

“Protecting the public health and natural resources of the  
White River watershed through advocacy, education, and research”

WHITE RIVER  
WATERKEEPER®

870-577-5071 (phone) | jessie@whiteriverwaterkeeper.org (email)

P.O. Box 744, Harrison, AR 72602

[www.whiteriverwaterkeeper.org](http://www.whiteriverwaterkeeper.org)

## Buffalo National River & C&H Hog Factory

By the Numbers

- **0 Comments** made on initial C&H permit application other than by those involved.<sup>1</sup>
- **6500 Hogs** permitted at C&H.<sup>2</sup>
- **1 Million Pounds** of hogs excreting waste at C&H.<sup>3</sup>
- **2.8 Million Gallons** of waste applied annually near Big Creek, a tributary of the BNR.<sup>4 5</sup>
- **11 Million Gallons** of waste applied to fields since C&H began operation.<sup>6</sup>
- **1.25 Million Dollars** of AR taxpayers' funds being used to study impacts downstream of C&H.<sup>7 8 9</sup>
- **43 Percent** of children live in poverty in Searcy County.
- **58 Percent** of Searcy County's population receives drinking water below drinking water standards.<sup>10</sup>
- **1 Academic peer-reviewed publication** generated by scientists receiving \$1.25 Million from Arkansas taxpayers.<sup>11</sup>
- **5 Academic peer-reviewed publications** generated by retired scientists working as volunteers monitoring C&H.<sup>12 13 14 15 16</sup>
- **9 Jobs** created by C&H.<sup>17</sup>
- **1200 Jobs** created by the Buffalo National River.<sup>18</sup>
- **30 Million Dollars** in Labor Income created by Buffalo National River.<sup>19</sup>
- **7,000 Dollars** paid to Newton County by C&H in personal property taxes each year.<sup>20</sup>
- **77 Million Dollars** generated by tourism on the Buffalo National River went to Carrol, Boone, Marion, Newton, and Searcy counties in 2016.<sup>21</sup>
- **90 Million Dollars** generated by economic output from Buffalo National River went to Carrol, Boone, Marion, Newton, and Searcy counties in 2016.<sup>22</sup>
- **5000 Gallons/Acre/Day** of lagoon waste allowed to leak at C&H by permit.<sup>23</sup>
- **8 Million Gallons** of waste engineers estimate *have leaked* in 5 years.<sup>24</sup>
- **Only One National River in Arkansas.**

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### Someone always lives downstream.

Data already indicate problems. But if something catastrophic were to happen, Searcy County would suffer the most. In poverty and access to adequate safe drinking water infrastructure, Searcy Co. is already suffering.

### Consider the Numbers.

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<sup>1</sup> Despite the fact that Arkansas Code 8-4-203(d)(1) states “When an application for the issuance of a new permit or a major modification of an existing permit is filed with the department, the department shall cause notice of the application to be published in a newspaper of general circulation in the country in which the proposed facility is to be located”, the public notification requirements by the permit were not in accordance with this, as it was only required to be noticed on ADEQ’s website. Although there is no public record of notification, assuming ADEQ posted notification somewhere on their website for 30 days, **ADEQ made a draft decision in less than seven business days.** See record of public comments for ARG590001.

[https://www.adeq.state.ar.us/home/pdssql/p\\_permits\\_online\\_npdes\\_additional.aspx?PmtNbr=ARG590001&Category=PermitInformation&Title=Permit%20Information](https://www.adeq.state.ar.us/home/pdssql/p_permits_online_npdes_additional.aspx?PmtNbr=ARG590001&Category=PermitInformation&Title=Permit%20Information)

<sup>2</sup> See p. 1, Section II of ARG590001 NOI,

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_Notice%20of%20Intent%20\(NOI\)\\_20120705.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_Notice%20of%20Intent%20(NOI)_20120705.pdf)

<sup>3</sup> **1,138,300 pounds** - see p. 55 of the Application Packet for Reg. 5 permit. Calculations based on estimates reported for hogs at the facility on a typical day: 450 lb. boars = **6**, 425 lb. gestating sows = **2252**, 400 lb. lactating sows = **420**, 14 lb. nursery pigs = **750**. [https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/5264-W\\_Application%20Packet\\_20160406.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/5264-W_Application%20Packet_20160406.pdf), as calculated by estimates given in Reg. 5 Application Packet.

<sup>4</sup> Amount of waste land applied was averaged from 2014-2017 Annual Reports.

Summary of land applications by field from **2017** Annual Report = **2,961,000 gallons** land applied

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_2017%20Annual%20Report\\_20180122.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_2017%20Annual%20Report_20180122.pdf)

Summary of land applications by field from **2016** Annual Report = **2,709,000 gallons** land applied

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_2016%20Annual%20Report\\_20170126.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_2016%20Annual%20Report_20170126.pdf)

Summary of land applications by field from **2015** Annual Report = **3,225,000 gallons** land applied

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_2015%20Annual%20Report\\_20160115.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_2015%20Annual%20Report_20160115.pdf)

Summary of land applications by field from **2014** Annual Report = **2,367,400 gallons** land applied

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_2014%20Annual%20Report\\_20150127.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_2014%20Annual%20Report_20150127.pdf)

<sup>5</sup> 2013 was not included in summary. The annual report did not include amount of waste land applied to fields. 2,786,908 gallons of waste was reportedly generated on the farm, but no indication on what percentage was land applied. The maximum storage design of the ponds = 2,337,074 gallons.

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_2013%20Annual%20Report\\_20140127.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_2013%20Annual%20Report_20140127.pdf)

<sup>6</sup> **Possibly 13 Million gallons have been land applied.** Only totals from 2014-2017 were included in estimate of 11 Million. See footnotes 5 and 6 for more information.

<sup>7</sup> 2013 = \$250,000, [http://buffalorive\(ralliance.org/Resources/Documents/Beebe%20Request%20for%20\\$250K.pdf](http://buffalorive(ralliance.org/Resources/Documents/Beebe%20Request%20for%20$250K.pdf).

<sup>8</sup> 2015-2016 = \$100,000; 2016-2017 = \$100,000; 2017-2018 = \$100,000; 2018-2019 = \$100,000. See p. 15 of Senate Bill 270; 2015 <http://www.arkleg.state.ar.us/assembly/2015/2015R/Acts/Act369.pdf>.

<sup>9</sup> Act 238 of 2018 Fiscal Session approved **\$600,000** to fund continued efforts by UofA Big Creek Research and Extension Team through the 2021-2022 fiscal year.

<http://www.arkleg.state.ar.us/assembly/2017/2018F/Pages/BillInformation.aspx?measureno=SB77>

<sup>10</sup> See p. 10, North Arkansas Regional Medical Center. 2016. Community Health Needs Assessment.

[https://docs.wixstatic.com/ugd/1becdc\\_1ae619bc16ed4f80afb4747197205ee3.pdf](https://docs.wixstatic.com/ugd/1becdc_1ae619bc16ed4f80afb4747197205ee3.pdf)

<sup>11</sup> Sharpley, A. N., Haggard, B. E., Berry, L., Brye, K., Burke, J., Daniels, M. B., Gbur, E., Glover, T., Hays, P., Kresse, T., and VanDevender, K. W. (2017). Nutrient Concentrations in Big Creek Correlate to Regional Watershed Land Use. *Agricultural & Environmental Letters*, 2(1). <https://dl.sciencesocieties.org/publications/ael/articles/2/1/170027>

<sup>12</sup> Brahana, J.V., Bitting, C., Kosic-Ficco, K., Turk, T., Murdoch, J., Thompson, B., & Quick, R. Utilizing Fluorescent Dyes to Identify Meaningful Water-Quality Sampling Locations and Enhance Understanding of Groundwater Flow Near a Hog CAFO on Mantled Karst—Buffalo National River, Southern Ozarks. *US Geological Survey Karst Interest Group Proceedings, San Antonio, Texas, May 16–18, 2017*, 147-160.

<sup>13</sup> Brahana, V., Nix, J., Bitting, C., Bitting, C., Quick, R., Murdoch, J., ... & North, V. (2014). CAFOs on karst—meaningful data collection to adequately define environmental risk, with a specific application from the southern Ozarks of northern Arkansas. *US Geological Survey Karst Interest Group Proceedings, Carlsbad, New Mexico*, 87-96.

<https://pubs.usgs.gov/sir/2014/5035/sir2014-5035.pdf>

<sup>14</sup> Brahana, V., Nix, J., Kuyper, C., Turk, T., Usrey, F., Hodges, S., ... & Thompson, B. (2016). Geochemical Processes and Controls Affecting Water Quality of the Karst Area of Big Creek near Mt. Judea, Arkansas. *Journal of the Arkansas Academy of Science*, 70(1), 45-58. <http://scholarworks.uark.edu/cgi/viewcontent.cgi?article=2181&context=jaas>

<sup>15</sup> Kosič, K., Bitting, C. L., Van Brahana, J., & Bitting, C. J. (2015). Proposals for integrating karst aquifer evaluation methodologies into national environmental legislations. *Sustainable Water Resources Management*, 1(4), 363-374.

<https://doi.org/10.1007/s40899-015-0032-5>



<sup>16</sup> Murdoch, J., Bitting, C., & Van Brahana, J. (2016). Characterization of the karst hydrogeology of the Boone Formation in Big Creek Valley near Mt. Judea, Arkansas—documenting the close relation of groundwater and surface water. *Environmental Earth Sciences*, 75(16), 1160.

<http://buffaloriveralliance.org/resources/Pictures/scanned%20reprints%20GWSW%20Big%20Creek%20karst.pdf>

<sup>17</sup> See Section 3.7.2, p. 3-48, [https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/Environment/fonsi\\_hog\\_farms\\_final\\_assesment.pdf](https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/Environment/fonsi_hog_farms_final_assesment.pdf)

<sup>18</sup> See Table 3, p. 20 [https://www.nps.gov/nature/customcf/NPS\\_Data\\_Visualization/docs/2016\\_VSE.pdf](https://www.nps.gov/nature/customcf/NPS_Data_Visualization/docs/2016_VSE.pdf)

<sup>19</sup> *Id.*

<sup>20</sup> See Section 3.7.2, p. 3-48, [https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/Environment/fonsi\\_hog\\_farms\\_final\\_assesment.pdf](https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/Environment/fonsi_hog_farms_final_assesment.pdf)

<sup>21</sup> See Table 3, p. 20 [https://www.nps.gov/nature/customcf/NPS\\_Data\\_Visualization/docs/2016\\_VSE.pdf](https://www.nps.gov/nature/customcf/NPS_Data_Visualization/docs/2016_VSE.pdf)

<sup>22</sup> *Id.*

<sup>23</sup> C&H designed and constructed the lagoons based on inappropriate seepage rate standards (5,000 gal/acre/day), ADEQ defended that rate citing AWMFH section stating “when credit for reduction of seepage for manure sealing is allowed, NRCS guidance considers an acceptable initial seepage rate to be 5,000 gallons per acre per day. The higher value used for design assumes that manure sealing will result in at least a half order of magnitude reduction in the initial seepage”. [https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_R%20Cross%20Response%20to%20Comments\\_20131113.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_R%20Cross%20Response%20to%20Comments_20131113.pdf)

However, the AWMFH describes the criteria for siting, investigation, and design of liquid manure storage facilities. “Karst” is mentioned as a “very high” vulnerability area and evaluation of other storage alternatives is recommended. **Manure sealing credits are only applicable in the areas with low vulnerability and slight to moderate risk.** See Table 10-4, p. 10-25 <https://www.wcc.nrcs.usda.gov/ftpref/wntsc/AWM/handbook/ch10.pdf>

<sup>24</sup> Results of the soil test to seepage rates reported 3,448 and 4,064 gal/acre/day for Test #1 and Test #2, respectively. [https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_QA-QC%20Soil%20Testing%20Results\\_20130412.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_QA-QC%20Soil%20Testing%20Results_20130412.pdf)

The average seepage rate calculated for the holding ponds is 3,756 gal/acre/day. Total area of holding ponds = 51,617 sq. ft (or 1.185 acres). See p. 57; Table 1 on p. 8 of Section 3 of Nutrient Management Plan

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/5264-W\\_Application%20Packet\\_20160406.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/5264-W_Application%20Packet_20160406.pdf)

Therefore, 3,756 gal \* 1.18 acres \* (5\*365) days = **8,088,546 gallons of waste estimated to leak in 5 years.**

Note: No reduction for manure sealing was given due to karst landscape and noted violations in lagoon liner. For more information on manure sealing, see footnote 23. For review of violations, see White River Waterkeeper Comments on Permit 5264-W, Table 1, p. 2-3, [https://docs.wixstatic.com/ugd/d29500\\_fc96917af65b414fbdd17c560bbd2d7.pdf](https://docs.wixstatic.com/ugd/d29500_fc96917af65b414fbdd17c560bbd2d7.pdf)