The LRC should have the authority to impose conditions on the granting of a permit.

The Joint Sewer Board argues that to add such conditions would deprive it of the opportunity to present evidence regarding the impact of the new conditions. To the contrary, the majority of the conditions we recommend adding to the permit appear in Magruder's blasting plan, which has been known to all the petitioners in this case since 2008, and were discussed at

length at the hearing. The others were also discussed extensively at the hearing, and are recommended for the purpose of providing *greater*, not lesser, protection to the sewer system. We note that the Sewer Board, by adopting an all-or-nothing approach in this case, essentially deprived itself of the opportunity to engage in the process of developing these safeguards. But that was its choice.

The Sewer Board also complains that the blasting plan was not part of the permit application and was not enforceable. Although no government agency enforces blast plans *per se*, by conditioning the permit on Magruder's adherence to the blast plan and other safety-enhancing conditions, those provisions will be enforceable by the LRC pursuant to § 444.787.

We believe the LRC has the authority to impose and enforce conditions on the permit, and we recommend that the LRC grant the application for the permit with conditions as set forth at the end of this recommended decision.

## II. Health, Safety or Livelihood of an Interested Party

Petitioners argue that the operation of Magruder's quarry at the proposed quarry site would unduly impair their health, safety, or livelihood. Because the various petitioners presented different arguments as to how the operation of the quarry could affect them, we address the arguments by petitioner below.

### A. The Sewer Board

The Sewer Board makes two primary arguments: that the impact of Magruder's activities *on the plant* would unduly impair the health, safety or livelihood of the citizens it serves, and that the impact *on the sewer lines* running through the proposed quarry site would do the same. We examine each to determine whether the Sewer Board has met its burden of production on the issue, then whether Magruder has successfully met its burden of persuasion to show that its

operations at the proposed quarry site will not cause undue impairment of the health, safety or livelihood of the petitioners in this case.

### 1. The Plant

The plant property is located directly adjacent to the proposed quarry site. The Sewer Board argues that at its closest point, the proposed quarry could conduct mining operations just 50 feet from the plant and equipment, and that the activities associated with the quarry operation would unduly impact the operation of the plant.

The Sewer Board's argument on this point is misleading. It is true that its property and the proposed quarry site are adjacent to one another. It is also true that Magruder's blast plan calls for a 50-foot setback from the property line. This does not mean that Magruder could blast 50 feet from the plant, however. The plant is situated in the middle of its 45-acre property, not at the very edge. Even if Magruder blasts right up to its 50-foot setback, the blasting would be approximately 650-700 feet from the plant.<sup>20</sup>

The Sewer Board also claims that if excessive vibrations caused the slew valves in the concrete oxidation basins to become unseated, sewage would leak from the ditches and it would be difficult and time consuming to find the source of the leak. It also relies on Magruder's blasting events in 2008, and claims they actually caused the UV system to shut down. A malfunction of the UV system would cause the sewer plant to be out of compliance if not promptly resolved because the resulting effluent discharged would not meet DNR standards.

To support these claims, the Sewer Board produced testimony from Gary Hutchcraft, the plant operator, and its expert, David Dressler, about the slew valves, the operation of the UV system, and the reaction of the UV system to Magruder's blasts in 2008. Hutchcraft claims that when Magruder blasted in 2008, he felt the vibrations and felt the oxidation ditch basins vibrate;

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<sup>20</sup> Dressler Consulting Report, 3/19/08 at 5 (Ex. BP 23).

he saw fly rock overhead; and shortly afterward the UV system experienced a shutdown. David Dressler opined that the 2008 blasting “caused the UV to shut down and [it] had to be reset.”<sup>21</sup> Magruder attacks the quality and speculative nature of the Sewer Board’s evidence by pointing out that the plant operator is not an expert and knows little about blasting, and that the Sewer Board’s expert who testified on this issue, David Dressler, is neither an engineer nor a certified blaster. Magruder argues, therefore, that neither person’s testimony meets the standard of competent and substantial scientific evidence, so the Sewer Board did not meet its burden of production on this issue.

“Competent evidence is relevant and admissible evidence that can establish the fact at issue.” *Missouri Real Estate Appraisers Comm’n v. Funk*, 306 S.W.3d 101, 106 (Mo. App. W.D. 2010) (quoting *Martin Marietta Materials, Inc. v. Bd. of Zoning Adjustment of Cass County*, 246 S.W.3d 9, 11 n. 3 (Mo. App. W.D. 2007)). “Substantial evidence is competent evidence which, if believed, would have probative force upon the issues.” *Id.* No Missouri case or statute defines “scientific evidence,” but a legal dictionary defines it as “fact or opinion evidence that purports to draw on specialized knowledge or to rely on scientific principles for its evidentiary value.” BLACK’S LAW DICTIONARY at 639 (9<sup>th</sup> ed. 2011).

Hutchcraft’s testimony was not based on “scientific principles,” but it would fly in the face of common sense to discount his actual, on-site observations that were contemporaneous with Magruder’s 2008 blasting at the proposed quarry site. Observation is, after all, part of scientific method.<sup>22</sup> More to the point, however, Hutchcraft’s empirical evidence was supported by the Sewer Board’s expert, David Dressler. Magruder attacks Dressler’s qualifications in the areas of blasting and engineering. But his testimony clearly “purported to draw on specialized

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<sup>21</sup> Tr. 557.

<sup>22</sup> See BLACK’S LAW DICTIONARY, 9<sup>th</sup> ed., at 1463 (the “scientific method is an analytical technique by which a hypothesis is formulated and then systematically tested through observation and experimentation”).

knowledge or to rely on scientific principles.” We conclude that the Sewer Board met its burden to establish, by competent and scientific evidence on the record, an issue of fact as to the impact of blasting on the plant.

Having determined that the Sewer Board met its burden of production, we summarize its position on the potential impact to the plant as follows:

Blasting produces vibrations. The vibrations could be significant enough to unseat the slew valves in the oxidation basins, causing them to leak. Any such leak would be difficult to detect and would meanwhile cause environmental damage. It would require the Sewer Board to drain the oxidation ditches to search for the leak. Furthermore, the UV system is very sensitive. Blasting vibrations not only could, but have disrupted its operations, causing a partial shutdown one time and a complete shutdown another time. Any such shutdown, if undetected, would cause the effluent from the plant to not be fully disinfected, and the resulting effluent discharged into the Osage River might fail to meet DNR standards.

As discussed above, there is support in the record for the Sewer Board’s position. But we find Magruder’s evidence that its operations will not cause undue impairment to the plant more convincing. Magruder produced considerable evidence about the strength of potential vibrations at the sewer plant and the resistance of both above-ground and underground structures to the size of blasts anticipated by the blast plan.

The Sewer Board’s concern about the slew valves is almost entirely speculative. The plant is an above-ground structure. It will be monitored by a seismograph, and blasting vibrations may not exceed the limits set forth in the Blasting Act. The slew valves in the oxidation ditches are underground. As underground structures, they are more tolerant to blasting vibrations than above-ground structures. Although the Sewer Board’s experts agreed with Hutchcraft that the valves were a concern, they presented no scientific evidence to support this point.

Likewise, there is no evidence that the clay tile pipe discovered in November 2008 on the plant property broke as a result of any blasting activity. Even Hutchcraft admitted it could have broken simply because it was old.

The concern about the UV system is more substantial. The Sewer Board's evidence is that Magruder's blasting in 2008 twice disrupted the operation of the UV system, once entirely knocking it offline. Magruder produced evidence that it had monitored the blasts and that the seismograph readings proved that the vibrations from the blasts were so low they could not have had the reported effect, and its experts testified accordingly. The data is missing, however, for September 19, 2008, the date of the UV plant's total shutdown. Moreover, it is difficult to discount the testimony of Gary Hutchcraft, the plant manager, who was on site at the time of the 2008 blasts. Magruder again argues that we should not consider Hutchcraft's testimony because it is not "competent and substantial scientific evidence," in that Hutchcraft has no training or experience in blasting, and is not qualified to render an opinion on whether Magruder's blasting caused the UV system to lose power. But David Dressler opined that the 2008 blasting "caused the UV to shut down and [it] had to be reset." Tr. 557. For the reasons discussed previously, therefore, we consider this evidence.

We conclude that there is competent and substantial scientific evidence that blasting at the proposed quarry site has the potential to disrupt the operation of the UV system. This is not the end of the inquiry, however. We must also determine whether such disruption will cause undue impairment of the health, safety or livelihood of the petitioners in this case. "Undue" means "excessive or unwarranted." BLACK'S LAW DICTIONARY, 9<sup>th</sup> ed., at 1666. We conclude it will not.

Plant employees regularly inspect and perform maintenance on the UV system, including replacing its light bulbs on a regular basis. In fact, the evidence shows that replacement of light

bulbs is routine and common. Since 2008, a new warning system has been installed at the plant, which alerts personnel of a shutdown in one and a half minutes. It takes about five minutes to reset the system, and that is not enough time to compromise the quality of the effluent so that it fails to meet DNR's standards.

The Sewer Board argues that if all the bulbs shorted out and there were not enough replacements on hand, the UV system could not operate, and the effluent from the plant would not meet DNR's standards. This problem has a simple solution, which is to maintain a sufficient supply of bulbs for the system to replace all of them at once should it be necessary to do so. This precaution seems prudent for reasons beyond the scope of this case; for example, massive bulb failure could be caused by a severe weather event. It is not an undue burden on the Sewer Board.

While it is prudent for the Sewer Board to keep an adequate supply of replacement light bulbs so that it can replace them all at once if necessary, if Magruder's blasting causes frequent or massive outages, Magruder should not only bear the cost to replace the bulbs and any other repairs, but should also be required to take measures to reduce the impact of its blasting on the UV system. Such measures would require the parties to work cooperatively. If they cannot do so, the Sewer Board should notify the LRC of problems related to the UV system and the LRC should require Magruder to modify its blast plan to reduce or eliminate the impact of its blasting on the UV system.

In addition, Magruder plans to conduct about 30 blasts per year and for the quarry to operate only from 8:00 to 5:00 on weekdays. It should be a simple matter for Magruder to provide advance notice to plant personnel of when it intends to blast, and this should be a condition on the permit. Plant personnel may then inspect the UV system to determine whether it has experienced any malfunction that can be attributed to the blast.

## 2. The Sewer Lines

The Sewer Board points out that approximately 1.5 million gallons of raw sewage per day flows through the two force main sewer lines that run through the proposed quarry site. If either ruptured, the City would have to choose between allowing the sewage to flow untreated into the Osage River, or shutting down the system and allowing sewage to back up through inflowing lines, lift stations, and ultimately into businesses and homes. It argues that the environmental damage and economic damage would be catastrophic, and would pose an immediate health risk to residents and visitors. In particular, it focuses on three potential risks to the sewer lines:

- Blasting vibrations associated with a quarry operation could rupture the lines or loosen the line joints, causing the lines to leak raw sewage.
- Blasting vibrations associated with the quarry operation could cause settlement of the line bedding, creating a void around the lines and causing them to rupture.
- Heavy trucks crossing over the lines or rock stockpiled on top of the lines could cause the lines to collapse under their weight.

Part of the Sewer Board's evidence consists of similar events that have happened in the past. In the mid 1990s, a 16-inch PVC force main sewer line ruptured on the site of a former quarry operation after rock was stockpiled on top of the line. In 1999, excavation around an 18-inch PVC force main sewer line caused the line to rupture after rock settling away from the line caused a change in pressure surrounding the line. In 2008, a sewer line was broken by heavy equipment. In the Mexicali Blues incident, a water main and a sewer line ruptured after nearby blasting.

Magruder again counters that the Sewer Board has raised no more than hypothetical concerns about the environmental and economic impact that a rupture of the sewer lines would

have on Osage Beach, and that it has “failed to produce any evidence, let alone competent and substantial scientific evidence, that Magruder’s quarry activity would in fact rupture or damage the sewer lines at issue.”<sup>23</sup> It points out that the City of Osage Beach is not a petitioner in this case, and that the Sewer Board lacks standing to raise concerns about the impact of a sewage system failure on the City or its non-petitioner businesses and citizens. It repeats its attack on the reliability of the Sewer Board’s expert and contends that the Mexicali Blues line breaks are not predictive or relevant because the blasting there occurred within the block movement zone, whereas the location of the sewer lines in the proposed quarry site is known and the lines will be avoided. It points out that no expert who testified in this case – including the Sewer Board’s – had ever seen blasting vibrations damage a buried pipeline. Thus, it argues that the Sewer Board did not meet its burden of production.

Once again, we disagree and find that it did. It is true that a great deal of the evidence and testimony the Sewer Board presented may be summarized as: “accidents happen and the stakes are simply too high,” whereas some of the leading experts in the field of blasting testified on behalf of Magruder. But the record is not devoid of competent and substantial scientific evidence establishing the Sewer Board’s concerns as issues of fact. Most notable and credible is the evidence provided by Donald Dressler at the 2008 hearing.

Donald Dressler testified that vibrations over a long period of time could cause the pipe materials to weaken and the PVC pipe joints to weaken and leak. He also testified that increased loads from quarry trucks or stockpiling of material on the sewer easement could also weaken the pipes or cause further settling of the pipes and their bedding material, either of which could cause pipe failure. Donald Dressler acknowledged that RI 9523 was considered authoritative, but he opined that it had limited application in this case because the conditions studied in

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<sup>23</sup> *Magruder’s Proposed Findings of Fact and Conclusions of Law (“Magruder Brief”)* at 46.

RI 9523 were different from those at the proposed quarry site. Furthermore, because Donald Dressler knew of no studies of the durability of ductile iron pipe and the type of PVC pipe at the proposed quarry site, he opined that no level of vibration to the pipes was acceptable. At the 2012 hearing, David Dressler echoed some of these opinions, and also gave his opinions on the cause of the Mexicali Blues pipe failure.

The Dresslers' testimony is sufficient to meet the Sewer Board's burden of production. Again, however, we find Magruder met its burden to persuade the LRC that the blasting at the proposed quarry site will not pose undue risk to the sewer lines that run through the property.

Of the concerns expressed by the Sewer Board, the first is the easiest to address. Magruder plans to use a conveyor system rather than trucks to transport material on the property. It also has stated that if truck transport is needed, it will engineer a proper crossing similar to the crossings utilized by Osage Beach when public roads cross over buried utilities. It has already constructed a level pad for stockpiling rock that does not transverse the sewer line easement. These measures offer sufficient safeguard against that risk.

The risk associated with blasting vibrations is more difficult to address. The authors of RI 9523 concluded that the primary risk to pipelines comes from ground rupture and movement of fractured rock into the pipe at high velocity rather than vibrations per se. In other words, if a pipeline is in the block movement zone, it stands a good chance of rupture or damage, but not if it is outside that zone – even if the vibrations are very strong. The researchers found no pressurization failure or permanent strains even at vibration amplitudes of 600 mm/second, or 23.6 inches per second. However, they recommended that 125 mm, or 4.92 inches per second “is a safe-level criterion for large surface mine blasts for Grade B or better steel pipelines [and]

SDR 26 or better PVC pipe.”<sup>24</sup> Magruder’s blast plan includes seismographic monitoring of blasting vibrations over the sewer lines and observation of the recommended 4.92 inches per second limitation. The Sewer Board argues that RI 9523 cannot be relied on here because the pipelines studied were of different materials (steel vs. ductile iron, and differing grades of PVC) and because the topography of the proposed quarry site (rocky) is different from that of the study site (clay-soil over shale). Donald Dressler opined that there was no safe level of vibration for ductile iron pipe, simply because that had not been studied, and that the PVC pipe at the proposed quarry site was of a lower grade than the RI 9523 site, so it could not be compared.

We acknowledge these differences, but we nonetheless find the testimony of Magruder’s experts regarding the pipelines’ ability to withstand blasting vibrations to be more convincing. First, the “no tolerance” theory posited by Donald Dressler simply imposes an unrealistic standard not supported by any other evidence in the case, including the testimony of David Dressler. While ductile iron is not the same material as stainless steel, and the grades of PVC may vary somewhat, all the experts who testified in 2012 believe RI 9523 sets standards applicable to most buried pipelines, all agree that blasting near buried pipelines is common, and none has ever seen a pipeline damaged by blasting vibrations. Second, although David Dressler testified that there was a difference between the topography involved in the RI 9523 study and the topography at the proposed quarry site, he admitted that the Magruder site was actually “more tolerant of vibrations than the property in the study.”<sup>25</sup>

Thus, the incidents of damage to pipelines cited by the Sewer Board are cause for caution, but not outright denial of the permit expansion. Such incidents may be prevented by careful blasting, follow-through by Magruder of its expressed intentions, and observation of the

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<sup>24</sup> App. 42 at 36.

<sup>25</sup> Tr. 674.

blast plan. For example, Magruder does not plan to stockpile rock or drive trucks over the sewer easement. As to the latter, it represents that if it does, it will engineer a proper crossing to handle the weight. This requirement should also be incorporated into the permit conditions.

Furthermore, because the location of the sewer lines through the proposed quarry site is known, there should be little to no risk of direct damage from heavy equipment such as a scraper or bulldozer, as in the 2008 incident. And there is no evidence that the topography near the sewer lines is karst, with the danger of sinkholes that could render the lines and their bedding more unstable.

The one piece of evidence that remains troubling is the sewer pipe that broke near the water main at Mexicali Blues, discovered about two weeks after the water main broke. The sewer line was about 150 yards from the water main, which would be well beyond any blast zone. There is only circumstantial evidence that the same blast damaged both pipes, but there is also no evidence to the contrary in the record. If a blast could cause a sewer pipe 150 yards away to rupture, it stands to reason that continued blasting 150 feet away could do the same.

This is the *only* evidence in the record, however, that suggests that vibrations from blasting outside the block movement zone can damage a buried pipeline. One swallow does not a summer make. Given that every expert in this case agreed they had never seen such damage occur, we cannot rely on it to establish “undue” impairment to any petitioner’s health, safety, or livelihood.

While we conclude that Magruder has met its burden of persuasion, it is inappropriate to simply dismiss the Sewer Board’s concerns. As anyone who has ever lived near water or sewer pipes knows, pipes are subject to failure. Water mains break. Metal corrodes. Continual vibration loosens joints and weakens metal. These things happen whether or not pipes are close to blasting sites. The pipelines in the sewer system will not last forever. Eventually some will

fail, whether next to an operating quarry or not. But common sense suggests that repetitive blasting nearby could make the pipelines fail faster. This concern is so unquantifiable, however – and it has not been quantified by the evidence in this case – that it is not enough to make the case to deny the permit application. We note, however, that Worsey suggested a method to monitor the pipes for strain at the 2008 hearing:

It also would be prudent to uncover a section of the pipeline and install some circumferential measuring strain gauges to determine the actual stresses placed on the pipelines in a similar manner to the USBM study. This would give a direct measurement of the strain caused by the blasting. Ground vibrations themselves do not directly cause damage. It's the strains developed due to the ground vibrations. And this is an engineering thing, concept. It's not necessarily stress; it's the amount of strain. It's how much you bend or pull or compress something that causes it to fail. And this would actually be a direct measurement of that.<sup>[26]</sup>

Because neither party mentioned this possibility at the 2012 hearing, this suggestion has not been included in the list of permit conditions recommended at the end of this recommended decision. It is included here, however, as an additional potential safeguard for the LRC to consider. If it does so, we note that although Magruder should bear the cost for such a measure, it would logically be a cooperative endeavor between Magruder and the Sewer Board (or the City of Osage Beach, which actually owns the lines).

As to the final issue raised by the Sewer Board, the concerns about the fly rock were expressed primarily as dangers to the overhead utility lines. AmerenUE, the electricity service provider at the proposed quarry site, is not a petitioner in this case.

#### Undue Impairment

The Sewer Board makes one more argument that should be addressed. It agrees that “undue” means “excessive or unwarranted,” but extrapolates the following argument from that meaning:

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<sup>26</sup> Worsey, 8/23/08 at 158-59.

Accordingly, any analysis regarding whether Petitioners' health, safety or livelihood will be unduly impaired implicitly requires some balancing between the relative importance of the activities sought to be permitted and the impact those activities will have on Petitioners. If the permitted activity is vital to the community or to the viability of applicant's business as a whole, then a greater impact may be warranted. Conversely, if the permitted activity provides no discernible benefit, then any impact to Petitioners would be disproportionate or unwarranted.<sup>[27]</sup>

The Sewer Board is arguing, in essence, that the activity for which Magruder seeks a permit – quarrying limestone at the proposed quarry site – is not vital to the community or the viability of Magruder's business as a whole, while the potential harm to the sewer system is great. Hence, the permit application should not be granted. It buttresses this argument with excerpts from depositions that purport to show that Magruder has other sources from which to derive limestone to meet current business demand, and that the new quarry is therefore not necessary to its business. Hence, the balance tips away from Magruder and toward the Sewer Board.

We agree with the Sewer Board that the Land Reclamation Act calls for a balancing of interests; this is explicitly set forth in § 444.762. But the balancing does not turn on the relative importance of the interests of applicants and other interested parties. The balance that the LRC is instructed to achieve is between surface mining of minerals on the one hand, and reclamation of the land disturbed by such surface mining on the other. Furthermore, the policy of this state is to “establish recreational, home and industrial sites, to protect and perpetuate the taxable value of property, and to protect and promote the health, safety, and general welfare of the people of this state.” Section 444.762. This statute suggests that the general assembly wants to achieve both such goals, not to force a choice between one or the other.

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<sup>27</sup> *Sewer Board's Proposed Findings of Fact and Conclusions of Law* at 51.

If Magruder develops and operates the quarry, it will have established an “industrial site” and presumably, will have increased the taxable value of the proposed quarry site. With proper precautions, this can be done in a manner that protects surrounding homes and businesses and perpetuates *their* taxable value, and does not unduly impair the health, safety, and general welfare of the petitioners in this case. The appropriate meaning of “undue” in this context is simply the plain definition from the dictionary: excessive or unwarranted. We are convinced the quarry *can* be operated safely, so any impairment is not “undue.”

#### B. Individual Parties

Section 444.773 requires petitioners to meet their burden of production to establish issues of fact by “competent and substantial scientific evidence on the record.” This is a heavy burden for individual petitioners to bear. We recall our previous definitions of these terms: Competent evidence is relevant and admissible evidence that can establish the fact at issue. Substantial evidence is competent evidence which, if believed, would have probative force upon the issues. Scientific evidence is fact or opinion evidence that purports to draw on specialized knowledge or to rely on scientific principles for its evidentiary value.

While we do not in any way discount their concerns, it would be difficult to conclude that the individual petitioners produced any scientific evidence as defined above. They did, however, produce some empirical evidence that the LRC may wish to consider. Several of them attended every day of the 2012 hearing, and their concerns should be taken seriously. Therefore, we assume for the purposes of the following discussion that they have met their burden of production, and determine whether Magruder met its burden of persuasion to show that its quarry will not unduly impair their health, safety, or livelihood.

Vicky Stockman

Stockman testified that prior quarry operations near Riverview had an economic impact on the RV Park. Riverview was not at full capacity and received lower ratings in trade directories when the quarry was operating. Both improved when the quarry stopped operating. Whether or not there was a direct causal connection, we assume that Stockman met the burden of production to show that the quarry would impact her livelihood.<sup>28</sup>

Much of the impact Stockman fears is from the “nuisance” factors that all the individual petitioners emphasize in their testimony, such as increased noise and dust from the quarry operations. In response, Magruder established that it has not received an NOV for excess dust emissions, or any other violation of environmental laws administered by DNR, since the 2008 hearing. Magruder will use dust suppression techniques to mitigate the dust leaving the quarry site. Noise levels are limited by federal law.<sup>29</sup> Also relevant, Magruder plans to initiate blasts only about thirty times per year, and for the quarry to operate only from 8:00 to 5:00 on weekdays. It will implement safeguards as outlined in the blast plan and its other procedures such that the possibility of damage to the sewer lines or the plant is extremely limited.

Magruder met its burden of persuasion that its operations at the proposed quarry site will not cause undue impairment of the health, safety or livelihood of the Stockmans.

Robert Zawislak

Robert Zawislak testified that he had past experience with an asphalt plant near his home that caused windborne dust and “grit” to migrate onto his property. He testified that his business was impacted when he had to redo several woodworking projects because the dust or grit

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<sup>28</sup> We do not accept Magruder’s argument that the Stockmans would experience no impact because they are leasing the property and are in negotiations to sell to Gary Prewitt. The value of the RV park is still at issue.

<sup>29</sup> Tr. at 620.

damaged the finish on the product. He failed to link this experience with the operation of the new quarry except for the assumption that there would be more dust from its operation.

Even if Zawislak met his burden of production, we agree with Magruder that it met its burden of persuasion for the same reasons discussed above.

Mike Atkisson

Atkisson testified about the effect that the proposed quarry might have had on his sales in the subdivision – that its very existence, without regard to factors such as noise and dust, might affect future sales. He testified that the development of his subdivision was going well until “the economy went south”, but that this was the same time that the quarry plans were in the news, and people asked him how the quarry would affect his subdivision. He stated:

I’ve never seen one help very much and most times people don’t come and I’ve never seen on a requirement list for someone to relocate that I want to be next to a quarry because I want the noise and dust and vibration and bringing asphalt in because I want to look at that every day.<sup>30</sup>

Atkisson admits that there could be other reasons he has been unable to sell property within the subdivision since 2008. He also admitted that he had no scientific evidence to present regarding any alleged impact that the quarry might have on his health, safety or livelihood.<sup>31</sup>

Even if Atkisson met his burden of production, we agree with Magruder that it met its burden of persuasion for the same reasons discussed above.

John Zawislak

John Zawislak testified, but added no information from which we could make findings of fact or even his speculation beyond his assertion that “accidents happen.”<sup>32</sup>

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<sup>30</sup> Tr. at 1160.

<sup>31</sup> Tr. at 1168.

<sup>32</sup> Tr. at 1177.

## Other Individual Parties

The Joint Sewer Board argues it has shown that the additional individual parties in the case who did not testify would also be impacted in that their health, safety or livelihood will be unduly impaired by the issuance of the permit. This argument is the same one made on behalf of all residents in the area – if something goes wrong, the results could be “catastrophic.”<sup>33</sup> We have already addressed this argument.

We do not make light of any of the parties’ concerns. The General Assembly has placed a heavy burden on petitioners by requiring competent and substantial scientific evidence on the record of impact on health, safety or livelihood. But the LRC must follow the law as it is written.

### Summary and Conditions that should be placed on Magruder’s Permit

The AHC, as the hearing officer for the LRC, finds that the Sewer Board met its burden of production as defined by § 444.773 and the LRC’s regulations. The individual petitioners did not. However, we also find that Magruder met its burden of persuasion that the expanded permit, if subjected to certain conditions, will not unduly impair the health, safety, or livelihood of the petitioners in this case. Therefore, we recommend that Magruder’s application for permit expansion be granted, subject to the following conditions:

1. Magruder must adhere to its blast plan, which is a part of this record as Exhibit App. 7.

Any significant alterations to the blast plan should be filed with the LRC and a copy provided to the Sewer Board. If smaller blasts, smaller holes, or lesser bench height is warranted because of concerns about safety or proximity to the sewer system, such “downward departures” should be allowed without notice.

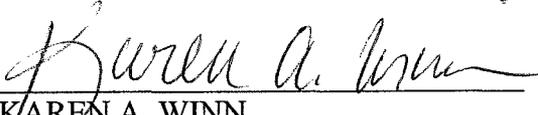
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<sup>33</sup> Joint Sewer Board Reply at p. 24.

2. The conditions set forth in the blast plan shall apply to the entire 205-acre mine plan.
3. Blasting shall be confined to weekdays between 8:00 a.m. and 5:00 p.m. Magruder shall notify sewer plant staff prior to each blast. The Sewer Board shall provide the name of the appropriate contact person to McDonald.
4. The elevation of the mine floor at the quarry shall be maintained above the sewer lines to reduce the possibility of ground shifting or block movement in the pipeline area from blasting.
5. Magruder shall not stockpile rock on or within 150 feet of the sewer line easement.
6. Trucks or other heavy equipment shall not travel over the sewer line easement. If that necessity arises, Magruder shall consult with the Sewer Board and the City of Osage Beach to engineer and build a safe crossing over the sewer lines.
7. Magruder shall employ the best available technology for dust suppression and control.
8. If the Sewer Board documents a correlation between blasting at the quarry site and disruption to the UV system, Magruder shall pay the cost of repairs and shall adjust its blasts to eliminate or minimize such disruption.

In addition, the LRC could consider whether to require Magruder to offer to engage in a cooperative endeavor with the City of Osage Beach to install circumferential strain gauges to monitor the stresses on the pipelines over time. If the City agrees to this measure, Magruder should bear the cost.

SO RECOMMENDED on June 27, 2013.

  
KAREN A. WINN  
Administrative Hearing Commission  
Hearing Officer for the Land  
Reclamation Commission

APPLICANT EXHIBITS

- App-2: Copy of 10 CSR 40-10
- App-3: Copy of Mo. Rev. Stat. Chapter 444
- App-4: Affidavit of Publication
- App-5: Copy of certified receipt and letter dated 5/11/07 to Miller Cty Comm'rs
- App-6: Copy of application and aerial photos
- App-7: Mine and Blast Plan Proposed Magruder Quarry w/ aerial photos
- App-8: Dr. Paul Worsey Expert Report
- App-9: Larry Mirabelli Expert Report
- App-10: Keith Henderson Expert Report
- App-18: History of noncompliance from 4/18/02 to present
- App-19: Graph
- App-20: Construction Report, Archer Engineers
- App-21: Worsey Publications
- App-22: Pipeline Response to Buried Explosive Detonations Volume I
- App-25: Aerial photo
- App-26: Blasting Projects, Donald Dressler, P.E.
- App-28: Map
- App-29: Graph
- App-30: Cert. copy of Phillip Davis application for blasting permit
- App-31: Photos of pipe
- App-32: Agreement for Contract Operations of Lake Ozark and Osage Beach Treatment Facilities
  
- App-33: MHTC plans for proposed state highway, Camden County
- App-34: Tables of Water Resources Alliance re: Bank A/Bank B hours
- App-35: Map
- App-36: Map of Hwy. 54 Blast Locations
- App-37: Hand-drawn map
- App-38: City of Osage Beach Blasting Permit Application
- App-39: Dressler Blasting/Vibration Support
- App-40: Copy of *Neis v. Bd. of County Comm'rs of Douglas County*
- App-41: Structure Response and Damage produced by Ground Vibration from Surface Mine Blasting

App-42: Report of Investigations/1994, Surface Mine Blasting Near Pressurized Transmission Pipelines

App-43: Missouri Blasting Safety Act

App-44: Missouri Blasting Safety Regulations

App-45: Vibra-Tech Event Report 8/22/08

App-46: Vibra-Tech Event Report 9/9/08

App-47: Vibra-Tech Event Report 9/11/08

App-48: Vibra-Tech Event Report 9/19/08

App-49: Sauls Seismic, Inc. – Report

App-51: Photos dated 10/27/08

App-52: Affidavit and Explosive Contractors Inc. Blast Reports

App-53: Photo of Wal-Mart and rock drill

App-54: Photo of power lines

App-55: Resume of Keith Henderson

App-56: Power Point presentation titled “Four uses of explosives”

App-58: Aerial photo

App-59: Lease

App-60: Certification of Administrative Record filed with AHC, filed 2/16/12

App-61: Deposition Designations

App-62: Supplemental Deposition Designation of Dressler

App-63: Different Supplemental Deposition Designation of Dressler

App-64: Additional pages from Dressler Deposition

App.-65: Second Supplemental Deposition Designation of Dressler

App-66: Deposition Designations of Worsey

#### RP EXHIBITS

RP-1: Request for Notice of Violations issued by MDNR to Magruder – Paul Dickerson

#### MP EXHIBITS

MP-1: City of Osage Beach Legend map

MP-2: Photos

MP-3: Trailer Life Directory, page titled Alaska The Last Frontier

MP-15: Tables of Project Manager/Source/NOEE, NOV, number

MP-16: Notice of Violation/Excess Emissions dated 5/6/03

MP-17: Settlement Agreement

MP-18: DNR Level II State Source Inspection Form dated 4/9/03  
MP-19: Handwritten note dated 5/16 suggesting \$4,000 settlement offer  
MP-20: Notice of Violation/Excess Emissions dated 4/12/04  
MP-21: Notice of Violation/Excess Emissions dated 4/2/04  
MP-22: Notice of Violation/Excess Emissions dated 4/13/04  
MP-23: Notice of Violation/Excess Emissions dated 4/2/04  
MP-24: Notice of Violation/Excess Emissions dated 4/2/04  
MP-25: Level II State Source Inspection Form dated 4/2/04  
MP-26: Notice of Violation/Excess Emissions dated 3/10/04  
MP-27: E-mail to Maher Jaafari from Benjamin Marshall dated 4/20/04  
MP-28: Report on Inspection of Magruder  
MP-29: Settlement Agreement  
MP-30: Letter to Steve Feeler from Dean McDonald dated 7/3/02  
MP-31: Notice of Violation/Excess Emissions dated 6/26/02  
MP-32: Notice of Violation/Excess Emissions dated 6/26/02  
MP-33: Level II State Source Inspection Form dated 6/6/02  
MP-34: Notice of Violation/Excess Emissions dated 2/3/05  
MP-34: DNR's recommendation to LRC, dated 7/13/07

#### BP EXHIBITS

BP-1: Various letters from LRC to different parties  
BP-2: Various letters to Director of LRC from different parties  
BP-3: DNR's recommendation to LRC, dated 7/13/07  
BP-8: US Geological Survey : Potential Environmental Impacts of Quarrying Stone in Karst  
BP-16: 3/31/05 letter to Nancy Viselli and John Chadd from DNR and 3/19/05 letter to Water Protection Program from Viselli and Chadd  
  
BP-18: Documents from Arrowhead Title, Inc.  
BP-22: Map  
BP-23: Documents from Dressler Consulting  
BP-24: Donald Dressler Vita  
BP-25: PowerPoint documents titled Expert Report Conclusions, Don Dressler  
BP-26: Alliance Water Resources Report of Operations Lake/Osage Beach  
BP-43: Missouri Blasting Safety Act  
BP-50: 4/23/08 letter to Nancy Viselli from Christopher Schwedtmann

BP-51: Aerial map

BP-53: Documents from Dressler Consulting

BP-54: Report of Investigations/1994, Surface Mine Blasting Near Pressurized Transmission Pipelines

BP-55: Document titled Structure Response Restrained Structures

BP-58: 8/8/08 letter to Sauls Seismic and Magruder from joint sewer board

BP-62: Affidavit and records from Kolb Grading LLC

BP-63: Certification of Records dated 10/12/12 of MHTC

BP-66: MODOT Utility Relocate for 347G, City of Osage Beach

BP-67: PowerPoint document titled Lake Ozark/Osage Beach Joint Sewer Treatment Plant, Protecting Water Quality at The Lake of the Ozarks

BP-68: Chain of Events dated 5/21/08

BP-74: Self Reporting Form For Wastewater Bypasses dated 1/27/11

BP-75: Chronology of Events

BP-76: Chain of Events Water Main Break West Hwy 54 by West Side Apartments & Mexicali Blues

BP-77: City of Osage Beach invoice dated 6/8/11 to Dave Kolb Grading

BP-81: Magruder Quarry Blasting Log 2008

BP-83: Dressler Acknowledgment of Instrument Receipt and Agreement dated 10/1/08

BP-84: Photos

BP-85: Photos

BP-104: 10/16/08 letter from Magruder

BP-124: Blasting Complaint – State Fire Marshal

BP-125: Blasting Complaint – State Fire Marshal

BP-126: Blasting Complaint – State Fire Marshal

BP-127: Blasting Complaint – State Fire Marshal

BP-128: Blasting Complaint – State Fire Marshal

BP-129: Blasting Complaint – State Fire Marshal

BP-152: Water Main Break Rates In the USA and Canada: A Comprehensive Study

BP-153: CV of David Dressler

BP-156: Affidavit of Thomas Powers and MODOT records

BP-158: CD with sticker “Dressler 36”

BP-159: Alliance Water Resources Report of Operations, Lake/Osage Beach

BP-164: CD Ozarks Plant, 10” Line (collapse)

BP-165: Motion for Order to Show Cause for Contempt filed in Miller County Cir. Ct.

BP-166: Miller County Order Staying Final Order in re: Expansion of Permit #0086

BP-167: Petition for Judicial Review in Lincoln County Cir. Ct.

BP-168: Deposition Designations