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ALABAMA COURT OF CIVIL APPEALS

OCTOBER TERM, 2019-2020

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Booker T. Gipson and LaTonya Gipson

v.

Alabama Department of Environmental Management
and Perry County Associates, LLC

Appeal from Montgomery Circuit Court
(CV-18-900481)

MOORE, Judge.

Booker T. Gipson and LaTonya Gipson appeal from a judgment of the Montgomery Circuit Court ("the trial court"), affirming an order of the Alabama Environmental Management Commission ("the AEMC") that concluded that an administrative

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action of the Alabama Department of Environmental Management ("ADEM") was supported by substantial evidence. We affirm the trial court's judgment.

Procedural History

On March 17, 2017, Esther Calhoun, Benjamin Eaton, Booker T. Gipson, LaTonya Gipson, Mary Leila Schaeffer, and Ellis Long ("the petitioners") filed a request for a hearing before the AEMC to contest an administrative action of ADEM dated February 10, 2017, approving the renewal and modification of Solid Waste Disposal Facility Permit 53-03, issued to Perry County Associates, LLC ("Perry County Associates"). The petitioners asserted that the permit allowed Perry County Associates to operate, modify, and expand the Arrowhead Landfill in Perry County, including the expansion of the Arrowhead Landfill into new tracts, without first complying with a number of ADEM's rules and regulations. The AEMC assigned the request to a hearing officer to conduct hearings and to make a recommendation to the AEMC regarding the matter.

Following the hearing, which was conducted over a number of days and included the presentation of testimony and exhibits by the petitioners, ADEM, and Perry County

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Associates, as an intervenor, the hearing officer issued his report on January 24, 2018. That report included the following pertinent findings of fact:

"1. Petitioner, LaTonya Gipson, lives across County Road 1 from the Arrowhead Landfill and Petitioner, Booker T. Gipson, frequents this location everyday in order to check on Ms. LaTonya Gipson's home.

".....

"11. [The] Arrowhead [Landfill] was initially permitted by ADEM in 2006 for the operation of a Municipal Solid Waste landfill. The permit allowed the landfill to receive municipal solid waste (garbage), construction/demolition waste and special waste that would be approved by ADEM.

".....

"13. In 2011, ADEM renewed the Perry County Associates, LLC permit without challenge to that Administrative action.

"14. In addition to renewing Permit 53-03, Perry County Associates, LLC seeks modification to allow it to raise the bottom elevation of the new [disposal] cells to avoid the cost of excavating the Selma chalk.

"15. The landfill is located in a geological formation known as the Selma chalk group consisting of two chalk layers, the Demopolis, at the surface, and the Mooreville, lying immediately underneath.

"16. The Selma chalk formation has very low permeability (10^{-8} cm/sec.) and extends four to over five hundred feet below the surface.

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"17. The Selma chalk is a confining unit, overlaying the Eutaw Aquifer[,] which is a source for drinking water in the area.

"18. There is a 40 to 50 foot thick clay formation between the Eutaw and Coker aquifers that acts as a lower confining unit to the Eutaw aquifer such that there is no interconnection between the two aquifers.

"19. At the surface, there are areas of weathered chalk at depths varying from zero feet to just over twenty (20) feet.

"20. There are no laboratory tests which indicate saturation of either the weathered or unweathered Selma chalk.

"21. Neither the weathered nor the unweathered Selma chalk act as an aquifer.

"22. There is no evidence that either the weathered or the unweathered Selma chalk is capable of full saturation except under extreme pressure in a controlled laboratory environment.

"23. Shallow monitoring wells were drilled in 2007 and 2012; they were dry when drilled and remained so for from two months to well in excess of a year.

"24. In some instances, the original, pre-construction topography lay beneath the water levels shown in wells drilled at those very locations. Petitioners have provided no evidence of the existence of lakes or wetland areas in those locations.

"25. Sixty acres lying between multiple shallow wells have been excavated below the water levels shown to exist in the shallow wells to construct the landfill disposal cells. No groundwater appeared in

the excavated areas and no saturated soils were excavated.

"26. Petitioners have failed to show, by a preponderance of the evidence, that a zone of saturation extends for any significant distance outside the radius of the bore hole for any of the shallow wells on the Arrowhead property.

"27. Petitioners have failed to show, by a preponderance of the evidence, that there is any interconnection between the shallow wells.

"28. Petitioners have failed to show, by a preponderance of the evidence, that there is any communication between any of the shallow wells.

"29. Petitioners have failed to show, by a preponderance of the evidence, that there exists a potentiometric surface or water table that can be mapped by reference to the elevation of water found in the shallow wells.

"30. Evaluating all of the testimony, evidence and the demeanor of the witnesses, the Petitioners have failed to show, by a preponderance of the evidence, that there is a continuous zone of saturation within the weathered Selma chalk.

"31. While the deep monitoring wells in the Eutaw [Aquifer] are separated by the chalk formation, they serve as the highest standard (drinking water) to compare any statistically significant increase found in the shallow wells.

"32. Thus, the first zone of saturation is in the Eutaw aquifer, more than four hundred feet below the bottom elevation of the bottom liner of the landfill and it has been adequately characterized pursuant to applicable ADEM rules and regulations."

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Additionally, the hearing officer made the following pertinent conclusions of law:

"2. ... LaTonya Gipson and Booker T. Gipson have proven a threat of injury from the landfill that could be redressed by a favorable decision in this matter. Petitioners LaTonya Gipson and Booker Gipson are aggrieved parties and are appropriate parties to challenge this permit before the Commission under ADEM Admin. Code R. 335-2-1-.03.
...

"3. Perry County Associates, LLC and ADEM properly established the location of the first saturated zone and so they properly established the location of groundwater for the site, which is at least 400 feet below the surface in the Eutaw aquifer. See ADEM Admin. Code R. 335-13-1-.03(58), groundwater is water below the land surface in the zone of saturation. ... ADEM Admin. Code R. 335-13-1-.03(121) defining saturated zone ... as 'that part of the earth's crust in which all voids are filled with water.'

"4. The permit complies with all of the groundwater standards in ADEM Admin. Code div. 13. Petitioners' Alleged Errors A through G are without merit."

(Emphasis in original.) The hearing officer concluded that the petitioners other than the Gipsons had failed to prove an actual or threatened injury that is caused by the current permitting of the Arrowhead Landfill and that they were not aggrieved parties.

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Having made his findings of fact and conclusions of law, the hearing officer informed the AEMC that ADEM's administrative action renewing and modifying Solid Waste Disposal Facility Permit 53-03 on February 10, 2017, complied with applicable law, and the hearing officer recommended that that action be approved. On February 16, 2018, the AEMC entered an order adopting the report of the hearing officer; it found that ADEM's administrative action renewing and modifying Solid Waste Disposal Facility Permit 53-03 on February 10, 2017, to Perry County Associates complied with applicable law, and it approved the permit renewal and modification.

The Gipsons filed their notice of appeal from the final action of ADEM and the order of the AEMC on March 15, 2018. On May 10, 2018, the Gipsons filed in the trial court a brief outlining their arguments and requesting oral argument. ADEM submitted its brief in response on May 31, 2018. Perry County Associates also submitted its brief to the trial court on May 31, 2018. The Gipsons filed a reply brief in the trial court on June 13, 2018. On February 27, 2019, the trial court set

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the case for oral arguments on March 1, 2019.¹ The Gipsons submitted a proposed order, and ADEM and Perry County Associates submitted a joint proposed order. ADEM and Perry County Associates filed an objection and point of clarification in response to the proposed order submitted by the Gipsons. On March 12, 2019, the trial court entered a final judgment adopting the proposed order submitted by ADEM and Perry County Associates; the trial court found that substantial evidence existed to support the decision of the AEMC and affirmed that decision. The Gipsons timely filed their notice of appeal to this court on April 23, 2019.

Facts

A number of factual findings made by the hearing officer are undisputed by the parties. The undisputed evidence indicates, among other things, that LaTonya Gipson lives across County Road 1 from the Arrowhead Landfill in Uniontown in Perry County; that her father, Booker T. Gipson, frequents her home each day; that the Arrowhead Landfill was initially permitted by ADEM in 2006 for the operation of a municipal solid-waste landfill by Perry County Associates; that, in

¹We note that the record does not contain a transcript of the oral arguments conducted before the trial court.

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2011, Perry County Associates sought a renewal and modification of the permit to allow it to raise the bottom elevation of new disposal cells; and that ADEM approved the requested renewal and modification. The Gipsons challenge on appeal a number of the findings made by the hearing officer that were adopted by the AEMC and the trial court. We limit our recitation of the evidence to that related to the arguments raised on appeal by the Gipsons.

James Mark Tanner, a geologist, testified on behalf of Perry County Associates that he had reviewed documents applicable to the geology and hydrogeology of the Arrowhead Landfill site in preparation for his testimony before the hearing officer. Tanner testified that, at the surface, the Demopolis chalk formation and the underlying Mooreville chalk formation are both a part of the Selma chalk formation. He stated that the Selma chalk formation, which is primarily chalk, acts as a confining unit for the underlying Eutaw formation, which is an aquifer consisting of a sandy unit with some clays and a source of drinking water. According to Tanner, beneath the Eutaw aquifer is a 40- to 50-foot-thick clay unit that confines an underlying aquifer, the Gordo

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formation, and that beneath the Gordo formation is another aquifer unit, the Coker formation. Tanner stated that a confining layer or a confining bed is a unit of low permeability that acts as an aquitard and retards the movement of water through that unit.

Dr. Lauren Ross, a consulting engineer, testified on behalf of the Gipsons as an expert witness. Dr. Ross testified that groundwater² exists in saturated and unsaturated conditions; that unsaturated means that not all the void space in the soil material is filled such that there are pockets of air within the soil; and that saturated means that all the voids are filled with fluid. Dr. Ross explained that the easiest way to determine the location of groundwater is by the installation of a groundwater-monitoring well, which monitors water levels and/or the presence of contamination in the groundwater. She testified that, if you place a well into an unsaturated zone, the water will not enter the well because

²We note that the determination of this appeal turns on the definition of "groundwater" in accordance with ADEM's rules and regulations and that, with regard to Dr. Ross's testimony, it is apparent that she was speaking in terms of the lay definition of "groundwater," i.e., water in the ground, rather than in terms of the definition of that term as defined by ADEM's rules and regulations.

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it is held in the pore space under tension. According to Dr. Ross, saturated conditions means that all the affected void space in the subsurface is full of water or liquid.

Dr. Ross testified that 13 groundwater-monitoring wells had been installed at the Arrowhead Landfill site, that Wells 1 through 6 represented the deep wells, the depth of which were approximately 500 feet below the ground surface, and that Wells 12 through 18 represented the shallow wells, the depth of which ranged between approximately 25 and 30 feet below the ground surface. Dr. Ross testified that, based on her review of piezometers and wells that had been installed in approximately 2001 at the Arrowhead Landfill site, saturated conditions had been present in the Selma chalk formation to a depth of between 11 and 20.5 feet. She stated that saturation tests had been performed during the construction of the wells in 2001, which, she said, had indicated saturation percentages of 55.8% and 61.1% at different locations. Dr. Ross testified, however, that, in order to be saturated, the saturation rate would have to be 100%.

Mark Preddy, a geologist employed by Bunnell-Lammons Engineering, testified on behalf of Perry County Associates

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that his company had been approached to assist with the development of the Arrowhead Landfill in 2007 and that his company installed the initial groundwater-monitoring wells. Preddy testified that he had set up, supervised, and managed the installation of the wells. According to Preddy, JJ&G, a company that had prepared a hydrogeologic assessment of the Arrowhead Landfill site in 2005, had determined in its report that the first saturated zone at the site was the groundwater in the Eutaw formation. Preddy stated that, after his company drilled its own monitoring wells at the landfill site, he had concurred in that determination. He testified that he had been present for the drilling of the wells, that the shallow wells had been dry, and that the soils coming out of the ground from the shallow wells had been in an unsaturated state. With regard to the deep wells, Preddy testified that they had hit the sand formation below the Selma chalk formation when they drilled and that the sand formation had had water in it like they had anticipated.

Despite Preddy's testimony that the shallow wells had been dry at the time of drilling, Dr. Ross testified that she had reviewed certain documents indicating, in her opinion,

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that a shallow saturated zone monitored by Wells 12 through 18 existed because, she said, in each case, the data revealed that, once water was detected in a well, it was consistently detected over a period of multiple years. She testified that there are weathered and unweathered areas in the Selma chalk formation at the Arrowhead Landfill site. Dr. Ross explained that weathered means that some of the basic characteristics of the material have been changed through a process, or that the original consolidated rock has been altered by forces such as rainfall, and that unweathered means that the characteristics of the material are represented by the bulk characteristics of the formation. She stated that she believed that there was some weathered material located near the surface at the Arrowhead Landfill site.

Dr. Ross testified that, according to the environmental-monitoring plan for the Arrowhead Landfill site, Wells 12, 13, and 14 contained water at a depth higher than the depth of the proposed liners of cells that would be adjacent to those wells, which, she stated, indicates that there will be a saturated zone along the side of the liner where the wells are located. According to Dr. Ross, groundwater was consistently

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found through a significant depth in each of those wells according to boring logs dated March 8, 2017, and, she said, she did not think that the wells were acting merely as a sump, or an area where water would accumulate, because the characteristics of the water found in the wells indicate that the water had been in contact with the ground for a significant amount of time and was not just rainwater that had leaked into the top of the wells through cracks in the wells or the casings of the wells.

Dr. Ross also testified that a field-data sheet from 2017 indicated that Well 14 had been purged, which involves pulling some volume of the water out of the well in preparation for sampling. She testified that purging is performed because water that has been sitting in the well might not accurately reflect the characteristics of the water in the surrounding formation; according to Dr. Ross, purging is intended to pull water into the well column until those conditions stabilize such that there is no mixing of formation water and water with characteristics that might have been changed because it has been sitting in a PVC well pipe open to the air. According to Dr. Ross, when Well 14 began to be purged, the depth to the water stabilized while they continued to purge the well. Dr.

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Ross stated that the water that would cause that stabilization must have been coming from the saturated zone because there was nowhere else for the water to have come from. She also testified that she knew it was water from a saturated zone because the water was flowing into the well. She testified that, if water did not come pouring into the sides of the existing landfill cells during construction, despite their placement in a saturated zone, the reason would be because the Demopolis chalk formation is probably not very permeable and therefore the saturated zone has a low transmissivity such that water moves through it very slowly. Dr. Ross testified that the low transmissivity would account for the original dry condition of the wells and the subsequent consistent presence of water in the wells.

Dr. Ross testified that Wells 1 and 5 are background wells, that they are north of the rest of the wells, and that they were not completed in the same zone as the shallow monitoring wells. She testified that the specific conductance, the total dissolved solids, and some of the other metals that had been measured in both the shallow wells and the deep wells indicated differences between the two zones they were located in. According to Dr. Ross, the wells that

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were constructed in the shallow zone were dry for a significant period after construction, and, she said, although she would expect to see groundwater migrate through the side of a landfill cell wall and into the construction space where the bottom of the excavated pit is lower than the saturated groundwater on the sides of the pit, she believed that, in this case, the water in the shallow zone moved very slowly and that the process of excavation could have sealed the sides of the landfill temporarily. She testified that the length of time it would delay water from seeping into the pit depends on a number of factors, but, she said, in the present case, it took anywhere from over 2 months to over 600 days for water to appear in the shallow wells, according to the relevant data.

Dr. Ross admitted that only the parts of the weathered chalk where all the voids are filled with water would meet ADEM's definition of the first saturated zone and that the entire weathered zone of the Selma chalk formation at the landfill site did not qualify as such. She testified, however, that the monitoring-well data is clear that it could be that, at a depth of 10 to almost 20 feet, the soil being monitored in the weathered zone is saturated. Dr. Ross testified that the question whether an area is saturated is

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different than the question whether the area can serve as an aquifer, which requires saturation with groundwater that is significant enough to act as a municipal or domestic water supply. She opined that the shallow zone of saturation that she believes exists in the Selma chalk formation at the landfill site is connected between the shallow wells.

Preddy testified regarding the well installations in 2007. He testified that, for the drilling of the shallow wells, an auger drill was used as part of a dry technique of drilling in which the augers spin in the ground and lift cuttings out of the bore hole. Conversely, Preddy testified that, for the deep wells, they used a rotary-wash drill method, whereby water and a little clay is added to lift cuttings from the bore hole. He testified that because the bore hole of the deep wells would have water in them and might still have clay in the formation that was added during the construction of the wells, the deep wells are developed, which requires purging water from the wells to remove the fine clay and restore the natural hydraulic conductivity of the formation. According to Preddy, there was no water to purge in the shallow wells at the time of excavation. He testified that he had not encountered anything he believed to be a

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saturated zone in drilling any of the initial shallow wells. Preddy testified further that none of the samples from the shallow wells had been wet or fully saturated. He stated that additional wells had been drilled in September or October 2012 and that he had reviewed and logged samples from the Selma chalk formation at that time. Preddy stated that a dry-drilling method had been used on those shallow wells, which had created more fracturing into the formation; that the dry wells had been marked as dry initially and as dry after 24 hours; and that everything had appeared to be dry after looking at the soil samples.

Preddy testified that an exhibit reflecting the water levels in Wells 12-18 from June 6, 2007, through March 8, 2017, indicated that, as to Well 12, water had come into the well at some time between 344 and 530 days after drilling and that it had been dry before then. He stated that the document showed very long periods of the wells being dry, which, he said, indicated it was taking a very long time for any water to enter the wells. He testified that documentation indicating that water had entered the wells does not necessarily mean that it was groundwater but that it could mean that, somehow, condensation or surface-water infiltration

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had entered the bore holes, and, he said, once water enters the bore hole, it cannot get out unless it evaporates. According to Preddy, on the bottom of the shallow-well construction, there is a six-inch stainless steel sump with no screen slits such that water would accumulate in the sump. He stated that, above the sump, there is a 10-foot section that is screened and allows water to enter the wells. Preddy stated that details for the construction of Well 13 indicated that water was sitting down in the sump, that no water was entering the formation, and, thus, he said, that well was considered to be dry. He testified that the most recent sampling of the shallow wells indicated that, when there was actual water in the wells that could be measured, the water level in each of the wells was going up or down in a similar fashion, except for certain locations that were opposed to the trend of the other wells. Preddy stated that that data indicated that water levels were rising and lowering based on seasonal periods. He stated that, usually, in March it is wetter and easier for water to accumulate in the bore holes in the cooler temperatures than it is in summer, when it is hotter and drier and it can be anticipated that the water levels will go down.

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Preddy testified that, with regard to the leveling off of Well 14 during purging, the shallow wells do not allow water to move in them very easily, so, he said, if water enters the bore holes, the wells are going to hold water there as a sump, which, he said, is why you see the shallow wells remain dry for long periods. He stated that, eventually, water enters the bore hole, most likely from a surface-water source making its way through microfractures in the soil, caused by roots or burrows from drilling, and travels down around the screen so that it holds water, again acting as a sump. He stated that he believed that the shallow groundwater-monitoring wells are acting as sumps.

Daniel Bunnell, an engineer and the president of Bunnell-Lammons Engineering, testified as an expert for Perry County Associates. He testified that he had been contracted to perform construction quality assurance, monitoring, testing, and documentation for the initial cell and infrastructure construction at the Arrowhead Landfill site. He testified that, in the mass excavation of the first cells that had been constructed at the landfill site, there was no indication in any of the photographs that there was any sort of zone of saturation in the soil adjacent to the cells that were

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excavated. He testified that there was nothing he saw during the inspection process that indicated that there was groundwater entering the cell construction area and that he had not observed any groundwater and that the existence of groundwater had not been reported to him by his technician during the course of the excavation of 60 acres of cell construction area at the landfill site. He stated that none of the areas that were excavated had been below the groundwater table and that the excavated material had been blocky, very hard, and desiccated, rather than saturated or extremely wet. He testified that, in the areas that had been excavated, he believed the vast majority of the weathered portion of the Selma chalk formation had been removed.

Whit Slagle, chief of the hydrogeology section in the groundwater branch of ADEM and a professional hydrogeologist, testified that the weathered zone of the Arrowhead Landfill had been removed and that, although there is some water in the ground in the weathered zone of the Selma chalk formation from place to place, when the initial piezometers had been installed to characterize the weathered zone of the Selma chalk formation and the wells and pits had been installed, some of the wells had been dry and some had not. Slagle

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stated that that had led him to believe that there is water in the ground at certain locations within the weathered zone but not in others. He testified that he had not found a continuous zone of saturation at a depth shallower than the Eutaw aquifer across the Arrowhead Landfill site and that the first zone of saturation is the Eutaw aquifer beneath the Selma chalk formation.

Eric Sanderson, the chief of the solid-waste branch of ADEM's land division, testified on behalf of ADEM that his branch was responsible for, among other things, the permitting and modifications of landfills and the review of solid-waste-management plans. He testified that Perry County Associates had established the uppermost aquifer, the groundwater elevation, the direction of groundwater flow, and the location of the first saturated zone in its permit application. He testified that, although Well 14 had stabilized during the purging process on March 8, 2017, there had been a number of dry wells, although others had been wet, which shows that there are dry spots across the site that are separated by a foot and that there was not a continuous saturated zone at a depth shallower than the Eutaw aquifer across the site. Sanderson agreed that, if Well 14 had stabilized during

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purging, there would have to be a saturated area, but, he said, whether that had resulted from a vertical or horizontal distribution remained to be seen. Sanderson stated that the weathered zone of the Selma chalk formation is discontinuous and that a variable thickness has been demonstrated therein. He testified that, in lay terms, there is "groundwater" around the shallow wells but it is not continuous and not connected uniformly across the site.

Standard of Review

"In reviewing the determination of the [AEMC], this court applies the same standard of review as the trial court. Dawson v. Alabama Dep't of Env'tl. Management, 529 So. 2d 1012 (Ala. Civ. App. 1988), cert. denied, 529 So. 2d 1015 (Ala. 1988), overruled on other grounds by Ex parte Fowl River Protective Ass'n, 572 So. 2d 446 (Ala. 1990)." Alabama Dep't of Env'tl. Mgmt. v. Kuqlar, 668 So. 2d 809, 811-12 (Ala. Civ. App. 1995). Section 41-22-20(k), Ala. Code 1975, outlines the applicable standard of review:

"Except where judicial review is by trial de novo, the agency order shall be taken as prima facie just and reasonable and the court shall not substitute its judgment for that of the agency as to the weight of the evidence on questions of fact, except where otherwise authorized by statute. The court may affirm the agency action or remand the case to the

agency for taking additional testimony and evidence or for further proceedings. The court may reverse or modify the decision or grant other appropriate relief from the agency action, equitable or legal, including declaratory relief, if the court finds that the agency action is due to be set aside or modified under standards set forth in appeal or review statutes applicable to that agency or if substantial rights of the petitioner have been prejudiced because the agency action is any one or more of the following:

"(1) In violation of constitutional or statutory provisions;

"(2) In excess of the statutory authority of the agency;

"(3) In violation of any pertinent agency rule;

"(4) Made upon unlawful procedure;

"(5) Affected by other error of law;

"(6) Clearly erroneous in view of the reliable, probative, and substantial evidence on the whole record; or

"(7) Unreasonable, arbitrary, or capricious, or characterized by an abuse of discretion or a clearly unwarranted exercise of discretion."

This court has held that

"'a presumption of correctness attaches to a decision of an administrative agency due to its recognized expertise in a specific area.' Alabama Dep't of Env'tl. Management v. Wright Bros. Constr. Co., 604 So. 2d 429, 432 (Ala. Civ. App. 1992) (quoting Shell Offshore, Inc. v. Baldwin County

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Comm'n, 570 So. 2d 698, 699 (Ala. Civ. App. 1990)).
..."

Alabama Dep't of Env'tl. Mgmt. v. Kuglar, 668 So. 2d at 811.

Analysis

The Gipsons argue on appeal that the AEMC's finding that the first saturated zone at the Arrowhead Landfill site is the Eutaw formation is affected by an erroneous interpretation of the term "zone of saturation" and is clearly erroneous in view of the evidence presented. Specifically, the Gipsons assert that the AEMC arbitrarily and capriciously construed the term "zone of saturation" as including additional criteria that is not found in ADEM's rules and regulations and that the AEMC's construction of that term unreasonably imposed an additional evidentiary burden that led to an erroneous conclusion in the present case.

Rule 335-13-1-.03(59), Ala. Admin. Code (ADEM), defines "groundwater" as "water below the land surface in the zone of saturation," and Rule 335-13-1-.03(123) defines "saturated zone" as "that part of the earth's crust in which all voids are filled with water." The Gipsons assert on appeal that the AEMC's findings adopted from the hearing officer's report erroneously require "interconnection" or "communication"

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between the shallow groundwater-monitoring wells and proof of a "continuous zone of saturation," despite the lack of those requirements in ADEM's rules and regulations. The Gipsons also argue that the AEMC erred in implicitly requiring that a zone of saturation extend "for any significant distance outside the radius of the bore hole for any of the shallow wells on the Arrowhead property" because, they say, ADEM's rules and regulations do not define "what a 'significant distance outside the radius' of a bore hole would comprise nor how to measure that distance." Appellants' brief, p. 24.

Rule 335-13-4-.11(2), Ala. Admin. Code (ADEM), which speaks to hydrogeology standards for disposal facilities, provides:

"(a) For purposes of designing the bottom elevation of the cell or liner system, the applicant shall obtain a general estimate of ground water elevation. Such estimate shall be obtained by a measurement of ground water levels taken, at the option of the applicant, either during the calendar months of February, March and April, or alternatively, a measurement taken during the remaining months of the year. Having obtained a measurement during one of these described periods, the applicant shall design the facility so that the bottom elevation of the cell for unlined landfill units and the bottom elevation of the liner system for lined landfill units shall be a minimum of five feet (if measured during February, March or April) or ten feet (if measured during the remaining nine months) above the estimated ground water level

beneath the landfill unit. Nothing herein shall prevent [ADEM] from requiring an additional buffer as it may deem appropriate with respect to a particular site.

"(b) When the geological and hydrological data so indicate, [ADEM] may specify greater separation distances, a liner(s), or a leachate collection system, or combination of the above to protect the groundwater.

"(c) When the geological and hydrological data so indicate, [ADEM] may allow engineering controls to remove, divert, drain, or otherwise modify zones of saturation above the uppermost aquifer."

Rule 335-13-4-.14, Ala. Admin. Code (ADEM), provides, in pertinent part:

"(1) Groundwater. Groundwater resources in the vicinity of the landfill unit shall be determined as a basis for facility design, groundwater protection, and groundwater monitoring required under 335-13-4-.27.

"(a) The depth to the groundwater and the direction of flow shall be established during the hydrogeological evaluation.

"(b) The groundwater in the first saturated zone below the landfill unit shall be evaluated as follows:

"1. A minimum of one hydraulically upgradient monitoring well for background data and two hydraulically downgradient monitoring wells shall be required.

"2. The location and design of the monitoring wells shall be

approved by [ADEM] prior to installation and the upgradient well shall be located so as not to be affected by the landfill unit.

"3. The monitoring wells shall be installed well in advance of projected facility opening so as to provide an undisputed background water quality sample from each well. Background water quality shall be established using the sampling and analysis procedures described in 335-13-4-.27.

"4. Additional monitoring wells above the minimum may be required by [ADEM] based on site hydrology, geology, topographical features and waste characteristics.

"5. Groundwater monitoring wells shall be designed and constructed as described in 335-13-4-.27.

"(c) The groundwater sampling and analysis plan shall be prepared in accordance with 335-13-4-.27."

Rule 335-13-4-.27, Ala. Admin. Code (ADEM), presents the "requirements for groundwater monitoring and corrective action at," among others, municipal solid-waste landfills, which includes the Arrowhead Landfill, and provides, in pertinent part:

"(2) Groundwater Monitoring Requirements.

"(a) A groundwater monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the first saturated zone (as defined in 335-13-1-.03[,]) that:

"1. Represent the quality of background groundwater that has not been affected by leakage from a unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

"(i) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; or

"(ii) Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and

"2. Represent the quality of groundwater passing the relevant point of compliance specified by [ADEM] under subparagraph (a)3. of this paragraph.

" (i) T h e
downgradient monitoring
system must be
installed at the
relevant point of
compliance specified by
[A D E M] u n d e r
subparagraph (a)3. of
this paragraph that
ensures detection of
g r o u n d w a t e r
contamination in the
first saturated zone.

"(ii) When physical
obstacles preclude
installation of
groundwater monitoring
wells at the relevant
point of compliance at
existing units, the
d o w n - g r a d i e n t
monitoring system may
be installed at the
closest practicable
distance hydraulically
down-gradient from the
relevant point of
compliance specified by
[A D E M] u n d e r
subparagraph (a)3. of
this paragraph that
ensures detection of
g r o u n d w a t e r
contamination in the
uppermost aquifer.

"3. The relevant point of
compliance shall be no more than
150 meters (492 feet) from the
waste management unit boundary
and shall be located on land
owned by the owner of the

landfill unit. In determining the relevant point of compliance, the following factors shall be considered, at a minimum:

" (i) T h e
h y d r o g e o l o g i c
characteristics of the
f a c i l i t y a n d
surrounding land;

"(ii) The volume
and physical and
c h e m i c a l
characteristics of the
leachate;

" (i i i) T h e
quantity, quality, and
d i r e c t i o n o f
groundwater flow;

"(iv) The proximity
and withdrawal rate of
the groundwater users;

" (v) T h e
availability of
alternative drinking
water supplies;

"(vi) The existing
quality of the
groundwater, including
other sources of
contamination and their
cumulative impacts on
the groundwater and
whether groundwater is
currently used or
reasonably expected to
be used for drinking
water;

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"(vii) Public health, safety, and welfare effects; and

"(viii) Practicable capability of the owner or operator."

Rule 335-13-1-.03(75) provides that a "Landfill (LF) Unit" shall include, among other things, a "MSWLF" unit. Rule 335-13-1-.03(88) defines a "municipal solid waste landfill (MSWLF) unit," in pertinent part, as "a discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment injection well, or waste pile." It further provides that "[a] MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion." Rule 335-13-1-.03(88). Thus, when Rules 335-13-4-.11(2) and 335-13-4-.14 speak to the groundwater in the first saturated zone beneath the landfill unit, they are referring to that zone underneath the entire area of land comprising the landfill area or landfill expansion rather than any single cell.

Slagle testified that what is commonly referred to as the "first zone of saturation," which is that zone where 100% of the pore space is saturated, is represented on a potentiometric map showing potentiometric surface indicating

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lines of equal elevations, or sea level below the ground, where one might expect to intercept what is commonly called the "water table." He stated that a potentiometric map shows a saturated zone that extends over a very large portion of land where you would be able to go out to any portion of the land and drill down and expect to intercept the top of the water table at that mapped contour. According to Slagle, locating the first extensive zone of saturation is important because, if pollutants are introduced at the surface or slightly below the subsurface, they migrate downward until they find the water table and they are then transported downgradient in the water. He testified that there is some water in the ground in the weathered zone of the Selma chalk formation at the landfill site but that it is discontinuous across the site. Slagle stated that the purpose of determining the first saturated zone as a continuous surface extending for a substantial distance, with regard to the landfill site, is to protect that zone from pollutants that might be released into that zone and that, if a saturated zone is not continuous, any pollutant that might otherwise be released is going to stay where it is.

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"This court and the trial court must give substantial deference to an agency's interpretation of its rules and regulations. Personnel Bd. of Jefferson County v. Bailey, 475 So. 2d 863 (Ala. Civ. App. 1985).' Mobile County Pers. Bd. v. Tillman, 751 So. 2d 517, 518 (Ala. Civ. App. 1999). 'It is well settled that "an agency's interpretation of its own regulation must stand if it is reasonable, even though it may not appear as reasonable as some other interpretation." Ferlisi v. Alabama Medicaid Agency, 481 So. 2d 400, 403 (Ala. Civ. App. 1985).' State Pers. Bd. v. Wallace, 682 So. 2d 1357, 1359 (Ala. Civ. App. 1996). An agency's interpretation of its own policy is controlling unless it is plainly erroneous. Brunson Constr. & Envtl. Servs., Inc. v. City of Prichard, 664 So. 2d 885, 890 (Ala. 1995). See also Peacock v. Houston County Bd. of Educ., 653 So. 2d 308, 309 (Ala. Civ. App. 1994)."

Ex parte Board of Sch. Comm'rs of Mobile Cty., 824 So. 2d 759, 761 (Ala. 2001).

Slagle's testimony appears to be consistent with Rule 335-13-4-.27, which speaks to the installation of groundwater-monitoring systems installed at different locations sufficient to yield groundwater samples from the first saturated zone and the detection of groundwater contamination in the first saturated zone. Accordingly, we conclude that, insofar as the AEMC, via its adoption of the hearing officer's report, required a showing of interconnectedness and communication amongst the wells, that requirement was not unreasonable, arbitrary, or capricious, as argued by the Gipsons on appeal.

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The Gipsons also argue on appeal, however, that, even if ADEM's rules and regulations require such interconnectedness to show a zone of saturation, the AEMC erred in concluding that the Gipsons had not met their burden of proving the same in light of the evidence presented before the hearing officer. They assert that, "[b]y finding that [the Gipsons] failed to show that the zone of saturation extended a significant distance away from each of the wells, the [AEMC] implicitly acknowledged that there was at least a zone of saturation at each of the groundwater monitoring wells." Appellants' brief, p. 29. They also assert that testimony was presented by Tanner indicating that water would appear in the groundwater-monitoring wells when the surrounding area was fully saturated. The Gipsons also challenge the AEMC's adopted finding that "[t]here is no evidence that either the weathered or the unweathered Selma Chalk is capable of full saturation except under extreme pressure in a controlled laboratory environment," because, they assert, there is no evidentiary support for that conclusion. First, we note that Tanner testified that, if a well is placed in an unconfined formation, water would appear in the well "[w]herever the water occurs in the formation that is fully saturated." When

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asked whether he would expect that, for water to appear in a well, you would have saturated conditions in the formation, Tanner responded: "Normally, but not in all cases." Tanner stated that he did not believe that there is a saturated zone in the weathered portion of the Selma chalk formation at the landfill site. He stated that, in his opinion, to be included in the definition of a "saturated zone," "there would have to be some extent of saturation." Tanner also testified that, in his experience in having samples from the Selma chalk formation tested in a lab, it is "very, very, very difficult to fully saturate a sample from the Selma Chalk" and that the permeability is so low that it is very hard to achieve in the lab.

The Gipsons assert that evidence was presented indicating that the shallow groundwater-monitoring wells at the Arrowhead Landfill site produce water and that there is nowhere else the groundwater could be coming from except a saturated area in the Selma chalk formation. They assert also that Slagle acknowledged that the presence of water in the shallow wells reflected the presence of a saturated zone next to the wells. We consider the following evidence, which was presented with regard to the existence of a saturated zone at the Arrowhead

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Landfill site, in considering the question whether the Gipsons proved the existence of a continuous saturated zone at the Arrowhead Landfill site.

Dr. Ross, the Gipsons' expert witness, testified that, as Well 14 was being purged, the depth to water stabilized at 7.68 feet, which is about five feet below the ground surface. She testified that the depth stabilized while the well continued to be purged and that the water that would have caused the stabilization must have been coming from the saturated zone because it was flowing into the well. Tanner agreed that he had testified at his deposition that there could be water adjacent to Well 14. When questioned regarding why the water levels had stabilized in that well during purging, Tanner testified that the water would have to be coming from somewhere and that, if it was not coming from the surrounding subsurface, he was not sure where it could be coming from.

During Slagle's testimony, when Slagle was asked whether a well that was stabilizing during a purging process would indicate that "there was actually a saturated area next to the well," he answered that it would indicate that there was a saturated area "[s]omewhere next to the well of unknown

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horizontal extent." Slagle clarified in response to questioning by the hearing officer that, in layman's terms, there is "groundwater" around the shallow wells, but, he said, it is not continuous or connected such that there is any movement of pollutants across the property in any uniform extent that could be predicted. Thus, according to Slagle, the "groundwater" detected around the shallow wells did not meet ADEM's definition of "groundwater" found in Rule 335-13-1-.03(59). Sanderson also testified that the fact that Well 14 stabilized during purging meant that some water is being produced from that well and that, while there must be some saturated area around that well, the extent of that saturation is undetermined. Bunnell testified that, when the well was purged and it stabilized, he believed that it was the result of stormwater that had infiltrated that area, collected in the sand, and then built up in the well based on his observation of approximately 60 acres of mass excavation with no indication of groundwater.

Dr. Ross testified that, in her opinion, there is a shallow saturated zone monitored by Wells 12 through 18, which are the shallow wells at the site, because, she said, in each case, once water is detected in a well, it is consistently

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detected over periods of multiple years. When asked her opinion of why water did not pour out of the sides of the cells during construction of the existing landfill cells, Dr. Ross stated that, in her opinion, the weathered Demopolis chalk formation is probably not very permeable and the saturated zone has a low transmissivity. She testified also that she believed that the shallow wells were originally dry because, in addition to the low transmissivity of the saturated zone, according to the reports, the shallow wells were drilled using a rotary-construction method, which, she said, would seal up any cracks or openings, and that, if clay was added to the drilling fluid to help return the cuttings to the surface, that clay could have moved out into the cracks and sealed them before water pressure broke through the bore hole and entered the well over time. We note, however, that, according to the testimony of Preddy, who installed the initial groundwater-monitoring wells, rotary drilling was not used on the shallow wells. Rather, according to Preddy, the shallow wells were drilled using an auger drill, which is a dry technique of drilling in which augers spin in the ground and cuttings are lifted out of the bore hole. Thus, the hearing officer and the AEMC could have discounted Dr. Ross's

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opinion regarding the original dry condition of the shallow wells. Additionally, Dr. Ross admitted that, although test results revealed that a saturation percentage from boring P-1 was 55.8% and a saturation percentage from boring P-3 was 61.1%, those numbers would have had to have been 100% for the sample to be considered saturated. She admitted also that the entire weathered zone of the Selma chalk formation at the landfill site was not a saturated zone.

Dr. Ross testified that one exhibit that was presented, which shows whether the direction of change in water elevations in the deep wells are similar to or different than the consistency of those directions in the shallow wells, indicated that the potentiometric surface levels in the shallow wells were going up or down together between monitoring events. Dr. Ross stated that those levels varied in a way similar to those differences in the deep wells, although, she said, there were certain wells that were exceptions to those trends. Dr. Ross testified that that data suggests that the shallow wells are all monitoring a similar saturated zone. According to Dr. Ross, another exhibit presented that compared the relative water-level differences in each of the wells on March 8, 2017, expressed that the

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relative water elevations in the shallow wells stayed the same over most of the monitoring events and that there was a seasonal consistency on the shape of the potentiometric surfaces. Although she admitted that there are fluctuations that might be seasonal, she stated that the waters had been present sequentially over multiple years, so she did not believe it was a seasonal phenomenon. Dr. Ross testified that the consistency of the shallow wells with regard to their relative elevation to each other indicates that they are located in a saturated zone where the potentiometric surface elevations are related to each other. She stated that the monitoring-well data is clear that it could be that at least 10 to almost 20 feet of what is monitored in the weathered zone is saturated.

Preddy testified, however, that none of the samples from the initial shallow wells that were drilled were wet or fully saturated. He stated that additional shallow wells were later drilled and that a dry drilling method was also used on those wells. According to Preddy, the soil samples from the additional shallow wells appeared to be dry and the shallow wells were marked as dry initially upon drilling and again after 24 hours. Preddy further testified that an exhibit that

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was presented by Perry County Associates revealed long periods during which the wells were dry, which indicated that the water in those wells could have been condensation or surface-water infiltration that had gotten into the bore holes of the wells. He testified that, once water enters the bore hole, it cannot get out unless it evaporates. According to Preddy, data indicating that the water in the wells was going up or down in a similar fashion indicated that atmospheric conditions, precipitation, and temperature were affecting the water levels in the wells on a seasonal basis.

Tanner testified that, if you penetrate the surface into a saturated zone, you are going to find water in the borehole. He testified that whether that water appeared immediately or over a period depends on the permeability of the material that you penetrate. He testified that, if water entered the shallow wells, it might be from a saturated zone, but, he stated, in his opinion, it was more likely "perched water," which he defined as the unconfined groundwater separated from an underlying main body of groundwater by an unsaturated zone because, he said, there are areas near or at the surface of the Selma chalk formation that are unweathered where no weathered zone exists at all. According to Tanner, if Dr.

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Ross was correct that there was a connection of water in the shallow weathered Selma chalk formation across the site, he would have expected to see water during the excavation of existing cell 3. Bunnell testified, however, that there was no indication that there was any sort of zone of saturation in the soil adjacent to the cells that were excavated. Tanner testified that he does not believe that there is a saturated zone in the weathered Selma chalk formation. He stated that the weathered zones in the Selma chalk formation were inconsistent across the site and that they are sporadic in the way they occur across the surface in both depth and breadth.

Preddy also testified that he agreed that the Eutaw formation represented the first saturated zone at the Arrowhead Landfill site based on the dry condition of the wells that were drilled and the unsaturated state of the soils removed during excavation. Bunnell stated during his testimony before the hearing officer that, during the mass excavation of the first cells that were constructed at Arrowhead Landfill, there was no indication that there was any sort of zone of saturation adjacent to those cells. He testified that he did not observe any groundwater during the excavation for cell construction.

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Considering the totality of the evidence presented, we cannot conclude that the findings of the hearing officer and the adoption of those findings by the AEMC and the trial court are "[c]learly erroneous in view of the reliable, probative, and substantial evidence on the whole record." See § 41-22-20(k)(6). Although the Gipsons presented evidence by Dr. Ross indicating that a shallow zone of saturation exists across the Arrowhead Landfill site, testimony by a number of other experts suggests that there are a number of other possible explanations for the data on which Dr. Ross relied. Overall, the majority of the experts opined that, even if a saturated area exists around certain of the wells at the Arrowhead Landfill site, that area is limited such that the definitions pertaining to "groundwater" and "saturated zone" found in ADEM's rules and regulations have not been met. Neither this court nor the trial court "shall ... substitute its judgment for that of the agency as to the weight of the evidence on questions of fact." § 41-22-20(k). Because evidence is present in the record that supports the findings that there is no zone of saturation within the Arrowhead Landfill site that extends a significant distance away from each of the wells, the Gipsons' argument on that point does not merit reversal.

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The Gipsons also assert that the findings adopted by the AEMC that there was no groundwater in the excavated areas and that no saturated soils were excavated are erroneous based on the monitoring reports and documents maintained regarding the landfill. They cite a memorandum submitted as an exhibit that was written by Stephanie Carter in the hydrogeology section of ADEM to Philip Davis, chief of the industrial-hazardous-waste branch of ADEM, in which Carter stated, among other things, that she had observed that "groundwater had seeped into the bottom" of one of two test pits at the Arrowhead Landfill site. We note, however, that Carter did not testify before the hearing officer and that the letter could have been referring to groundwater in lay terms rather than groundwater as defined by ADEM's rules and regulations, particularly in light of Carter's reference to "groundwater" in a single pit. Additionally, the hearing officer's findings were supported by the testimony of Bunnell, who testified that, in the mass excavation of the cells constructed at Arrowhead Landfill, he had not observed any groundwater or saturated soils. Because this court cannot reweigh the evidence presented, see § 41-22-20(k), we cannot hold the trial court in error based on this argument.

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The Gipsons also assert on appeal that the AEMC erroneously found that there was no evidence of lakes or wetland areas in the locations near the shallow groundwater-monitoring wells, citing to an exhibit in the record that the Gipsons assert reveals the existence of an existing "jurisdictional wetland" under federal law. We note, however, that the only reference to that document or to the existence of the jurisdictional wetland came from William Hodges, a professional engineer, who confirmed that an exhibit presented by Perry County Associates indicated an existing jurisdictional wetland was located east Well 14. Hodges's testimony merely confirmed the location of the jurisdictional wetland on the exhibit and did not elaborate regarding any potential effects of the existence of the jurisdictional wetland with regard to the saturated zone or the existence of groundwater at the site of the proposed cells. The Gipsons do not point to how any error by the hearing officer with regard to that finding prejudiced their substantial rights. See § 41-22-20(k). Accordingly, this argument does not merit reversal.

The Gipsons last argue on appeal that the AEMC's approval of Solid Waste Disposal Facility Permit 53-03 is in violation

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of pertinent agency rules prohibiting the construction of landfill cells within five feet of the highest measured groundwater. The basis of this argument, however, relies on the Gipsons' assertion that the definition of groundwater does not require that a zone of saturation exist for any significant distance. Because we have concluded that ADEM's rules and regulations contemplate a continuous zone of saturation and that the findings relied on by both the AEMC and the trial court were not clearly erroneous in light of the totality of the evidence presented, we conclude that the Gipsons' argument on this point is similarly without merit and does not require reversal of the trial court's judgment.

The trial court's judgment is due to be affirmed.

AFFIRMED.

Thompson, P.J., and Donaldson, Edwards, and Hanson, JJ.,
concur.