

March 17, 2017

To whom it may concern,

I would like to go on record stating that the C&H Hog Farm draft permit 5264-W was improperly approved by ADEQ and should be denied. The information I am including in my comments, I feel are relevant to this permit process. It includes historical and current information about storage and land application of liquid waste from this swine facility.

**“PUBLIC NOTICE OF DRAFT NO-DISCHARGE PERMIT  
PERMIT NUMBER 5264-W  
AFIN 51-00164**

**This draft permit is for the storage and land application of liquid waste from a swine facility in accordance with Arkansas Pollution Control and Ecology Commission (APC&EC) Regulation 5.”**

Most of the documentation I have included, if not all, comes directly from the Arkansas - ADEQ website: <https://www.adeq.state.ar.us/> with most links included with figures and quotes for easy reference.

- Appendix A contains relevant documentation related to the design, construction and one modification of C&H Hog Farms. Links are provided for easy review. Comments and highlights were added with hopes that it would point out things of interest and support the questions and comments I will try to make. Please answer all of the questions in detail.

“Department policy, the NOI has been reviewed and has been determined to be complete. The substantial change will be effective the date of this letter. A copy of the General Permit ARG590000 is available from the Department”.

**Is this statement correct?**

ARG590001\_NOI and MP\_20120625 Section 1.6 HOLDING POND LINER:

“Liner material shall not contain significant amounts of organic material, frozen material, ice or **rocks larger than four inches in diameter** and shall not be placed on a frozen surface.”

**Is this statement and design specification correct?**

- Appendix B contains information provided directly from ADEQ upon a non-FOIA request. Excerpts from both the original NOI and the “As Built” design are included side by side for ease to answer questions.

**Have these drawings and documentation been reviewed and determined to be complete by Senior Project Engineer Nathan A. Pesta, P.E. of DeHaan, Grabs & Associates as well as ADEQ? Please respond in detail.**

**Are the documents missing any sheets that are listed on the Cover Sheets (Example: Sheet 15: WASTE STORAGE POND 2 STAGE STORAGE TABLE)? Please respond in detail.**

**Is Sheet 15: WASTE STORAGE POND 2 STAGE STORAGE TABLE is important for the proper monitoring of stage levels as well as a tool for determining volumes for planned waste application as well as providing reverence for the “25 Year-24 Hour Stage/ MUST PUMP DOWN” or “25 Year-24 Hour Stage Overflow EI.”? Please respond in detail.**

- Appendix C relates to the Pond Liner Modification.

**Have these drawings and documentation been reviewed and determined to be complete by Senior Project Engineer Nathan A. Pesta, P.E. of DeHaan, Grabs & Associates as well as ADEQ? Please respond in detail.**

**Are the documents missing any sheets that are listed on the Cover Sheets? (Example: Addendum 9: Under Liner Vent Details) Please respond in detail.**

**Is the information Addendum 9: Under Liner Vent Details important for the design as well as providing details about the interface between the existing clay liner and the synthetic liner(s) and flare system? Please respond in detail.**

**Is the Underline Vent important for the proper daily operation and safety of the facility and surround area (Examples: C&H Hog Farms, surrounding neighbors, Mt. Judea, Arkansas School)? Please respond in detail.**

- Appendix D relates to design specifications mentioned earlier from the original NOI, please review. I have already asked the question “Is this statement and design specification correct?  
**My question now is, is it proper design to go over rocks of this size and if so what are the chances of failure of the synthetic liner(s) overlay or retrofit?**

**Do you feel this is a safe retrofit?**

**Please take your time respond in detail to the questions.**

- Appendix E references what appears to be the first Compliance Inspection and Report with photographs and comments from the Inspectors. There is a copy of the report as well as a response from C&H Hog Farms to that report. There is are photographs with field observations of what the inspectors saw and noted. The photos included are from the 1<sup>st</sup> Inspection and then the 2<sup>nd</sup> Inspection.  
Please review the photographic logs, field notes, report and the response to that report. Please note the timeline for all this exchange and information.

**Is the “coarse grain to cobble-size coarse content in clay liner” acceptable and meet the design criteria stated in the NOI? Please respond in detail.**

It appears there were recommendations in the report that were reported and statement by C&H Hog Farms took immediate action regarding rill was of Pond 2. In the following Compliance Inspection photographs, it appears that there is still rill wash and erosion of the sidewalls of Pond 2 as well as “coarse grain to cobble-size coarse content in clay liner”.

**Does ADEQ find this acceptable, first of all field inspection pointing out issues that appear to show failure to meet some of the conditions of the NOI concerning rock size as well as the Inspectors reporting short comings in a report that suggested those short comings had been taken care of “immediately” by C&H Hog Farms? Please take your time respond in detail to the questions.**

Additional Compliance Inspection photographs, EPA inspection as well as ERI Lagoon Photographs document over time that those same cobble-size coarse content in clay liner are still there.

**Based on the original NOI design requirements and the Compliance Inspection Report and photographs contained within, are the clay lined waste lagoons acceptable to the ADEQ? Please respond in detail.**

**Do the waste lagoons in those reports meet the design criteria stated in the original NOI design plans? Please take your time respond in detail to the questions.**

- Appendix F relates to my Public Comments about the Major Modification related to the liner and flare. I feel it is relevant to the discussion above.
- Appendix G relates to reference points (in this case, Latitudes, Longitudes but most importantly Elevations). Having known reference points are critical (Examples: Implementing Engineering designs turned into a facility that reflects those designs like elevations for buildings, waste lagoons, lagoon heights. Another example would be ERI study transects, and even the Harbor Drilling Study.)

Please review the Engineering Drawings and figures. Some of these include Bench Mark Elevations from the original NOI, “As Built” Engineering drawings as well as a Certified “Surveyed Boring Location” figure reporting.

**Based on the information provide in Appendix G, please provide me with an accurate set of Lat/Lon coordinates and elevation for the Harbor Drilling Study Borehole. Please respond in detail.**

The Borehole study drilling logs, some of the field notes, the depth soil and lithological changes occurred (Examples: gamma, neutron density), depth to epikarst, grout levels, water bearing units, depth water quality samples were taken etc.all use depths "Below Ground Surface or bgs) as a means of reference. The bgs was used to compare to the ERI Lagoon Survey, the borehole information could be compared to other reference points like the bottom of the lagoons, Interceptor trenches.

**Is the elevation of the certified "Surveyed Boring Location" correct?  
Please respond in detail.**

I included Tia Hubbard an independent observer and Professional Geologist. I feel he is correct in his assessment of the epikarst zone.

In closing I would like to repeat an earlier statement:

**I would like to go on record stating that the C&H Hog Farm draft permit 5264-W was improperly approved by ADEQ and should be denied.**

I would also like to go on record stating I have health concerns for all landowners including ones permitting the spreading of untreated swine waste on their fields, other residents of all age and health condition, the teachers, staff and students of Mt. Judea, Arkansas School, the many tourist and visitors to the community there and the adjoining Buffalo National River.

I do not believe the land will support the loading rates of nutrients as well as pathogens on top of an area that is this fragile karst terrain.

**There is a lot riding on this. No time to gamble. Please take time to re-review in detail the information I sent.**

Sincerely,

**John Murdoch  
Geologist  
Wesley, Arkansas**

# **APPENDIX A**

[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)

## **“C & H Hog Farms, Inc. Application for Regulation 6 Permit Engineering Plans and Review**

**September 1, 2015**

**Prepared by: T. P. Bass, P.E.**

**Reviewed by: Dennis K. Carman, P.E.**

### **Permitting History**

**Original Permitting** - ADEQ Letter dated August 03, 2012. Re: Concentrated Animal Feeding Operations General Permit (Tracking Number ARG590001 - AFIN 51-00164) “The Notice of Intent (NOI) package for coverage under the General Permit No. ARG590000, for a concentrated animal feeding operation, was received on 6/25/2012.



In accordance with Department policy, the NOI has been reviewed and has been determined to be complete. Coverage under this general permit will be effective the date of this letter. A copy of the General Permit ARG590000 is available from the Department”.

**Permit Modification to allow Tanker Methods for field application.** ADEQ Letter dated June 5, 2014. Re: Concentrated Animal Feeding Operations General Permit (Tracking Number ARG590001- AFIN 51- 00164) “The Notice of Intent (NOI) package for a substantial change of coverage under the General Permit No. ARG590000, for a concentrated animal feeding operation, was received on 2/11/2014. In accordance with



Department policy, the NOI has been reviewed and has been determined to be complete. The substantial change will be effective the date of this letter. A copy of the General Permit ARG590000 is available from the Department”.



**Engineering Plans and Reports:** Engineering plans and reports dated June 1, 2012 have been prepared, submitted and approved by ADEQ. Engineering plans were prepared by DeHaan, Grabs & Associates LLC, consulting engineers in accordance with ADEQ rules and regulations and can be viewed at the website listed below.

#### **Engineering Plan Sheets**

[http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG\\_590001\\_Maps\\_20120613.pdf](http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG_590001_Maps_20120613.pdf)

#### **As Built Engineering Plan Sheets**

[http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_As%20Built%20Engineering%20Plan%20Sheets\\_20130412.pdf](http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_As%20Built%20Engineering%20Plan%20Sheets_20130412.pdf)


**(Continued)**

### **Existing Facility Field Review**

**Field Applications Areas:** Areas viewed were pasture and hayland that were either not subject to flooding or only subject to occasional flooding. Slopes, after buffering, are within specified limits of 15% or less. The Owner clearly understood buffers and was following those buffer limitations to the letter. Vegetative cover was excellent with superior vegetative cover in those areas receiving nutrients from manure application.

**Permit Application – Liner Addition:** A permit change application is currently being processed with the intent to permit the owner to add a liner to the bottom of ponds 1 and 2 and a cover on pond 1 to flame the methane generated. Although this addition is not required, the owner continues to demonstrate willingness to add features above and beyond the regulatory requirements for operating this facility in an environmentally safe and acceptable manner.

### **Existing Facility Design Review**

 This facility has been previously reviewed by and approved by ADEQ and a permit for operation has been issued. The facility has been in operation since 2012. Several follow-up visits have been made, by ADEQ, EPA, Big Creek Research & Extension Team (BCRET) and others, as the facility operations and permit application changes have been challenged by groups and individuals with environmental concerns. The Design and As-Built plans, prepared by DeHaan, Grabs & Associates LLC, were reviewed as a part of this permit application.”



[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_NOI\\_20120625.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_NOI_20120625.pdf)

## 1. Permit Information ARG590001 NOI\_20120625

**(NOI - June 25, 2012)** dated and signed by Senior Project Engineer Nathan A. Pesta, P.E. of DeHaan, Grabs & Associates, LLC to ADEQ Mr. Richard Connell.

Letter 06/07/2012 including facility plans, designs, drawings and specifications for construction of facility, etc.

“Dear Richard McConnell:

I have enclosed a construction approval application and NPDES ARG59000 permit for C & H Hog Farms proposed hog operation of 2,500 head farrowing farm. **Enclosed is the original copy.** We appreciate your review of these documents and if you have questions, do not hesitate to give me a call or send me an email at Nate@dgaengineering.com.

Enclosures cc: Jason Henson, w/encl Geoff Bates,

Cordially' Nathan A. Pesta, P.E. Senior Project Engineer”

### Excerpt from this original NOI:

**NOI: (ARG590001\_NOI and MP\_20120625.pdf)**

*(F-4) C&H Hog Farms May 18, 2012 Newton County, Arkansas*

#### **1.6 HOLDING POND LINER**



Liner material shall not contain significant amounts of organic material, frozen material, ice or **rocks larger than four inches in diameter** and shall not be placed on a frozen surface.

[https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/arg590001\\_noi\\_20150707.pdf](https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/arg590001_noi_20150707.pdf)

**Modification Request – Waste Pond Liners and Cover  
AFIN: 51-00164, Permit No.: ARG590001**

**(“NOI Design Plans”- May 7, 2015)**

Jason Henson  
C & H Hog Farms, Inc.  
HC 72 Box 10  
Mount Judea, AR 72655

May 7, 2015

**Re: Major Modification Request – Waste Storage Pond Liners and Cover  
AFIN: 51-00164, Permit No.: ARG590001**

Mr. John Bailey  
Permit Branch Manager  
Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

Dear Mr. Bailey:

C & H Hog Farms, Inc. is seeking the Department’s approval of a major modification request to install pond liners in Waste Storage Ponds 1 and 2. A methane flare system and cover will be installed over Waste Storage Pond 1. This is the only revision we are seeking at this time.

Enclosed are the Notice of Intent (NOI), ADEQ Form 1, Disclosure Statement, and Design plans.

Please do not hesitate to contact me if you have any questions or concerns regarding this request.

Respectfully,

*Jason Henson*  
Jason Henson  
C & H Hog Farms, Inc.

## **APPENDIX B**

# C & H HOG FARMS GESTATION-FARROWING FARM AS BUILT ENGINEERING PLAN SHEETS

SECTION 26, T 15 N, R 20 W  
NEWTON COUNTY, ARKANSAS

DATE: APRIL 12, 2013  
SHEET INDEX

SHEET 7 -	WASTE STORAGE POND FINAL DESIGN
SHEET 8 -	PROPOSED SITE PLAN CROSS SECTION
SHEET 10 -	WASTE STORAGE POND & BARN CROSS SECTIONS
SHEET 11 -	WASTE STORAGE POND CROSS SECTIONS
SHEET 13 -	POND INLET & MAXIMUM BERM DETAILS
SHEET 14 -	WASTE STORAGE POND 1 STAGE STORAGE TABLE
SHEET 15 -	WASTE STORAGE POND 2 STAGE STORAGE TABLE

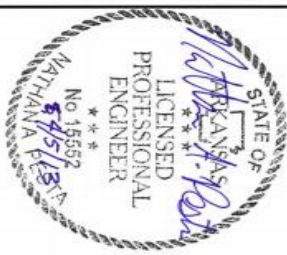


Appears to be **MISSING** sheet 15: **"WASTE STORAGE POND 2 STAGE STORAGE TABLE"**

Important information like:

**"25 Year-24 Hour Stage/ MUST PUMP DOWN"**

**"25 Year-24 Hour Stage Overflow EI."**



No.	Revision/Issue	Date
1	AS BUILT	4/12/13

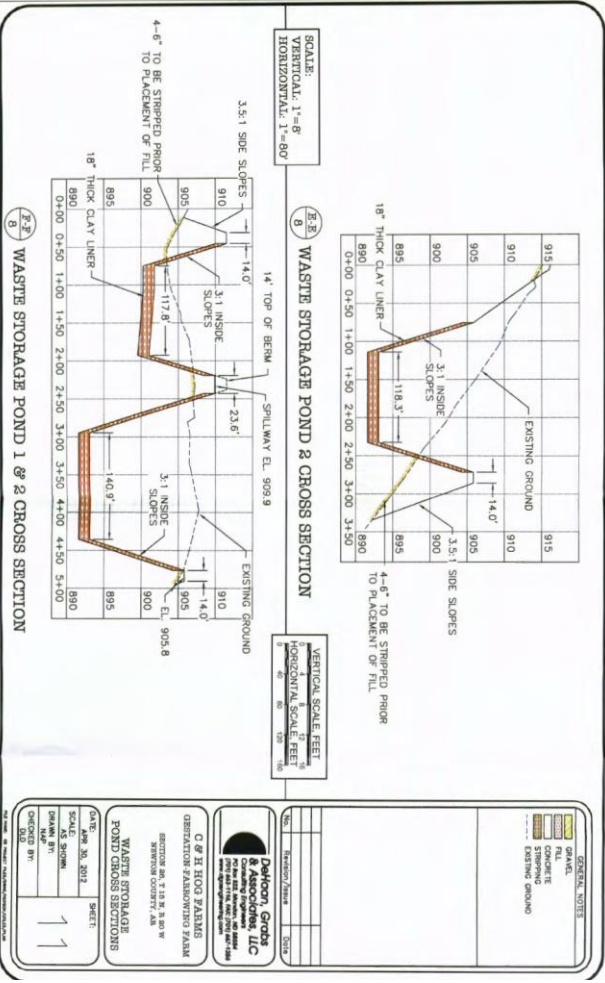
**DeHaan, Grabs & Associates, LLC**  
Consulting Engineers  
PO Box 622, Menden, ND 58554  
(701) 663-1116, FAX: (701) 667-1366  
www.dgengineering.com

**C & H HOG FARMS**  
GESTATION-FARROWING FARM  
SECTION 26, T 15 N, R 20 W  
NEWTON COUNTY, AR  
COVER SHEET

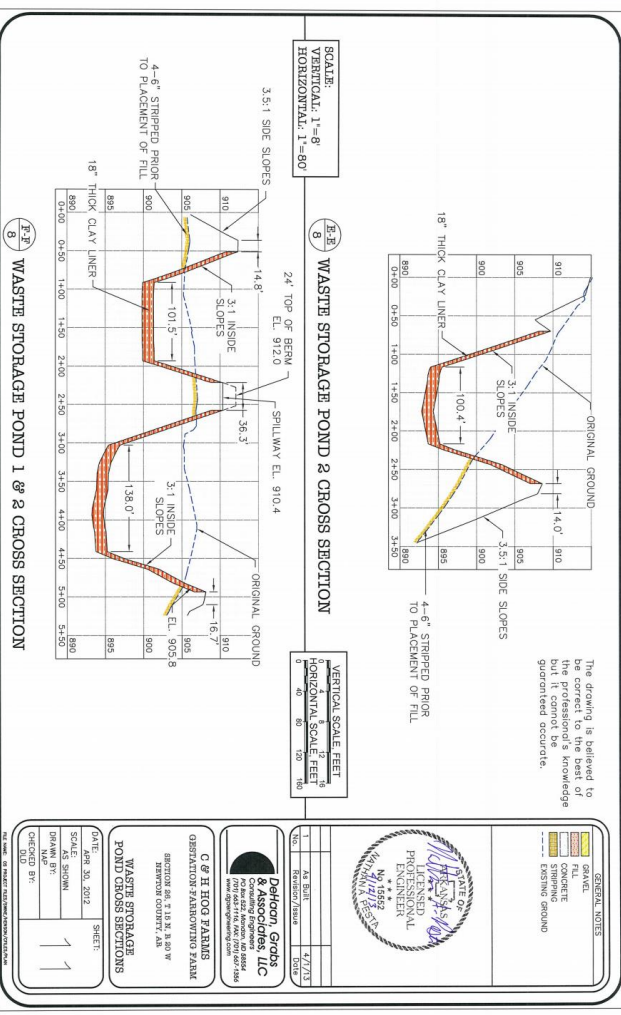
DATE: JUN 1, 2012 SHEET:  
SCALE: NONE  
DRAWN BY: NAP  
CHECKED BY: DLD  
COVER

# Side by side comparison of select sheets from the NOI and the "As Built" Engineering Plans

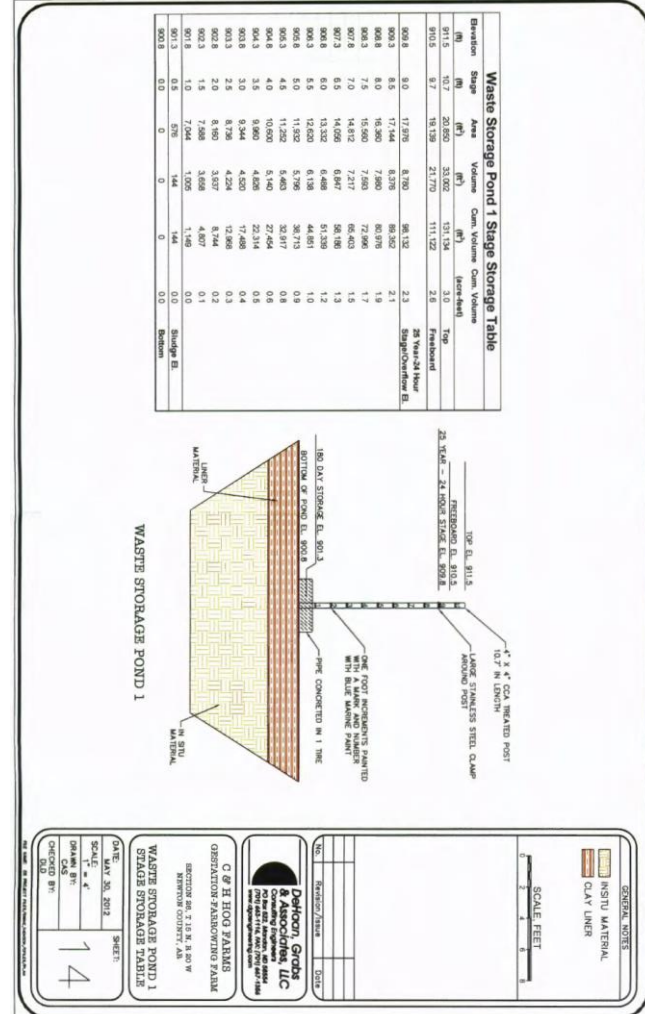
## From NOI - Engineering Plans



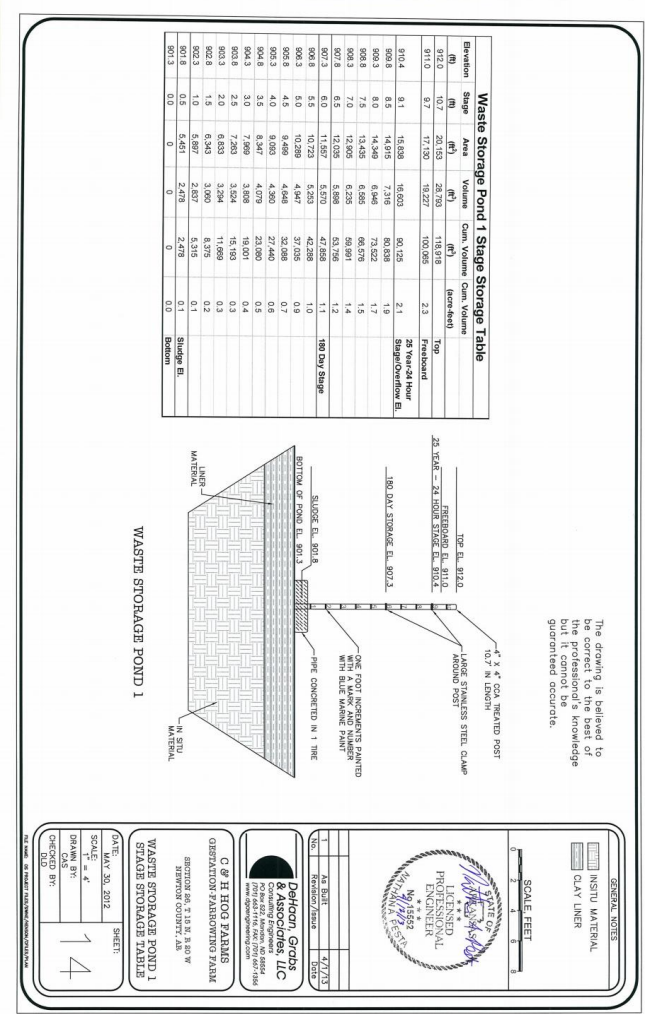
## "As Built" Engineering Plans



## From NOI - Engineering Plans

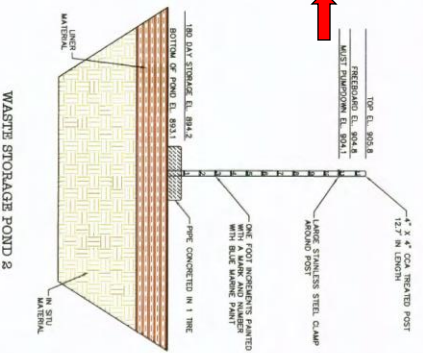


## "As Built" Engineering Plans



**Waste Storage Pond 2 Stage Storage Table**

Elevation	Stage	Area	Volume	Cum. Volume	Cum. Volume	Freeboard	Top	Bottom
(ft)	(ft)	(sq ft)	(ft <sup>3</sup> )	(ft <sup>3</sup> )	(acre-feet)	(ft)		
900.8	12.7	35,259	30,719	208,798	6.0	0.0		
900.9	11.7	32,094	34,094	244,643	5.0			
900.1	11.0	31,469	12,202	232,089	5.3			25 Year-24 Hour Storage Capacity
900.7	10.6	30,031	15,045	216,649	5.0			
900.2	10.1	29,649	14,821	204,604	4.7			
900.7	9.6	28,835	14,005	190,063	4.4			
900.2	9.1	27,469	13,099	176,078	4.0			
900.2	8.6	26,501	12,216	164,279	3.4			
900.2	8.1	25,501	12,216	149,479	3.4			
900.7	7.6	24,463	12,039	137,000	3.1			
900.2	7.1	23,903	11,871	124,001	2.9			
900.7	6.6	22,661	11,114	113,400	2.6			
900.2	6.1	21,905	10,064	102,236	2.3			
900.2	5.6	21,013	8,776	91,460	2.0			
900.2	5.1	20,013	7,796	81,446	1.9			
900.2	4.6	19,171	6,709	71,660	1.6			
900.7	4.1	18,333	5,966	62,274	1.4			
900.7	3.6	17,521	5,266	53,308	1.2			
900.2	3.1	16,733	4,724	44,742	1.0			
900.2	2.6	15,976	4,250	36,779	0.9			
900.2	2.1	15,256	3,844	28,779	0.7			
900.7	1.6	14,475	3,478	21,365	0.5			160 Day Storage
900.7	1.1	13,729	3,064	17,078	0.4			
900.1	0.6	13,023	2,704	12,594	0.2			
900.1	0.0	12,282	0	0	0.0			



**GENERAL NOTES**

- INSITU MATERIAL
- CLAY LINER

SCALE: FEET

0 2 4 6 8

**15**

**WASTE STORAGE POND 2**  
OPERATION MAINTENANCE PLAN  
REVISION: 04.14.10 3.00 PM  
SERVING COUNTY, AR

**C & H HOUS PLAINS**  
OPERATION MAINTENANCE PLAN  
SERVING COUNTY, AR

**Dalhousy Grady**  
Civil Engineer  
Professional Engineer No. 10100  
1000 N. 10th Street, Suite 100  
P.O. Box 1000  
Pine Bluff, AR 71601  
www.dalhousygrady.com

DATE: MAR. 20, 2012 SHEET:  
SCALE: 1" = 4'  
DRAWN BY:  
CHECKED BY:  
END

"As Built" - Engineering Plans



Appears to be **MISSING** Sheet 15:



"WASTE STORAGE POND 2 STAGE STORAGE TABLE"

"25 Year-24 Hour Stage/Must Pump Down"

"25 Year-24 Hour Stage Overflow El."

## **APPENDIX C**

Jason Henson  
C & H Hog Farms, Inc.  
HC 72 Box 10  
Mount Judea, AR 72655

May 7, 2015

From file:  
[ARG590001 PN 20150708.pdf](#)

**Re: Major Modification Request – Waste Storage Pond Liners and Cover  
AFIN: 51-00164, Permit No.: ARG590001**

Mr. John Bailey  
Permit Branch Manager  
Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

Dear Mr. Bailey:

C & H Hog Farms, Inc. is seeking the Department's approval of a major modification request to install pond liners in Waste Storage Ponds 1 and 2. A methane flare system and cover will be installed over Waste Storage Pond 1. This is the only revision we are seeking at this time.

Enclosed are the Notice of Intent (NOI), ADEQ Form 1, Disclosure Statement, and Design plans.

Please do not hesitate to contact me if you have any questions or concerns regarding this request.

Respectfully,

*Jason Henson*  
Jason Henson  
C & H Hog Farms, Inc.

Enclosures




# C & H HOG FARMS GESTATION-FARROWING FARM ENGINEERING PLAN SHEETS

SECTION 26, T 15 N, R 20 W  
NEWTON COUNTY, ARKANSAS

DATE: APRIL 15, 2015

## SHEET INDEX

- ADDENDUM 1 - WASTE STORAGE POND HDPE LINER DETAILS
- ADDENDUM 2 - WASTE STORAGE POND 1 HDPE COVER DETAILS
- ADDENDUM 3 - WASTE STORAGE POND 1 BALLAST PIPE DETAILS
- ADDENDUM 4 - MISCELLANEOUS DETAILS
- ADDENDUM 5 - MISCELLANEOUS DETAILS 2
- ADDENDUM 6 - WASTE STORAGE POND 1 BASELINER PANEL LAYOUT
- ADDENDUM 7 - WASTE STORAGE POND 2 BASELINER PANEL LAYOUT
- ADDENDUM 8 - BASELINER DETAILS
- ADDENDUM 9 - UNDER LINER VENT DETAILS 

Appears to be missing **ADDENDUM 9: "Under Liner Vent Details"** 

This might provide important information like:

How one goes from an existing Clay Liner design to Synthetic Liner(s) and show the vent for the gases below those new liner(s). This would appear to be a very important gap that seems missing in the certified and reviewed copy provided:

File: [ARG590001 PN 20150708.pdf](#)

GENERAL NOTES



No.	Revision/Issue	Date

**DeHaan, Grabs & Associates, LLC**  
 Consulting Engineers  
 1701 655-1115 FAX: 7201 667-1356  
[www.dgengineering.com](http://www.dgengineering.com)

**C & H HOG FARMS**  
 GESTATION-FARROWING FARM  
 SECTION 26, T 15 N, R 20 W  
 NEWTON COUNTY, ARS  
**COVER SHEET**

DATE: APRIL 15, 2015	SHEET:
SCALE: NONE	<b>COVER</b>
DRAWN BY: N/A	
CHECKED BY: DLD	

## **APPENDIX D**

**From the original NOI: (ARG590001 NOI and NMP 20120625.pdf)**

**(F-4)**

*C&H Hog Farms May 18, 2012  
Newton County, Arkansas*

for later use as topsoil or disposed of properly. The impoundment area shall be excavated to the lines and grades as shown on the plans. Any borrow areas outside the impoundment area shall be graded and left in a well-drained condition. The contractor shall be responsible for the removal of excess water from any portion of the job site and all necessary equipment. In addition, the contractor is responsible for ensuring that all applicable permits have been obtained prior to any dewatering. Pumping of ponded water, if necessary during construction, shall be conducted in a timely manner to prevent saturation of large areas of the borrow pit and outletted to an acceptable drainage course as determined by the Engineer. Excavation is considered integral to fill placement, therefore payment will be made for only one.

**1.5 HOLDING POND EMBANKMENT**

Fill shall be placed at the lowest point along the centerline of the embankment in horizontal layers not to exceed 6 inches in compacted depth to specified densities before placement of a successive layer. The fill shall be placed over the entire length and width of the embankment along one side of the holding pond except in areas where sectionalized construction is authorized by the Engineer. Where less impervious material is encountered in the borrow area, it shall be placed in the outer portions of the embankment (Zone 2 on Plans) as part of each lift and compacted the same as the rest of the embankment if authorized by the Engineer. Rocks larger than 6 inches in diameter shall not be used in the fill. The contractor shall be responsible for any water needed to raise the moisture content of fill material prior to compaction. The contractor shall also provide any equipment necessary to apply this water to fill. Care should be taken to prevent excessive cracking of compacted fill before a successive layer is placed. Compaction shall be performed to each lift by means of controlled travel of compaction equipment so that each lift of the fill area has been uniformly compacted to a final density consistent with 95% Standard Proctor Density (ASTM D-698). Each pass of soil loading and compaction equipment should travel parallel to the centerline of the embankment.

The moisture content at the time of compaction shall be consistent with the requirements of compaction to achieve final density.

**1.6 HOLDING POND LINER**

The holding pond's final grades shall be over cut by a minimum of 18 inches, scarified and padded with a minimum of 18 inches of well compacted low permeable soil. Liner material shall not contain significant amounts of organic material, frozen material, ice or **rocks larger than four inches in diameter** and shall not be placed on a frozen surface. The liner shall be placed in horizontal layers not to exceed 6 inches in compacted depth. Each lift shall be compacted by means of controlled travel of compaction equipment so that the ...

*DeHaan, Grabs & Associates, LLC F-4  
Mandan, ND & Dodge City, KS*



**“rocks larger than  
four inches in diameter”**

# APPENDIX E

<b>Photographer:</b>	Tony Morris			<b>Witness:</b>	Phillip Campbell		
<b>Photo #</b>	6	<b>Of</b>	6	<b>Date:</b>	07/23/13	<b>Time:</b>	17:21
<b>Description:</b>	Rill erosion and desiccation cracks in Holding Pond liner due to extended exposure.						



**1<sup>st</sup> Compliance Inspection and Report**

large rocks in liner?

“gravel to cobble-sized coarse content within the liner clay”

Water Division NPDES Photographic Evidence Sheet

Location: C&H Hog Farm, Newton County

Photographer: Tony Morris

Witness: Phillip Campbell

Photo # 5 Of 6

Date: 07/23/13 Time: 12:03

Description: Rill erosion in Settling Basin liner. Large rocks in liner. Signs of liner deterioration.



"large rocks in liner" ★

Photographer: Tony Morris

Witness: Phillip Campbell

September 10, 2013


Jason Henson  
C & H Hog Farms  
HC 72 Box 10  
Mt. Judea, AR 72655

<https://www.adeq.state.ar.us/downloads/WebDatabases/InspectionsOnline/073447-insp.pdf>

**Re: Compliance Assistance Inspection (Newton Co)  
AFIN: 51-00164, Permit No.: ARG590001**

Dear Mr. Henson:

On July 23, 2013, members of the Water Division Inspection Branch performed a compliance assistance inspection (hereinafter "inspection") of the above referenced facility located near Mt. Judea in Newton County. The inspection was conducted in accordance with the provisions of the Arkansas Water and Air Pollution Control Act and the regulations promulgated thereunder. At the time of the inspection, I noted the following:

- 1.) A copy of the site-specific Nutrient Management Plan (NMP) was not available upon request per Part 3.2.2.2 of the permit.
- 2.) No means of managing farm mortality was observed onsite. The facility NMP calls for composting and rendering; however, no equipment or structures for managing this waste stream was observed onsite. Since the farm will soon be in full production and will be generating a steady waste stream of dead pigs and afterbirth, the composting and/or rendering equipment mentioned in the NMP must be onsite and capable of managing such waste.
- 3.)  The wastewater pond liners were observed to have erosion rills, desiccation cracks and gravel to cobble-sized coarse content within the liner clay. If the liner is to be exposed for extended periods of time, it should be protected from deterioration by erosion and desiccation.
- 4.) During the review of the land application site maps, it was noted that a discrepancy may exist in the numbering of Field #5 and whether the field labeled as "Field 5" on the WMP map(s) is covered under a land-use agreement. This discrepancy must be resolved prior to beginning land application activities. Please revise the site map(s) and resubmit each map(s) to the Department.
- 5.) A review of the "Overall Site Map" found in Section F of the NMP did not appear to include buffer zones around all ponds, streams, and drainages. Per Condition 4.2.1.5 of the permit, please ensure all manure, litter, and process wastewater is not applied closer

(Continued)

than 100 feet to any down gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters; 300 feet of Extraordinary Resource Waters (ERW) as defined by the Department's Regulation No. 2; within 50 feet of property lines; or 500 feet of neighboring occupied dwellings. Attached to the inspection checklist are images of the land application fields with identified drainage features which were lacking buffers zones on the aforementioned map (see attachments 1-3). You may wish to flag or mark buffers and setbacks prior to land application activities.

- 6.) Condition 4.2.1.7 states, "wastes shall not be applied to slopes with a gradient of more than 15%." It appears Field #4 may contain slopes greater than 15%; and therefore, may not be usable for land application. The steep portion of Field #4 is marked in pink on the attached images (see attachments 1-3) included in the inspection checklist.

★ Although this was a compliance assistance inspection, the above items require your immediate attention. You must submit a written response to these findings to the Water Division Inspection Branch of this Department. This response should be mailed to the address at the bottom of the first page of this letter or e-mailed to [Water-Inspection-report@adeq.state.ar.us](mailto:Water-Inspection-report@adeq.state.ar.us). The response should contain documentation describing the course of action taken to address each item noted. This corrective action should be completed as soon as possible; however, the written response with all necessary documentation (i.e. photos) and individual item target completion dates is due by **September 24, 2013.**

If you have any questions or would like to discuss this inspection in greater detail, please contact me at 501-682-0659 or by e-mail at [bolenbaugh@adeq.state.ar.us](mailto:bolenbaugh@adeq.state.ar.us).

Sincerely,



Jason Bolenbaugh  
Inspection Branch Manager  
Water Division

cc: Water Division Permits Branch

**SEE: Inspection - Photo 1 dated 01/24/2014 to see results of "items that require your immediate attention" and actions taken concerning cobble-sized coarse content in the clay liner...**



Jason Henson  
C & H Hog Farms, Inc.  
HC 72 Box 10  
Mount Judea, AR 72655

September 20, 2013

**Re: Compliance Assistance Inspection (Newton Co)  
AFIN: 51-00164, Permit No.: ARG590001**

Jason Bolenbaugh  
Inspection Branch Manager  
Water Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

Dear Mr. Bolenbaugh:

Please accept this letter as the written response to your correspondence dated September 10, 2013, regarding the inspection performed at C & H Hog Farms near Mt. Judea in Newton County on July 23, 2013. The responses are numbered to correspond with the observations cited in your letter.

- 1.) The site-specific Nutrient Management Plan (NMP) has been onsite since construction began and was located in the office in the bottom drawer of the file cabinet at the time of the compliance assistance inspection. All three farm owners are aware of the exact location where the NMP is stored. Clearly, there was a miscommunication or misunderstanding about what the inspectors asked us to provide because the NMP would have been produced had it been clear to the owner that the inspectors wished to see a copy of it. C & H Hog Farms considers this action item complete.
- 2.) This was an inaccurate observation. C & H Hog Farms received approval from ADEQ in April 2013 to include the incineration method for farm mortality disposal in the NMP. (See "Approval of Construction Certification and WNMP Revisions" letter dated 4/15/13 posted on ADEQ's website, which is also included with this letter as an attachment) The integrator required C & H Hog Farms to have an operational means of managing farm mortality on the farm before hogs could be delivered to the premises. The incinerator has been onsite since April 2013 and was operational prior to the time the first hog ever arrived at the farm. The incinerator is located on the south side of the barns, directly west and in the line of sight of Pond 1. The inspectors walked around the entire bank of Pond 1 and would have easily been able to see the incinerator from this viewpoint. All owners and employees of the farm are aware of where the incinerator is located and would have been happy to point the incinerator out to the inspectors if it had

(Continued)

Mr. Jason Bolenbaugh  
September 20, 2013  
Page 2

**Letter and response from C&H Hog Farms to  
ADEQ** 

been clear that we were being asked to do so. C & H Hog Farms considers this action item complete.

3.) Immediately after this issue was brought to our attention by the inspectors, we performed the necessary maintenance on the minor erosion rills and desiccation cracks on Pond 2 and will continue to monitor this pond for any further deterioration. C & H Hog Farms considers the immediate action item complete and will continue to perform routine maintenance.

4.) C & H Hog Farms is working with an engineer to revise the maps as requested. Land application activities will not occur on Field 5 until the discrepancy is resolved.

5.) C & H Hog Farms is aware of the buffer zone requirements outlined in the permit and will adhere to said requirements during land application activities. C & H Hog Farms considers this action item complete.

6.) C & H Hog Farms is aware of Condition 4.2.1.7 and has no intention of land applying to any slope with a gradient of more than 15%. C & H Hog Farms considers this action item complete.

If you have any questions regarding our responses, please contact me by email at [chhogfarmsinc@yahoo.com](mailto:chhogfarmsinc@yahoo.com).

Sincerely,

*Jason Henson*

Jason Henson  
C & H Hog Farms, Inc.

Enclosure

Water Division Photographic Evidence Sheet

Location: **C&H Hog Farms**

Photographer: **Jason Bolenbaugh**

Date: **1/23/2014**

Time: **12:02**

Witness: **John Bailey, Jason Henson**

Photo #: **1**

Description:

**Inside of Holding Pond 2. Note erosion rills and unstabilized banks. Holding Pond Must Pumpdown elevation is indicated in red on the Must Pumpdown gauge.**

**2<sup>nd</sup> Compliance Inspection and Report after correspondence by the department to C&H asking for "immediate action" and response by C&H that they immediately took care of erosion rills and desiccation cracks on Pond 2?**



**Sources of C&H Hog Farms Clay Pond Liner Photographs**  
**(2013 thru 2015)**

**Arkansas ADEQ Inspections Reports**

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

**EPA Inspection 04/15/2014**

<https://www.adeq.state.ar.us/downloads/WebDatabases/InspectionsOnline/078360-insp.pdf>

**Oklahoma State University (OSU)– John Fields & Todd Halihan Electrical resistivity imaging (ERI) 03/14/2015**

[https://bigcreekresearch.org/electrical\\_resistivity/mtj-holding-pond/site-photos/docs/MTJ%20Holding%20Pond\\_Site%20Photos.pdf](https://bigcreekresearch.org/electrical_resistivity/mtj-holding-pond/site-photos/docs/MTJ%20Holding%20Pond_Site%20Photos.pdf)

<b>ADEQ</b>	
<b>Inspection Reports</b>	
<b>ARG590001</b>	
▼Additional Documents	▼Date
<a href="#">088608-insp.pdf</a> (pdf)	2015-12-30
<a href="#">081071-insp.pdf</a> (pdf)	2014-11-05
<a href="#">078360-insp.pdf</a> (pdf)	2014-04-15
<a href="#">075752-insp.pdf</a> (pdf)	2014-01-23
<a href="#">073447-insp.pdf</a> (pdf)	2013-07-23

**ADEQ Inspection Reports – Photo Logs**  
**Dates: 07/23/2013 through 12/30/2015**

**(Year 2016 Not availed online at this time ?)**



# APPENDIX F

Public Comments I submitted for the C&H Hog Farms request for a permit to install pond liners, cover and flare on August 10, 2015 trying to ask relevant questions about the Clay Liner and no direct response about the “cobble-sized course content within the clay liner” as noted in the departments on compliance and Inspection SEE: Appendix E.

The comments were relevant then, and is still very relevant .  
The 5264-W Draft Permit covers the Waste Storage as well as Liners.  
The “cobble-sized course content within the clay liner” are still there as documented by the departments on website.

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001\\_J%20Murdoch%20Public%20Comment%203\\_20150810.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/ARG590001_J%20Murdoch%20Public%20Comment%203_20150810.pdf)

<b>From:</b>	<a href="#">J. Murdoch</a>
<b>To:</b>	<a href="#">Water Draft Permit Comments</a>
<b>Cc:</b>	<a href="mailto:artzbarn@gmail.com">artzbarn@gmail.com</a>
<b>Subject:</b>	Fwd: Public Comment: C&H Hog Farm Permit Modification (Liners/Flare) (Please post my comments on your website, I spent a quite some time trying to put my concerns and comments down) ~ Thank you!!!
<b>Date:</b>	Monday, August 10, 2015 10:07:53 AM
<b>Attachments:</b>	<a href="#">CH Hog Permit Mod Liners Flare.doc</a>

**Comments to ADEQ Re: ARG590001, AFIN 51-00164  
C&H Hog Farm permit modification request to install pond liners, cover and flare**

**Pond Liners:**

A properly installed synthetic (multi – layer) liner system that included engineered leak detection specifications , leachate collection and removal system would have been more appropriate in the initial design of the Waste Lagoons. These should have followed the guidance of RCRA Subtitle D requirements for liners although it is not a RCRA facility. These waste lagoons are situated on karst and are allowed to leak via the general permit. Obviously, a permit allowing leakage of several thousands gallons of hog waste a day is acceptable by the Arkansas Department of Environmental Quality (ADEQ) . This permit modification request is another example of the "cart before the donkey" scenario just as the recent court ruling requiring a complete Environmental Impact Statement to be completed because one wasn't done prior to the permitting of this large scale swine concentrated animal feeding operation (CAFO) in a fragile ecosystem. This permit modification or "retrofit" appears to lack many engineering requirements. Adding a liner at this point could cause more damage (i.e. please review ADEQ inspector's notes and photos) if not properly installed. These waste lagoons are integrated with large and small consolidated rocks in the regolith ( i.e. soils) that need to be removed prior to the installation of the liners. That combined with the lack of a proper ground water detection monitoring well network surrounding the waste lagoons is one of the main reasons **I am against this permit modification.** I realize that a groundwater monitoring network is not part of this public comment, but I believe it to be an important component to this facility. Additionally, I didn't notice a construction quality assurance (CQA) plan for the installation of these liners. This makes this task (i.e. liners) substandard to write the least.

I would like to reference one of the first **ADEQ Compliance Assistance Inspections** for the C&H Hog Farms to help support my thoughts and concerns on the pond liner permit modification.

**"September 10, 2013 Jason Henson C & H Hog Farms HC 72 Box 10 Mt. Judea, AR 72655 Re: Compliance Assistance Inspection (Newton Co) AFIN: 51-00164, Permit No.: ARG590001"**

Link to ADEQ Inspections online:

<http://www.adeq.state.ar.us/downloads/webdatabases/inspectionsonline/073447-insp.pdf>

Please review the first page of the letter to C&H Hog Farms comment 3.

**"The wastewater pond liners were observed to have erosion rills, desiccation cracks and gravel to cobble-sized coarse content within the liner clay. If the liner is to be exposed for extended periods of time, it should be protected from deterioration by erosion and desiccation."** This was in reference to the existing clay liner.

Please look at the following pages for inspection photos showing the clay liner with **"cobble-sized coarse content within the liner clay"** on pages 8, 9 and 10. This is what C&H has for a clay lagoon liner presently which is unfit from an engineering standpoint.

I assume the erosion rills have been addressed. I mention the **"Compliance Inspection Report"** because **the ADEQ inspector must have felt it important enough to highlight (i.e. erosion rills, cobble sized rocks, etc.) in their report.** Please note white "cobbles" that appear to be chert and/or limestone in those photos. Even if these **"cobble-size"** consolidated materials met the specifications of the original construction design (i.e. which they should not have), it would be extremely difficult , if not impossible to remove these rocks since they are incorporated into the clay matrix before the synthetic liners are applied. Additionally, the vertical and horizontal components of hydraulic pressure from millions of gallons of hog waste have further imbedded these rocks into the sidewalls and bottom of the waste lagoons. Obviously, the consolidated rocks could be a threat to the proposed synthetic liner(s) with respect to damage (i.e. ripping) and potentially encapsulating underlying gases which could result in damage to the liners. Please review the photos of the chert and limestone and see if you feel this would meet engineering specifications for installation of a

synthetic liner. Are these liners going to require an engineering stamp from an Arkansas Professional Engineer (i.e. P.E.) after installation? Did an Arkansas P.E. design this proposed liner installation?

I was especially disturbed to discover after reading some of the BCRET Quarterly Reports that they appear to have a very **limited groundwater detection monitor** well network that should require quarterly monitoring. Again, I understand this is not a RCRA facility, but there are those that would argue that point. Two "interceptor trenches" on one side of the waste lagoons and one "house well" on the other side to monitor the waste lagoons leakage and possible water quality impacts to the groundwater is insufficient. **Until there is a proper ground water monitoring network, the liners should not be permitted.** Many still have to rely on groundwater for their primary drinking water source in the surrounding area. ADEQ is putting citizens of the State of Arkansas at risk because of the flawed design at this CAFO.

**From several of the BCRET Quarterly Reports (2014-2015):**

"Continued collection weekly base flow and periodic storm flow water samples from Big Creek above and below the C&H Farm, along with water from the spring, culvert, surface runoff sites on Fields 1,5a, and 12, **interceptor trench** below the slurry holding ponds, and **house well** for chemical analysis." This is insufficient for monitoring groundwater surrounding the waste lagoons.

I feel **impact (i.e. past and future) of the waste lagoons' degradation to the groundwater (i.e. synthetic liners or not) will not be detected without a strategically sited groundwater detection monitoring well network**. It is apparent that better coverage to delineate groundwater contamination that could and/or is emanating from the waste lagoons could be done with a groundwater monitoring network surrounding the waste lagoons. If the lagoons have been leaking the allowable permitted limit, (i.e. estimated at **several thousand gallons a day [pre-liner]**), the swine waste must be going somewhere. Plant nutrient uptake is nonexistent in this scenario because the swine waste is below the soil and in the bedrock. **Will the permitted leakage remain in the permit once the liners are in place?** If so, this confirms that leakage of toxic swine waste from the waste lagoons continues to be acceptable by ADEQ. This is pathetic to write the least. One hopes everything at this state of the art facility is going to work as the engineers who designed it dreamed. If not, who will be at loss here?

### **Gas Flare and Cover System:**

This appears to be another request to modify this "state-of-the-art" facility. This system might provide a reduction in some gas emissions, but it does not address the emission of exhaust gasses and particulate mater from the large exhaust fans of the two industrial swine buildings, nor does it address the issues of the fate of those bi-products concerning the health of the residents and nearby school through the risk pathway of inhalation. I feel there are already serious airborne health issues that are not being monitored. The design appears to lack any air quality monitoring. Potential health risk to the people of all ages that are impacted by this hog factory, is ongoing. So adding additional "unknown" emission(s) is only another weak link in this "state-of-the-art-make-it-up-as-you-go facility".

Additionally, adding a flare system that may be unmonitored for exhaust emissions is unacceptable. There is no mention of any type of explosive detection and/or warning system(s) to alert if something went critical. This is a Occupational Health and Safety (OSHA) protocol that is being neglected. I appreciate this opportunity to comment.

**August 07, 2015**

**John Murdoch, Wesley, AR 72773**



## **APPENDIX G**

Examples of why accurate "Below Ground Surface" measurements are important. They are reference points that one can compare to other reference points like the elevation (bgs) of the Waste Lagoons..

Page 7 Field Notes

Harbor Senior Project Manager,  
Thomas Huetter, P.G., supervised field activities.

Location C&H HOG FIELDS Date 9/22/10

7

Project / Client ADEQ

0931:	BEGIN PURGING BOREHOLE WATER LEVEL AT 61.48' BELOW TDC.
0944:	WATER LEVEL AT 65.40' AFTER REMOVAL OF ≈ 12 GALLONS OF WATER.
1006:	DRILLER TRIPPING 150-FLO SAMPLER IN HOLE.
1022:	G.W. MEASURED AT ≈ 60' BGS. DRILLER HAS USED ≈ 200 gallons
1047:	COLLECT GROUND WATER SAMPLE B-1 GW-1 PLUS DUPLICATE BD-2

## Findings and Conclusions

Despite the limitations regarding the overall scope of work, HGI is confident in the observations collected during rock core inspection. The drilling program that was observed between September 21 and 23, 2016 did not indicate any significant water bearing zones. **The highly weathered limestone bedrock and unconsolidated clay intervals observed between 13.8 and 28.0 ft.bgs. appeared to have the characteristics of epikarst. With the understanding that epikarst is the weathered zone found at the interface of unconsolidated soils and bedrock, the Site setting would support this characterization.**

As noted in the boring log included as Attachment 1, the limestone bedrock at the Site is a part of the Boone Formation, a Mississippian aged limestone<sup>2</sup>. Core analysis from 28.0 ft.bgs. to the final termination depth of 120 ft.bgs. confirmed the characteristics of the Boone Formation, with evidence of sub-members such as the Short Creek Oolite and St. Joe Limestone member<sup>3</sup>. Characteristics defined in the boring logs included fossiliferous limestone ranging from fine grained biomicrite to coarse grained biosparite. Bedding planes were horizontal, with limited fractures and dissolution features. Although there were zones of thin bedding that appeared to be mechanically broken by the drilling process, there were no significant karst related voids identified in core recovery or by driller observation. **The primary karst feature during the drilling of B-1 is the previously identified epikarst zone noted between 13.8 ft.bgs. and 28.0 ft.bgs.**

HGI appreciates the opportunity to assist Harbor on this important project. If you have any questions or concerns regarding the evaluation of subsurface geology presented herein, please do not hesitate to contact me directly at (317) 601-3117.

Sincerely,  
Hydrogeology, Inc.

Tai T. Hubbard, LPG IN-2253 / AR No. 14  
Senior Geologist

From the original NOI: (ARG590001\_NOI and NMP\_20120625.pdf)

Various Engineering Drawings, some with the State Seal. These are references. References like the NOI Bench Marks, the red dots were added to help define location. I cut the legend that was turned vertically in the drawing to make it easier to read those elevations. (TBM1= 925.68', TBM3=914.71').

Reference Points the engineers used to plan this facility, reference points for the only other boreholes to aid in review of the lithology. These appear to be lower in elevation than the State of Arkansas Certified "Surveyed Boring Location" of 930.61' ?

Benchmarks				
TBM #	Northing	Easting	Elevation	Description
1	580,264.50	994,267.97	925.68	Elevation
2	580,715.06	994,563.20	915.64	Elevation
3	580,375.60	994,600.08	914.71	Elevation
4	580,090.02	994,770.77	889.80	Elevation



Benchmarks				
TBM #	Northing	Easting	Elevation	Description
1	580,264.50	994,267.97	925.68	Elevation
2	580,715.06	994,563.20	915.64	Elevation
3	580,375.60	994,600.08	914.71	Elevation
4	580,090.02	994,770.77	889.80	Elevation



Reference Points, Datums, Other words, known surface elevations...

**GENERAL NOTES**

**LEGEND**

- BENCHMARK
- BUILDINGS
- FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 75 150 225 300

**DATE:** APR. 30, 2012 **SHEET:** 3

**SCALE:** 1" = 150'

**DRAWN BY:** NAD

**CHECKED BY:** DLD

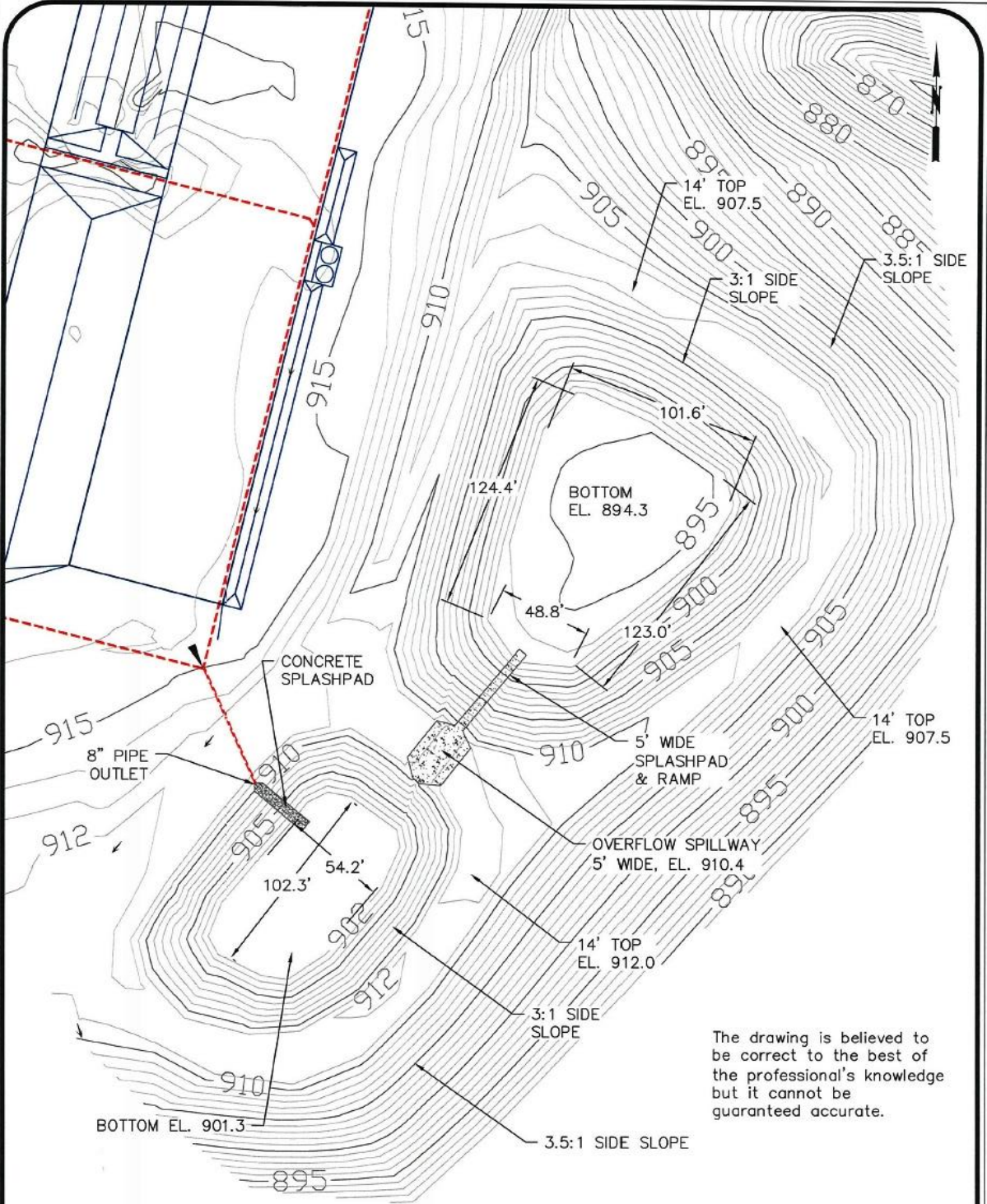
**C & H HOG FARMS**  
 GESTATION-FARROWING FARM  
 SECTION 28, T 15 N, R 20 W  
 NEWTON COUNTY, AR

**PROPOSED SITE PLAN**

**Dattoon, Grabs & Associates, LLC**  
 Consulting Engineers  
 PO Box 622, Mendon, MO 64514  
 (707) 643-1114, FAX: (707) 642-1364  
 www.dgpaengineering.com

No. \_\_\_\_\_ Date \_\_\_\_\_

Revision/Issue \_\_\_\_\_



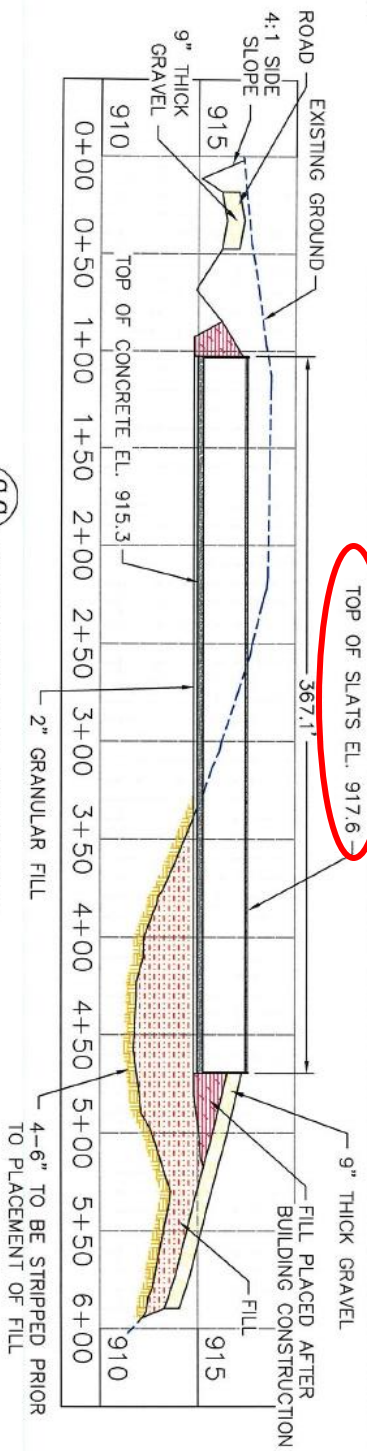
The drawing is believed to be correct to the best of the professional's knowledge but it cannot be guaranteed accurate.

Elevations here appear  
Be lower than "Surveyed Boring  
Location" 930.61 ?

<p><b>GENERAL NOTES</b></p> <p>LEGEND</p> <ul style="list-style-type: none"> <li>◆ BENCHMARK</li> <li>■ BUILDINGS</li> <li>--- FENCELINE</li> <li>- - - CULVERT/PIPE</li> <li>← DRAINAGE ARROW</li> </ul> <p>SCALE FEET</p> <p>0 25 50 75 100</p>								
<p>DATE: APR. 30, 2012</p> <p>SCALE: 1" = 50'</p> <p>DRAWN BY: NAP</p> <p>CHECKED BY: DLD</p>	<p>SHEET: 7</p>							
<p><b>O &amp; H HOG FARMS</b> GESTATION-FARROWING FARM SECTION 86, T. 18 N. R. 80 W. NEWTON COUNTY, AR</p> <p><b>WASTE STORAGE POND</b> FINAL DESIGN</p>								
<p><b>Dehaan, Grabs &amp; Associates, LLC</b> Consulting Engineers PO Box 822, Mondon, MO 65554 (701) 663-1116, FAX (701) 667-1356 www.dgengineering.com</p>								
<table border="1"> <thead> <tr> <th>No.</th> <th>Revision/Issue</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>As Built</td> <td>4/17/13</td> </tr> </tbody> </table>		No.	Revision/Issue	Date	1	As Built	4/17/13	
No.	Revision/Issue	Date						
1	As Built	4/17/13						

FILE NUMBER OF PROJECT: 15552/SHMP/ARSDON/01252012/AR

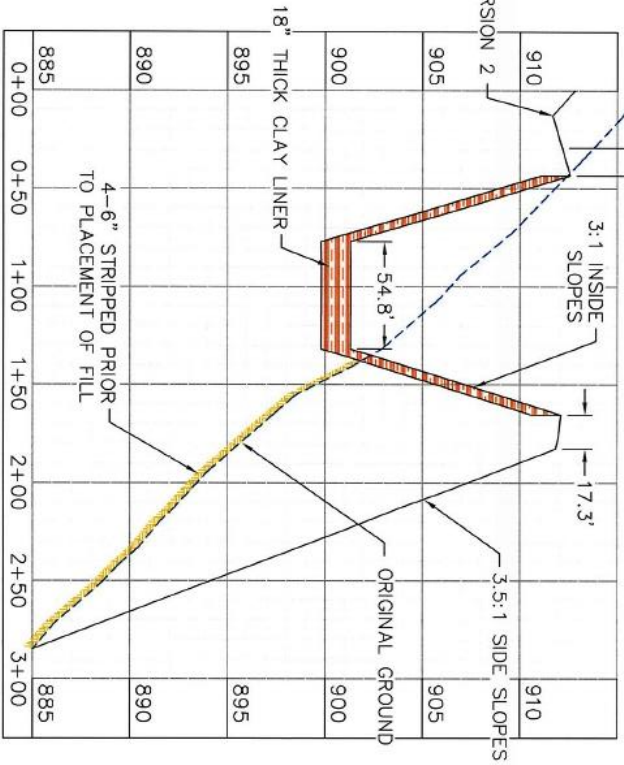
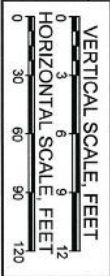
**Elevation for the Barn Slatted Floor = 917'**



SCALE:  
VERTICAL: 1"=6'  
HORIZONTAL: 1"=60'

G-C  
8

**BARN CROSS SECTION**



D-D  
8

**WASTE STORAGE POND 1 CROSS SECTION**

The drawing is believed to be correct to the best of the professional's knowledge but it cannot be guaranteed accurate.

- GENERAL NOTES
- GRAVEL
  - FILL
  - CONCRETE
  - STRIPPING
  - EXISTING GROUND



No.	1	As Built	4/1/13
Revision/Issue			Date

**DeHaan, Grabs & Associates, LLC**  
Consulting Engineers  
PO Box 522, Mondak, MD 28654  
(701) 665-1116, FAX: (701) 667-1366  
www.dgceengineering.com

**C & H HOG FARMS**  
GESTATION-FARROWING FARM  
SECTION 26, T. 16 N. R. 20 W.  
NEWTON COUNTY, AR

**WASTE STORAGE POND & BARN CROSS SECTIONS**

DATE: APR 30, 2012 SHEET: 10

SCALE: AS SHOWN

DRAWN BY: NAP

CHECKED BY: DLD

FILE NAME: G:\PROJECT\1627\HMK\JOBNO\270232\PLAN

**Elevations appear Be lower than the one "Surveyed Boring Location" 930.61 ?**

**Source:**  
Harbor Drilling Study Addendum

Datum or known reference point. From this certified "Elevation", notations contained within in the Final Report were noted in "Below Ground Surface or bgs). Important information including soil and rock core samples/log, epikarst zone, lost drilling fluid, geophysical data, etc. All of this is referenced from the surface elevation of 930.61' . ★

Included are Engineering Drawings from the NOI as well as the "As Built" drawings. Sheet 10 below shows "Top of Slats El. 917.6" for the barn. ★ "The Surveyed Boring Location" appears to be 10 to 15' higher in elevation than any elevations recorded on the Engineering Drawing(s) provided below.



**"Elevation 930.61'"** ★

**Certification**  
I hereby certify that the above described and depicted information is true and accurate to the best of my ability and that the positional accuracy is at or above the minimum standards for an Arkansas land survey.

JOHNNY R. TWEEDLE



**SURVEYED BORING LOCATION**  
C & H HOG FARM - SITE LAYOUT MAP  
MT. JUDEA  
NEWTON COUNTY, ARKANSAS

