
September 28, 2022

Patrick Moore, Superintendent
Eastern Oklahoma Tribal Schools Choctaw Nation Jones Academy
909 Jones Academy Rd.
Hartshorne, Oklahoma 74547

Re: General Permit Authorization No. OKLAS2200006 - Approved
One-time Land Application of Biosolids
Jones Academy Wastewater Treatment Facility
Facility No. S-20660
OPDES Permit No. N/A

Dear Mr. Moore:

The Oklahoma Department of Environmental Quality (DEQ), Water Quality Division (WQD) is enclosing the authorization to operate in compliance with General Permit No. OKLAS2200006, for a one-time application of biosolids from the Jones Academy (Academy) Wastewater Treatment Facility. The Academy's application for this authorization was submitted to DEQ on May 18, 2022. The Academy submitted additional information on August 5, 2022.

This authorization is approved in accordance with requirements of Oklahoma Administrative Code (OAC) 252:606, as adopted and promulgated pursuant to the Environmental Code, 27A Oklahoma Statute (O.S.) Supp. 2011.

The authorization is for a one-time application of biosolids to the following sites:

Site 1: 467 acres located within the W ½ of Section 28, Township 5 North, Range 17 East of the Indian Meridian, Pittsburg County, Oklahoma.

The sludge operation authorized by this permit should be maintained in accordance with the plan approved by DEQ on September 2, 2022. DEQ must approve any deviation from the approved plan in writing before changes can be made. I am returning a copy of the signed Permit for your records. Please feel free to contact me at (405) 702-8109 or write to me at the letterhead address if you have any questions or concerns.

Sincerely,



Toby Harden, P.E., District Engineer
Municipal Wastewater Enforcement Section
Water Quality Division

Enclosure: As stated

TWH/MM/hb

MH/TJB

cc: Aaron Gruenwald, Project Manager, Hodges Farm and Dredging
Jonathan Schulz, ECLS, McAlester DEQ Office
Jeff Brents, ECLS, Regional Manager, DEQ

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AUTHORIZATION FOR ONE TIME LAND APPLICATION OF SEWAGE SLUDGE
UNDER GENERAL PERMIT NO. GP-OK65S
AUTHORIZATION NO. OKLAS2200006**

In compliance with Oklahoma Statute, 27A § 2-14-305 (2011) as amended, and the Rules of the Oklahoma Department of Environmental Quality (DEQ) promulgated thereunder, and in reliance on the certified statement and representation heretofore made in its application:

Eastern Oklahoma Tribal Schools Choctaw Nation Jones Academy
909 Jones Academy Road
Hartshorne, Oklahoma 74547
Facility No. S-20660

is hereby authorized for a one-time land application of biosolids from the Jones Academy Wastewater Treatment Facility to the following site:

Site 1: 467 acres located within the W ½ of Section 28, Township 5 North, Range 17 East of the Indian Meridian, Pittsburg County, Oklahoma.

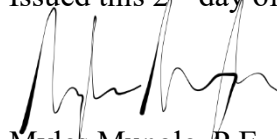
whose site-specific and land application site conditions conform to/with requirements established under 40 Code of Federal Regulations (C.F.R.) Part 503, and in accordance with sewage sludge characteristics, monitoring requirements, and other conditions set forth in General Permit No. OK65S, and in Parts I and II, hereof.

Issuance of this Authorization in no way or in any respect affects the Permittee's civil or criminal responsibilities regarding beneficial reuse by land application of sewage sludge, except with respect to the Permittee's legal responsibility under the Environmental Code and Rules promulgated by the Board of Environmental Quality to obtain this permit.

This Authorization is non-transferable and is granted summarily by and at the discretion of the Executive Director in accordance with applicable DEQ Rules and provisions of the above-referenced Permit.

This is to certify that the proposed beneficial reuse by land application of biosolids set forth in this Authorization meets the requirements of DEQ Rules, provided the Permittee does not exceed the loading rates and/or metal concentrations set forth in this Authorization.

Issued this 2nd day of September 2022.



Myles Mungle, P.E., Engineering Manager,
Municipal Wastewater Enforcement Section
Water Quality Division

NOTE: Expiration date is upon completion of existing biosolids removal from the lagoons at the Wastewater Treatment Facility.

PART I: MONITORING, LOADING RATES, METAL CONCENTRATIONS AND OTHER REQUIREMENTS.

SECTION A - MONITORING REQUIREMENTS

During the period beginning on the effective date and lasting through the expiration date of this Authorization, the Permittee shall monitor all land application of sewage sludge in accordance with the following schedule.

Pollutants shall be monitored at the frequency schedule(s) shown below:

Amount of Sewage Sludge* (Metric tons/365 day period)	Frequency
0 ≥ Sludge ≤ 290	Once/Year
290 ≥ Sludge ≤ 1,500	Once/Quarter
1,500 ≥ Sludge ≤ 15,000	Once/Two Months
15,000 ≥ Sludge	Once/Month

*The amount of bulk sewage sludge applied to the land (dry weight basis).

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 40 C.F.R. § 503.8 (b) (2011).

The required monitoring results shall be retained for the period of the Authorization. The results shall be submitted to the Department as follows:

SAMPLING FREQUENCY	REPORTING DEADLINE(S)
Yearly	
January	February 28
Quarterly	
January, February, and March	April 28
April, May, and June	July 28
July, August, and September	October 28
October, November, and December	January 28
Bi-monthly	
January-February	March 28
March-April	May 28
May-June	July 28
July-August	September 28
September-October	November 28
November-December	January 28
Monthly Sampling	Due the 28th of the following month

SECTION B - LOADING RATES AND METAL CONCENTRATIONS

In addition to all other requirements and conditions of this General Permit, the Permittee is authorized to land apply sewage sludge only upon the condition that the pollutant ceiling concentration and cumulative pollutant loading rate shall not exceed the listed numerical limits. Metal concentrations of sewage sludge - Sewage sludge shall not be applied to the land if the concentration of any of the pollutants exceeds the following pollutant concentrations:

TABLE 1	
Pollutant	Ceiling Concentrations (milligrams per kilogram) *
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

*Dry Weight Basis

Cumulative Pollutant Loading Rate Limits:

TABLE 2	
Pollutant	Cumulative Pollutant Loading Rate (kilograms per hectare)
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Molybdenum	Monitor
Nickel	420
Selenium	100
Zinc	2800

All bulk sewage sludge which is applied to agricultural land, forest, or a reclamation site shall be treated by either Class A or Class B pathogen reduction requirements as defined in Part I Section 1.B.5 of the General Permit. The Permittee may land apply sewage sludge only during the effective date of this Authorization and shall immediately cease and desist any and all land application of sewage sludge made pursuant to such Authorization upon its expiration or at any time the required monitoring indicates that the cumulative loading rate is greater than the allowable rate set forth in this Authorization.

PART II: SPECIAL AND STANDARD CONDITIONS

SECTION A - SPECIAL CONDITIONS

1. There shall be no runoff or discharge from the land application site.
2. The commingling of sewage sludge with any other type of sludge or wastewater intended for land application is not allowed under this Authorization. Sludge which results from the commingling of sewage and any other additive shall not be land applied under this Authorization.
3. Special conditions and/or modification for specific land application sites will be included in the Authorization as necessary to protect the waters of the State.
4. When storage of sewage sludge is necessary, prior to land application, the sludge must be stored in a manner to prevent pollution to the waters of the State.
5. The Permittee is hereby given notice that this Authorization is in all respects subject to compliance with any and all applicable and relevant terms, conditions, provisions and requirements and any and all amendments of the laws of the State of Oklahoma and the Board of Environmental Quality's Rules. The absence of any express reference within this Authorization to any particular statutory requirement, rule(s) or standard(s) shall in no respect be deemed or construed to exempt or preclude the application of such requirement, rule(s) and standard(s) to this Authorization or the Permittee. By approval, grant and issuance of this Authorization, Permittee acknowledges receipt of true, correct, and current copies of the Board of Environmental Quality's rules (as amended) provided, however, that Permittee further acknowledges that any and all amendments thereto shall become part of this Authorization.

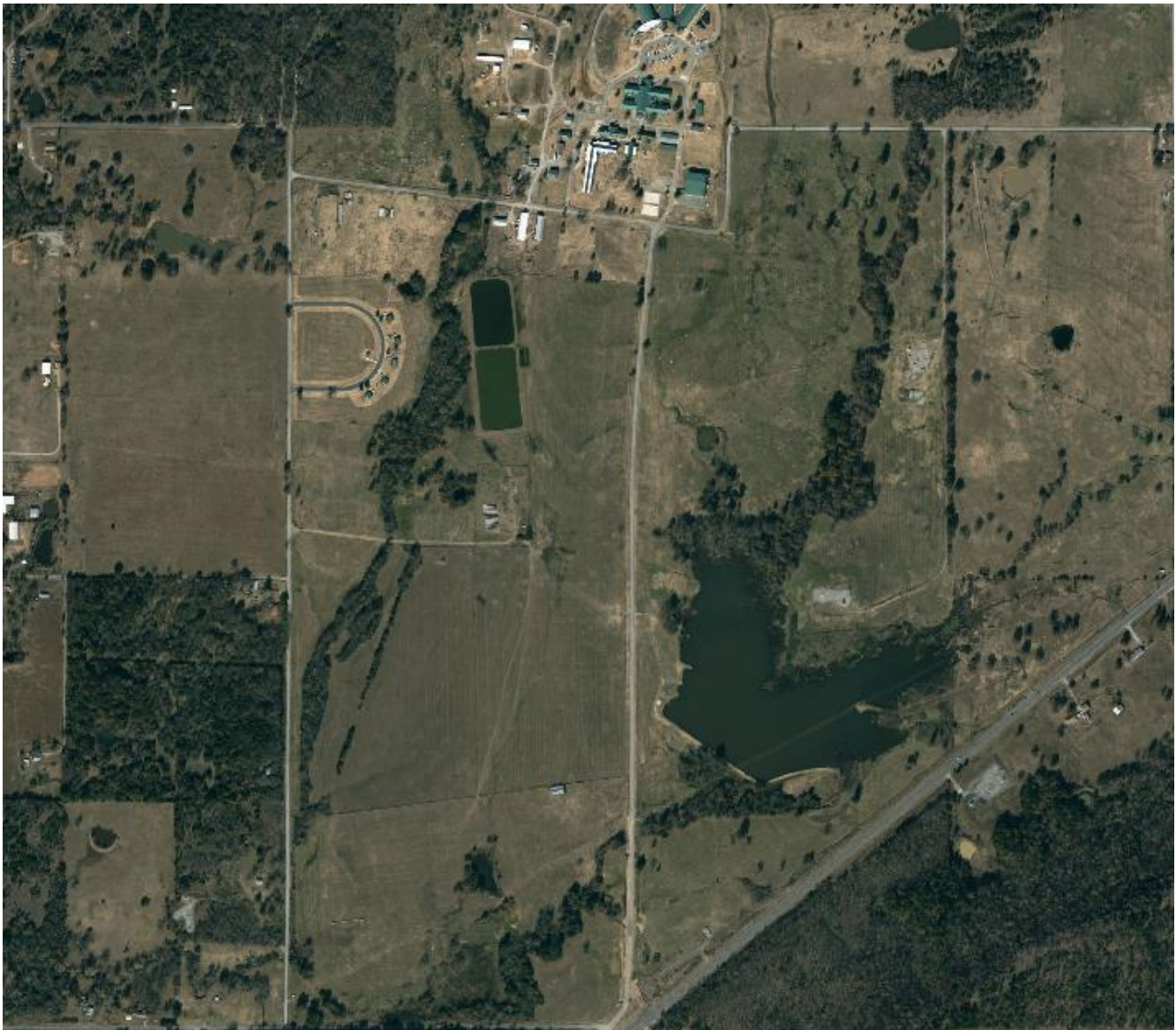
SECTION B - STANDARD CONDITIONS

1. Duty to reapply: If the Permittee wishes to continue an activity regulated by this Authorization after the expiration date of said Authorization, the Permittee must reapply for and obtain a new Authorization. Application for renewal shall be submitted at least ninety (90) days before the expiration date of the original Authorization. The Department may grant permission to submit a renewal application out of time but not later than the original Authorization expiration date.
2. Duty to provide information: The Permittee shall furnish to the Department, within reasonable time, any information which the Department may request to determine whether cause exists for modifying or revoking the Authorization, or to determine compliance with the Authorization.
3. Facilities operation: All facilities and equipment used by the Permittee shall be operated as efficiently as possible and be maintained in good working order so as to achieve compliance with the terms and conditions of this Authorization.

4. Right to entry: The Permittee shall allow any representative of the Department, upon presentation of credentials to a responsible person to:
 - a. Enter upon the Permittee's premises where sewage sludge is being land applied or where any records are required to be kept under the terms and conditions of the permit.
 - b. At reasonable times have access to and copy any records required to be kept under the terms and conditions of this Authorization; to inspect any equipment utilized in the land application of the sewage sludge; to take photographs; and to sample the sewage sludge being land applied or the soil at the land application site.
 - c. Enter upon the Permittee's premises to examine and inspect any facilities and equipment covered under the terms of the permit.
5. Monitoring and reporting: All monitoring and reporting shall be in accordance with Part I, Section A of the Authorization.
6. Noncompliance notification: If, for any reason, the Permittee does not comply with or is unable to comply with any term(s) or condition(s) of the permit, the Permittee shall within five (5) days of becoming aware of such condition, provide the Department with the following information in writing:
 - a. Description of the noncompliance and the cause; and
 - b. the period of noncompliance, including exact dates and times; or, if not corrected the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncompliance.
7. Sludge application limitations: Sewage sludge shall not be applied to any site which is flooded, frozen, snow covered or within 10 meters of any water of the U.S.

RECEIVED
MAY 18 2022
WATER QUALITY DIVISION

HODGES FARMS & DREDGING, LLC



Request for One Time Application of Biosolids
Eastern Oklahoma Tribal Schools Choctaw Nation Jones Academy
Hartshorne, OK
Facility ID #S-20660

Oklahoma Department of Environmental Quality
Water Quality Division

April 5, 2022

TABLE OF CONTENTS

Section A:	Biosolids Management Operations Plan
Section B:	Applicant / Facility Information
Section C:	Contractor Information
Section D:	Disposal Sites Owner and Operator Information
Section E:	Documentation for Site Owner
Section F:	Analytical Information – Table 1
Section G:	Analytical Information – Pathogen Destruction Criteria for Class B
Section H:	Analytical Information – Vector Attraction Reduction Criteria
Section I:	Site(s) Legal Description
Section J:	Site(s) USGS Topographic Map
Section K:	Site(s) Soil Testing
Section L:	Site(s) Web Soil Survey Map
Section M:	Site Soil Reports
Section N:	Spill Prevention, Control Plan, and Emergency Response
Section O:	Other Information

Exhibit A:	Proof of Ownership and Supporting Documentation
Exhibit B:	Operator Agreement
Exhibit C:	PAN Calculations and Analytical Results – Metals, Nutrients, TCLP and PCB
Exhibit D:	Analytical Results – Fecal
Exhibit E:	Soil and Application Map
Exhibit F:	Soil Sample Results – Agronomy
Exhibit G:	Soil Sample Results – Metals
Exhibit H:	Soil and Application Map
Exhibit I:	NRCS Site Soil Report
Exhibit J:	Oklahoma Department of Environmental Quality Form 850SMP
Exhibit K:	Oklahoma DEQ Application for Land Application
Exhibit L:	Master Site List – Field 1

SECTION A – BIOSOLIDS MANAGEMENT OPERATIONS PLAN

Eastern Oklahoma Tribal Schools Choctaw Nation Jones Academy operates a two-cell flow through lagoon system built circa 1940. The facility is a non-aerated facultative lagoon system located at 909 Jones Academy Road, Hartshorne, OK. Biosolids have accumulated since construction. This Biosolids Management Plan is for the removal and disposal of approximately 560 dry tons of biosolids from the lagoon system that is being cleaned as part of the Lagoon and Land Application Improvements project upgrade.

Biosolids will be disposed of via land application directly adjacent to the two-cell lagoons. The surrounding land is owned by Jones Academy and utilized for grazing land and/or farm land. The nearest residence is approximately 1,100 feet to the northwest of the site and the topography of the site is relatively flat with no slope exceeding 5%.

Dewatering will be accomplished by the pumping of cell effluent into the adjacent cell. Pumping will stop when the effluent is removed and sludge is encountered. Sequence of lagoons will be north cell and then south cell. Once removal of residuals from the north cell is complete surface water from the south cell will be pumped to north cell.

A lagoon crawler will be utilized to thoroughly mix the material once effluent water has been removed. This will ensure a consistent mix of biosolids. A dozer with a push blade will be utilized to move the biosolids to a lagoon pump and tractor. In order to limit disturbance of the lagoon floor, HFD will implement controls to limit the disturbance to the clay liner. The installation of a blunt/round pipe mounted to the dozer blade will be utilized. The dozer or any other equipment used on the bottom of the lagoon will be of the low ground pressure type.

Solids removal will be completed with a pump and hose system. Solids will be pumped via 8"/10" hose to the applicator tool bar and directly land applied.

The following conditions will be met for land application:

- Soil type and texture are suitable for the type of waste that will be land-applied.
- Areas of application meet topography requirements as stated in 252:606-8-6 for having minimal slope to prevent ponding and soil erosion.
- Target land application rates are based upon soil crop need for nitrogen and phosphorus.
- Water drainage characteristics for the site are suitable to avoid migration and runoff of biosolids from the site. For example the following will be implemented:
 - ✓ Avoid seasonal high groundwater periods on poorly and somewhat poorly drained soil.
 - ✓ Avoid sites not intended to be vegetated.
 - ✓ Maintain at least a 100-foot setback for incorporated/injected material from drainage pathways or unsuitable soil and steep slopes when water is present (252:606-8-3 c 17).
 - ✓ Maintain at least a 33-foot setback for incorporated/injected applied material from drainage pathways or unsuitable soil and steep slopes when water is NOT present
 - ✓ Avoid areas subject to frequent flooding or ponding.
 - ✓ Maintain at least a 250-foot setback from private domestic water supply wells (252:606-8-3 c 18).

Fields will not be land-applied when runoff may result, during periods of high groundwater conditions or during periods of flooding.

Recommendations for crop nitrogen and phosphorus will guide application rates. We are limited to an approximate max hydraulic application rate of 30,000 gallons per acre. Rate is limited by percent solids. 1 dry tons per acre should provide ~3 lbs of nitrogen, 1 lbs of phosphorus, and 7.5 lbs of potassium based on testing. All sites receiving Jones Academy biosolids will be managed as grass hay/bermudagrass.

The following site conditions will be observed:

- Food, feed, and fiber crops will not be harvested for 30 days after application of biosolids.
- Livestock will not be allowed to graze on the land for 30 days after application.
- Public access to the land with a low potential for public exposure will be restricted for 30 days after application.

SECTION B – APPLICANT / FACILITY INFORMATION

Legal Name of Applicant: Eastern Oklahoma Tribal Schools Choctaw Nation Jones Academy

Mailing Address of Applicant: 909 Jones Academy Road, Hartshorne, OK 74547

Applicant Contact: Patrick Moore

Applicant Phone: 580.924.8280

Facility Name: Jones Academy Treatment Facility

Facility Address: 909 Jones Academy Road, Hartshorne, OK 74547

Facility Phone Number: 888.767.2518

Facility Latitude: 34° 52' 50" N Longitude: 95° 31' 14" W

Facility Contact Name: Patrick Moore

Facility Contact Phone: 580.924.8280

SECTION C – CONTRACTOR INFORMATION

Hodges Farms and Dredging
501 N West Street
Lebo, KS 66856

Jeff Hodges Owner: 620.343.0513

Aaron Gruenewald Managing Director: 920.373.8715

SECTION D – DISPOSAL SITES OWNER AND OPEARATOR INFORMATION

Site 1: Deeded Acres – 467.52 Ac

Site Owner: Jones Academy

Owner Address: 1266 Jones Academy Road, Hartshorne, OK

Operator: Jones Academy

Address: 1266 Jones Academy Road, Hartshorne, OK

Phone: 888.767.2518

SECTION E – DOCUMENTATION OF SITE OWNER

Proof of ownership and supporting documentation is included in Exhibit A. Operator Agreements are included in Exhibit B.

SECTION F – ANALYTICAL INFORMATION

A Residuals Sampling Summary Form and Residuals Field Loading Report are included as part of Exhibit C. All analytical results (Pace Analytical, Inc.) are also included in Exhibit C. All analytical results are below Table 1 Ceiling Metal Concentrations and 40 CFR 503 Low Metal Ceiling Concentrations as indicated on the Field Loading Report (Exhibit C).

SECTION G - ANALYTICAL INFORMATION – PATHOGEN DESTRUCTION CRITERIA FOR CLASS B

Pathogen Reduction (40 CFR 503.32) for Class B Biosolids was met by Alternative 1 (Fecal Coliform Geometric Mean of 7 samples is < 2,000,000 MPN or CFU/gram dry weight basis) as shown in the following table. Exhibit D includes Pace Analytical results from March 8, 2022.

Sample ID	Results (cfu/g)
1-Fecal	<586
2-Fecal	<515
3-Fecal	<638
4-Fecal	<666

- Pace Analytical, Inc.

SECTION H - ANALYTICAL INFORMATION – VECTOR ATTRACTION REDUCTION CRITERIA

Jones Academy biosolids will be incorporated per Title 252 Chapter 606 and to meet Vector Attraction Reduction (VAR) criteria.

SECTION I – SITE(S) LEGAL DESCRIPTION (Includes the following 1 site)

Part 1 of Site 1: Par of the W ½ of Section 28, Town 5N, Range 17E, Pittsburg County
Location: 34° 52' 30"N, 95° 31' 15"W – Deeded Acres: 467.52

SECTION J - SITE(S) USGS TOPOGRAPHIC MAP

Plat maps/aerial photographs of the proposed sites indicating soil type, setbacks, and areas of no application are included in Exhibit E. The maps for each site show:

- ✓ Homes and buildings adjacent or near the proposed land application sites
- ✓ Lakes, ponds, wetlands, dry runs, and streams
- ✓ Section lines or other legal boundaries, generally as shown on a plat map
- ✓ Setbacks as it relates to injection application

SECTION K - SITE(S) SOIL TESTING

Soil samples and associated 252:606-8-3 required results are included in Exhibit F and G.

SECTION L - SITE(S) WEB SOIL SURVEY MAP

Web Soil Survey maps are included in Exhibit E. A complete Site Soil Report for Site 1 is included in Exhibit H. Borings/field investigation will be completed to ensure saturated soil conditions do not exist at the time of application. Portions of the fields that have the presence of seasonal high groundwater (saturated soil conditions) at the time of application will NOT be applied.

SECTION M – SITE SOIL REPORTS

Depth to groundwater was analyzed by a review of the site soils. Parts of Site 1 require setbacks from surface water. The fields have a depth to groundwater greater than 200 cm (>6.5'). A complete Site Soil Report for Site 1 is included in Exhibit H which further describe the soil types found within each site.

SECTION N – SPILL PREVENTION, CONTROL PLAN, AND EMERGENCY RESPONSE

In the unlikely event of a spill, the following actions will be taken immediately.

Halt Source of Spill. Use of any leaking or damaged unit which is causing the spill will cease immediately. The unit will be repaired before resuming its use.

Contain Spill. In the event large quantities of biosolids have been spilled, appropriate barriers will be used to contain the spill and prevent motorists from driving through it.

Clean-Up. Depending on the type and amount of biosolids spilled, a variety of equipment may be used to remove the biosolids: front-end loader, shovels and brooms and vacuum equipment of a liquid biosolids applicator. Any biosolids removed from the spill site will be spread on an approved application site, returned to the lagoon, or disposed of in an approved landfill.

Final Clean-Up. Flush roadways with water or sweep as necessary to clean. Allow to dry and incorporate if spill occurs on non-paved and tillable area. In the event a spill occurs on private property, final clean-up should be completed immediately to the satisfaction of the owner.

Management of Clean-Up Efforts. The Project Manager will take immediate charge and initiate clean-up activities. Hodges Farms and Dredging labor will be used, with additional labor secured as needed. The Project Manager will also communicate with the public on the scene, answering questions and advising of clean-up activities.

Reporting. All spills will be reported immediately. State and local agencies will be notified in accordance with their notification requirements.

Within 72 hours of the spill, the Project Manager will send a written report detailing how the spill occurred and remedial action taken.

Spill Prevention. The Project Manager will implement the following spill prevention measures:

- 1) Ensure loader operators do not overload trucks/trailers/tanks;
- 2) Ensure trailer hatches are closed and latched while transporting;
- 3) Ensure trailer seals are inspected on a daily basis and replaced as necessary; and
- 4) Ensure unloading operations in the field are conducted to minimize any potential runoff or tracking.

Environmental Protection, Dust Control, Mud, and Noise Control

Hodges Farms and Dredging will provide adequate methods to minimize dust from the plant site. Such methods include, but are not limited to:

- Water.
- Selecting work and staging areas, based upon existing current conditions, which will not cause excessive dust generation.

Hodges Farms and Dredging will have tools and equipment for sludge and mud removal from trucks and pavement.

Hodges Farms and Dredging will adjust procedures and hours of operation, as necessary, to mitigate excessive noise emanating from the site.

SECTION O – OTHER INFORMATION

All pertinent and applicable information is included in attached Exhibits A through L.

Anticipated 2.259 lbs of Nitrogen per dry ton. Bermudagrass at 6 tons per acre yield goal has application rate of 230-235 lbs of nitrogen per acre. Application rates will vary from 8.0 dry tons per acre to 10.0 dry tons per acre. Application rates will be limited hydrologically not by crop application rates for nitrogen or phosphorus. Bermudagrass utilizes nitrogen and phosphorus for growth.

At an application rate of 8% solids and ~10 dry tons per acre (25 lbs of N per acre) acres will be needed for 560 dry tons. (560 total dry tons / 10.0 dry tons per acre = 56 acres.

Percent solids will be tested and tracked on a daily basis. Application rates will be adjusted accordingly to ensure the proper number of dry tons are applied per site. The above calculations assume an average percent solids result of 8%.

Soil sample results for Site 1 can be found in Section F and G. An average application rate will target 230 lbs of nitrogen per acre. Application rates will be limited hydrologically.

EXHIBIT A

PROOF OF OWNERSHIP AND SUPPORTING DOCUMENTATION

Property Owner

Name: JONES ACADEMY

Property Information

Physical Address: 1266 JONES ACADEMY RD

Mailing Address:

, OK 00000-0000

Subdivision:

Block / Lot: N/A / N/A

S-T-R: 28-05-17

Type: (EX) Exempt

Tax Dist: (101) 1 Hartshorne-R

Size (Acres): 467.520

Extended Legal: W2: W2 E2 LESS HWY 270: SEC 28-5-17

Market and Assessed Values:

Taxes:

	Taxable Market Value	Full Assessed (11.00% Market Value)
Land:	\$0	\$0
Building:	0	0
Total:	\$0	\$0

Estimated Taxes:	\$0
Homestead Credit:	\$0

Note: Tax amounts are estimates only. Contact the county tax collector for exact amounts.

Land:

Land Use	Size	Units
	467.52	Acres

Map:



EXHIBIT B

OPERATOR AGREEMENT

**HODGES FARMS
AND DREDGING, L.L.C.**

REQUEST AND CONSENT FOR BIOSOLIDS

SOURCE: Jones Academy Wastewater Facility

GROWER: Jones Academy

ADDRESS: 909 Jones Academy Road, Hartshorne, OK 74547 PHONE: 888.767.2518

MOBILE: _____

FARM LOCATION: Parcel of land adjacent to Jones Academy Wastewater Facility in Section 28, Township 5 North,
Range 17 East Indian Meridian

ACREAGE: 467.52

STATE: Oklahoma

COUNTY: Pittsburg


CROPS: Hay

1. I agree to be responsible for adhering to the following conditions, where applicable:

- a. The soil pH will be adjusted to $\geq .5.5$ when biosolids are applied. (This may be accomplished through the application of lime-treated biosolids.)
- b. Animals shall not be grazed on the land for 30 days after the application of biosolids. In addition, animals intended for dairy production shall not be allowed to graze on the land for 30 days after the application of biosolids.
- c. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
- d. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface ≥ 4 months prior to incorporation into the soil, or 38 months when the biosolids remain on the land surface < 4 months prior to incorporation.
- e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
- f. Public access to land with a low potential for public exposure shall be restricted for 30 days. Public access to land with a high potential for public exposure shall be restricted for 1 year.
- g. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority.

2. I understand that this transaction is not contemplated by the parties to be a sale of goods, and that Hodges Farms and Dredging is willing to provide to me without charge biosolids material which have been approved by the appropriate regulatory agencies for land application.

3. I understand that successful crop production depends on many variables, such as weather, soil conditions and specific farming practices and that while Hodges Farms and Dredging has experience with land application of biosolids, the responsibility for properly accommodating agricultural practices to biosolids utilization are solely mine.



OWNER'S SIGNATURE

4/11/22

DATE

EXHIBIT C

**RESIDUALS SAMPLING DATA
FIELD LOADING REPORT – PAN CALCULATIONS
PACE ANALYTICAL, INC RESULTS –METALS, NUTRIENTS, TCLP AND PCB**

March 21, 2022

Jeff Hodges
Hodges Farms & Dredging LLC
501 N. West Street
Lebo, KS 66856

RE: Project: HARTSHORNE
Pace Project No.: 60394626

Dear Jeff Hodges:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures

cc: Aaron Gruenwald, Hodges Farms and Dredging, LLC



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: HARTSHORNE

Pace Project No.: 60394626

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: HARTSHORNE

Pace Project No.: 60394626

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60394626001	COMP HARTSHORNE	Solid	03/08/22 11:30	03/09/22 09:30
60394626002	COMP 1	Solid	03/08/22 11:30	03/09/22 09:50
60394626003	COMP 2	Solid	03/08/22 11:30	03/09/22 09:50
60394626004	COMP 3	Solid	03/08/22 11:30	03/09/22 09:50
60394626005	COMP 4	Solid	03/08/22 11:30	03/09/22 09:50

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: HARTSHORNE

Pace Project No.: 60394626

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60394626001	COMP HARTSHORNE	EPA 8082	AJA1	8	PASI-K
		EPA 6010	JLH	7	PASI-K
		EPA 7470	MRV	1	PASI-K
		ASTM D2974	DWC	1	PASI-K
60394626002	COMP 1	EPA 6010	JLH	15	PASI-K
		EPA 7471	MRV	1	PASI-K
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		EPA 9045	BLA	1	PASI-K
		TKN-NH3 Calculation	LDB	1	PASI-K
		EPA 350.1	ECF	1	PASI-K
		EPA 351.2	NNNP	1	PASI-K
		EPA 365.4	ECF	1	PASI-K
		EPA 9056	CRN2	2	PASI-K
60394626003	COMP 2	EPA 6010	JLH	15	PASI-K
		EPA 7471	MRV	1	PASI-K
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		EPA 9045	BLA	1	PASI-K
		TKN-NH3 Calculation	LDB	1	PASI-K
		EPA 350.1	ECF	1	PASI-K
		EPA 351.2	NNNP	1	PASI-K
		EPA 365.4	ECF	1	PASI-K
		EPA 9056	CRN2	2	PASI-K
60394626004	COMP 3	EPA 6010	JLH	15	PASI-K
		EPA 7471	MRV	1	PASI-K
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		EPA 9045	BLA	1	PASI-K
		TKN-NH3 Calculation	LDB	1	PASI-K
		EPA 350.1	ECF	1	PASI-K
		EPA 351.2	NNNP	1	PASI-K
		EPA 365.4	ECF	1	PASI-K
		EPA 9056	CRN2	2	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: HARTSHORNE

Pace Project No.: 60394626

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60394626005	COMP 4	EPA 6010	JLH	15	PASI-K
		EPA 7471	MRV	1	PASI-K
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		EPA 9045	BLA	1	PASI-K
		TKN-NH3 Calculation	LDB	1	PASI-K
		EPA 350.1	ECF	1	PASI-K
		EPA 351.2	NNNP	1	PASI-K
		EPA 365.4	ECF	1	PASI-K
		EPA 9056	CRN2	2	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP HARTSHORNE **Lab ID: 60394626001** Collected: 03/08/22 11:30 Received: 03/09/22 09:30 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB SW								
Analytical Method: EPA 8082 Preparation Method: EPA 3546								
Pace Analytical Services - Kansas City								
PCB-1016 (Aroclor 1016)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	808	1	03/14/22 08:41	03/16/22 16:56	11096-82-5	CH
Surrogates								
Decachlorobiphenyl (S)	85	%	35-120	1	03/14/22 08:41	03/16/22 16:56	2051-24-3	CH

6010 MET ICP, TCLP

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Leachate Method/Date: EPA 1311; 03/11/22 14:37 Initial pH: 8.03; Final pH: 5.09

Pace Analytical Services - Kansas City

Arsenic	ND	mg/L	0.50	1	03/14/22 13:20	03/15/22 12:11	7440-38-2	
Barium	ND	mg/L	2.5	1	03/14/22 13:20	03/15/22 12:11	7440-39-3	
Cadmium	ND	mg/L	0.050	1	03/14/22 13:20	03/15/22 12:11	7440-43-9	
Chromium	ND	mg/L	0.10	1	03/14/22 13:20	03/15/22 12:11	7440-47-3	
Lead	ND	mg/L	0.50	1	03/14/22 13:20	03/15/22 12:11	7439-92-1	
Selenium	ND	mg/L	0.50	1	03/14/22 13:20	03/15/22 12:11	7782-49-2	
Silver	ND	mg/L	0.10	1	03/14/22 13:20	03/15/22 12:11	7440-22-4	

7470 Mercury, TCLP

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Leachate Method/Date: EPA 1311; 03/11/22 14:37 Initial pH: 8.03; Final pH: 5.09

Pace Analytical Services - Kansas City

Mercury	ND	mg/L	0.0020	1	03/14/22 18:00	03/15/22 12:17	7439-97-6	
---------	----	------	--------	---	----------------	----------------	-----------	--

Percent Moisture

Analytical Method: ASTM D2974

Pace Analytical Services - Kansas City

Percent Moisture	75.8	%	0.50	1		03/11/22 11:01		
------------------	-------------	---	------	---	--	----------------	--	--

Sample: COMP 1

Lab ID: 60394626002 Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference								
Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Pace Analytical Services - Kansas City								
Aluminum	30500	mg/kg	26.6	3	03/17/22 12:47	03/18/22 12:54	7429-90-5	
Arsenic	3.3	mg/kg	1.2	1	03/17/22 12:47	03/18/22 11:06	7440-38-2	
Cadmium	1.8	mg/kg	0.59	1	03/17/22 12:47	03/18/22 11:06	7440-43-9	
Calcium	21800	mg/kg	71.0	3	03/17/22 12:47	03/18/22 12:54	7440-70-2	
Chromium	26.8	mg/kg	0.59	1	03/17/22 12:47	03/18/22 11:06	7440-47-3	
Copper	38.3	mg/kg	2.4	1	03/17/22 12:47	03/18/22 11:06	7440-50-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP 1 **Lab ID: 60394626002** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference								
Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Pace Analytical Services - Kansas City								
Lead	20.3	mg/kg	1.2	1	03/17/22 12:47	03/18/22 11:06	7439-92-1	
Magnesium	6850	mg/kg	17.7	3	03/17/22 12:47	03/18/22 12:54	7439-95-4	
Molybdenum	ND	mg/kg	2.4	1	03/17/22 12:47	03/18/22 11:06	7439-98-7	
Nickel	23.7	mg/kg	0.59	1	03/17/22 12:47	03/18/22 11:06	7440-02-0	
Potassium	3290	mg/kg	59.2	1	03/17/22 12:47	03/18/22 11:06	7440-09-7	
Selenium	ND	mg/kg	5.3	3	03/17/22 12:47	03/18/22 12:54	7782-49-2	D3
Silver	ND	mg/kg	0.83	1	03/17/22 12:47	03/18/22 11:06	7440-22-4	
Sodium	391	mg/kg	59.2	1	03/17/22 12:47	03/18/22 11:06	7440-23-5	
Zinc	112	mg/kg	11.8	1	03/17/22 12:47	03/18/22 11:06	7440-66-6	
7471 Mercury								
Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Pace Analytical Services - Kansas City								
Mercury	ND	mg/kg	0.058	1	03/16/22 18:15	03/17/22 12:10	7439-97-6	
Percent Moisture								
Analytical Method: ASTM D2974								
Pace Analytical Services - Kansas City								
Percent Moisture	83.4	%	0.50	1		03/14/22 16:15		
2540G Total Percent Solids								
Analytical Method: SM 2540G								
Pace Analytical Services - Kansas City								
Total Solids	16.6	%	0.10	1		03/14/22 16:15		
2540G Total Volatile Solids								
Analytical Method: SM 2540G								
Pace Analytical Services - Kansas City								
Total Volatile Solids	9.0	% (w/w)	0.10	1		03/14/22 16:15		
9045 pH Soil								
Analytical Method: EPA 9045								
Pace Analytical Services - Kansas City								
pH at 25 Degrees C	7.3	Std. Units	0.10	1		03/16/22 14:21		
Total Organic Nitrogen Soil								
Analytical Method: TKN-NH3 Calculation								
Pace Analytical Services - Kansas City								
Total Organic Nitrogen	3670	mg/kg	50.0	1		03/17/22 16:36		
350.1 Ammonia								
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Pace Analytical Services - Kansas City								
Nitrogen, Ammonia	907	mg/kg	6.0	1	03/15/22 09:00	03/15/22 13:13	7664-41-7	
351.2 Total Kjeldahl Nitrogen								
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Pace Analytical Services - Kansas City								
Nitrogen, Kjeldahl, Total	4580	mg/kg	375	1	03/14/22 12:30	03/16/22 10:55	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP 1 **Lab ID: 60394626002** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
------------	---------	-------	--------------	----	----------	----------	---------	------

365.4 Total Phosphorus

Analytical Method: EPA 365.4 Preparation Method: EPA 365.4

Pace Analytical Services - Kansas City

Phosphorus	1280	mg/kg	42.6	2	03/15/22 11:59	03/16/22 10:10	7723-14-0	
------------	-------------	-------	------	---	----------------	----------------	-----------	--

9056 IC Anions

Analytical Method: EPA 9056 Preparation Method: EPA 9056

Pace Analytical Services - Kansas City

Nitrate as N	ND	mg/kg	6.0	1	03/16/22 15:41	03/17/22 09:45	14797-55-8	
Nitrite as N	ND	mg/kg	6.0	1	03/16/22 15:41	03/17/22 09:45	14797-65-0	

Sample: COMP 2

Lab ID: 60394626003 Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
------------	---------	-------	--------------	----	----------	----------	---------	------

6010 MET ICP Red. Interference

Analytical Method: EPA 6010 Preparation Method: EPA 3050

Pace Analytical Services - Kansas City

Aluminum	28800	mg/kg	26.1	3	03/17/22 12:47	03/18/22 12:56	7429-90-5	M1
Arsenic	3.0	mg/kg	1.2	1	03/17/22 12:47	03/18/22 11:08	7440-38-2	
Cadmium	1.6	mg/kg	0.58	1	03/17/22 12:47	03/18/22 11:08	7440-43-9	
Calcium	21000	mg/kg	69.6	3	03/17/22 12:47	03/18/22 12:56	7440-70-2	M1
Chromium	26.0	mg/kg	0.58	1	03/17/22 12:47	03/18/22 11:08	7440-47-3	
Copper	37.6	mg/kg	2.3	1	03/17/22 12:47	03/18/22 11:08	7440-50-8	
Lead	20.1	mg/kg	1.2	1	03/17/22 12:47	03/18/22 11:08	7439-92-1	
Magnesium	5650	mg/kg	5.8	1	03/17/22 12:47	03/18/22 11:08	7439-95-4	M1
Molybdenum	ND	mg/kg	2.3	1	03/17/22 12:47	03/18/22 11:08	7439-98-7	
Nickel	22.6	mg/kg	0.58	1	03/17/22 12:47	03/18/22 11:08	7440-02-0	
Potassium	3080	mg/kg	58.0	1	03/17/22 12:47	03/18/22 11:08	7440-09-7	M1
Selenium	ND	mg/kg	5.2	3	03/17/22 12:47	03/18/22 12:56	7782-49-2	D3
Silver	ND	mg/kg	0.81	1	03/17/22 12:47	03/18/22 11:08	7440-22-4	
Sodium	354	mg/kg	58.0	1	03/17/22 12:47	03/18/22 11:08	7440-23-5	
Zinc	112	mg/kg	11.6	1	03/17/22 12:47	03/18/22 11:08	7440-66-6	

7471 Mercury

Analytical Method: EPA 7471 Preparation Method: EPA 7471

Pace Analytical Services - Kansas City

Mercury	0.051	mg/kg	0.048	1	03/16/22 18:15	03/17/22 12:12	7439-97-6	
---------	--------------	-------	-------	---	----------------	----------------	-----------	--

Percent Moisture

Analytical Method: ASTM D2974

Pace Analytical Services - Kansas City

Percent Moisture	79.8	%	0.50	1		03/14/22 16:16	
------------------	-------------	---	------	---	--	----------------	--

2540G Total Percent Solids

Analytical Method: SM 2540G

Pace Analytical Services - Kansas City

Total Solids	20.2	%	0.10	1		03/14/22 16:16	
--------------	-------------	---	------	---	--	----------------	--

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP 2 **Lab ID: 60394626003** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540G Total Volatile Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Volatile Solids	9.2	% (w/w)	0.10	1		03/14/22 16:16		
9045 pH Soil								
Analytical Method: EPA 9045 Pace Analytical Services - Kansas City								
pH at 25 Degrees C	7.3	Std. Units	0.10	1		03/16/22 14:30		
Total Organic Nitrogen Soil								
Analytical Method: TKN-NH3 Calculation Pace Analytical Services - Kansas City								
Total Organic Nitrogen	4140	mg/kg	50.0	1		03/17/22 16:36		
350.1 Ammonia								
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1 Pace Analytical Services - Kansas City								
Nitrogen, Ammonia	902	mg/kg	5.0	1	03/15/22 09:00	03/15/22 13:15	7664-41-7	
351.2 Total Kjeldahl Nitrogen								
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Kansas City								
Nitrogen, Kjeldahl, Total	5040	mg/kg	304	1	03/14/22 12:30	03/16/22 10:56	7727-37-9	
365.4 Total Phosphorus								
Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Kansas City								
Phosphorus	1140	mg/kg	48.4	1	03/15/22 11:59	03/16/22 09:42	7723-14-0	
9056 IC Anions								
Analytical Method: EPA 9056 Preparation Method: EPA 9056 Pace Analytical Services - Kansas City								
Nitrate as N	ND	mg/kg	5.0	1	03/16/22 15:41	03/17/22 15:24	14797-55-8	
Nitrite as N	ND	mg/kg	5.0	1	03/16/22 15:41	03/17/22 15:24	14797-65-0	

Sample: COMP 3 **Lab ID: 60394626004** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference								
Analytical Method: EPA 6010 Preparation Method: EPA 3050 Pace Analytical Services - Kansas City								
Aluminum	31900	mg/kg	24.9	3	03/17/22 12:47	03/18/22 13:03	7429-90-5	
Arsenic	2.3	mg/kg	1.1	1	03/17/22 12:47	03/18/22 11:15	7440-38-2	
Cadmium	1.7	mg/kg	0.55	1	03/17/22 12:47	03/18/22 11:15	7440-43-9	
Calcium	10800	mg/kg	22.2	1	03/17/22 12:47	03/18/22 11:15	7440-70-2	
Chromium	27.2	mg/kg	0.55	1	03/17/22 12:47	03/18/22 11:15	7440-47-3	
Copper	19.1	mg/kg	2.2	1	03/17/22 12:47	03/18/22 11:15	7440-50-8	
Lead	20.2	mg/kg	1.1	1	03/17/22 12:47	03/18/22 11:15	7439-92-1	
Magnesium	4660	mg/kg	5.5	1	03/17/22 12:47	03/18/22 11:15	7439-95-4	
Molybdenum	ND	mg/kg	2.2	1	03/17/22 12:47	03/18/22 11:15	7439-98-7	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP 3 **Lab ID: 60394626004** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference		Analytical Method: EPA 6010 Preparation Method: EPA 3050 Pace Analytical Services - Kansas City						
Nickel	21.1	mg/kg	0.55	1	03/17/22 12:47	03/18/22 11:15	7440-02-0	
Potassium	3050	mg/kg	55.4	1	03/17/22 12:47	03/18/22 11:15	7440-09-7	
Selenium	ND	mg/kg	5.0	3	03/17/22 12:47	03/18/22 13:03	7782-49-2	D3
Silver	ND	mg/kg	0.78	1	03/17/22 12:47	03/18/22 11:15	7440-22-4	
Sodium	420	mg/kg	55.4	1	03/17/22 12:47	03/18/22 11:15	7440-23-5	
Zinc	67.7	mg/kg	11.1	1	03/17/22 12:47	03/18/22 11:15	7440-66-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Kansas City						
Mercury	ND	mg/kg	0.053	1	03/16/22 18:15	03/17/22 12:14	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	85.2	%	0.50	1		03/14/22 16:16		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	14.8	%	0.10	1		03/14/22 16:16		
2540G Total Volatile Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Volatile Solids	10.1	% (w/w)	0.10	1		03/14/22 16:16		
9045 pH Soil		Analytical Method: EPA 9045 Pace Analytical Services - Kansas City						
pH at 25 Degrees C	7.3	Std. Units	0.10	1		03/16/22 14:31		
Total Organic Nitrogen Soil		Analytical Method: TKN-NH3 Calculation Pace Analytical Services - Kansas City						
Total Organic Nitrogen	2610	mg/kg	50.0	1		03/17/22 16:36		
350.1 Ammonia		Analytical Method: EPA 350.1 Preparation Method: EPA 350.1 Pace Analytical Services - Kansas City						
Nitrogen, Ammonia	213	mg/kg	6.7	1	03/15/22 09:00	03/15/22 13:16	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Kansas City						
Nitrogen, Kjeldahl, Total	2820	mg/kg	418	1	03/14/22 12:30	03/16/22 10:58	7727-37-9	
365.4 Total Phosphorus		Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Kansas City						
Phosphorus	637	mg/kg	47.4	1	03/15/22 11:59	03/16/22 09:43	7723-14-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP 3 **Lab ID: 60394626004** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions								
Analytical Method: EPA 9056 Preparation Method: EPA 9056 Pace Analytical Services - Kansas City								
Nitrate as N	ND	mg/kg	6.7	1	03/16/22 15:41	03/17/22 15:37	14797-55-8	
Nitrite as N	ND	mg/kg	6.7	1	03/16/22 15:41	03/17/22 15:37	14797-65-0	

Sample: COMP 4 **Lab ID: 60394626005** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference								
Analytical Method: EPA 6010 Preparation Method: EPA 3050 Pace Analytical Services - Kansas City								
Aluminum	35200	mg/kg	37.9	5	03/17/22 12:47	03/18/22 13:14	7429-90-5	
Arsenic	2.2	mg/kg	1.0	1	03/17/22 12:47	03/18/22 11:17	7440-38-2	
Cadmium	1.6	mg/kg	0.51	1	03/17/22 12:47	03/18/22 11:17	7440-43-9	
Calcium	9860	mg/kg	20.2	1	03/17/22 12:47	03/18/22 11:17	7440-70-2	
Chromium	27.0	mg/kg	0.51	1	03/17/22 12:47	03/18/22 11:17	7440-47-3	
Copper	17.6	mg/kg	2.0	1	03/17/22 12:47	03/18/22 11:17	7440-50-8	
Lead	19.3	mg/kg	1.0	1	03/17/22 12:47	03/18/22 11:17	7439-92-1	
Magnesium	4390	mg/kg	5.1	1	03/17/22 12:47	03/18/22 11:17	7439-95-4	
Molybdenum	ND	mg/kg	2.0	1	03/17/22 12:47	03/18/22 11:17	7439-98-7	
Nickel	19.8	mg/kg	0.51	1	03/17/22 12:47	03/18/22 11:17	7440-02-0	
Potassium	2980	mg/kg	50.6	1	03/17/22 12:47	03/18/22 11:17	7440-09-7	
Selenium	ND	mg/kg	7.6	5	03/17/22 12:47	03/18/22 13:14	7782-49-2	D3
Silver	ND	mg/kg	0.71	1	03/17/22 12:47	03/18/22 11:17	7440-22-4	
Sodium	425	mg/kg	50.6	1	03/17/22 12:47	03/18/22 11:17	7440-23-5	
Zinc	64.0	mg/kg	10.1	1	03/17/22 12:47	03/18/22 11:17	7440-66-6	

7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471

Pace Analytical Services - Kansas City

Mercury	ND	mg/kg	0.060	1	03/16/22 18:15	03/17/22 12:17	7439-97-6	
---------	----	-------	-------	---	----------------	----------------	-----------	--

Percent Moisture Analytical Method: ASTM D2974

Pace Analytical Services - Kansas City

Percent Moisture	86.1	%	0.50	1		03/14/22 16:17		
------------------	-------------	---	------	---	--	----------------	--	--

2540G Total Percent Solids Analytical Method: SM 2540G

Pace Analytical Services - Kansas City

Total Solids	13.9	%	0.10	1		03/14/22 16:17		
--------------	-------------	---	------	---	--	----------------	--	--

2540G Total Volatile Solids Analytical Method: SM 2540G

Pace Analytical Services - Kansas City

Total Volatile Solids	10.7	% (w/w)	0.10	1		03/14/22 16:17		
-----------------------	-------------	---------	------	---	--	----------------	--	--

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394626

Sample: COMP 4 **Lab ID: 60394626005** Collected: 03/08/22 11:30 Received: 03/09/22 09:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9045 pH Soil								
Analytical Method: EPA 9045 Pace Analytical Services - Kansas City								
pH at 25 Degrees C	7.4	Std. Units	0.10	1		03/16/22 14:31		
Total Organic Nitrogen Soil								
Analytical Method: TKN-NH3 Calculation Pace Analytical Services - Kansas City								
Total Organic Nitrogen	846	mg/kg	50.0	1		03/17/22 16:36		
350.1 Ammonia								
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1 Pace Analytical Services - Kansas City								
Nitrogen, Ammonia	214	mg/kg	7.2	1	03/15/22 09:00	03/15/22 13:18	7664-41-7	
351.2 Total Kjeldahl Nitrogen								
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Kansas City								
Nitrogen, Kjeldahl, Total	1060	mg/kg	442	1	03/14/22 12:30	03/16/22 11:02	7727-37-9	
365.4 Total Phosphorus								
Analytical Method: EPA 365.4 Preparation Method: EPA 365.4 Pace Analytical Services - Kansas City								
Phosphorus	502	mg/kg	65.5	1	03/15/22 11:59	03/16/22 09:44	7723-14-0	
9056 IC Anions								
Analytical Method: EPA 9056 Preparation Method: EPA 9056 Pace Analytical Services - Kansas City								
Nitrate as N	ND	mg/kg	7.1	1	03/16/22 15:41	03/17/22 15:51	14797-55-8	
Nitrite as N	ND	mg/kg	7.1	1	03/16/22 15:41	03/17/22 15:51	14797-65-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775355

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury TCLP

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626001

METHOD BLANK: 3093770

Matrix: Water

Associated Lab Samples: 60394626001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	03/15/22 12:13	

LABORATORY CONTROL SAMPLE: 3094853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.015	0.014	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3094854 3094855

Parameter	Units	3094854		3094855		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/L	<0.0020	0.015	0.014	0.015	94	96	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775794

Analysis Method: EPA 7471

QC Batch Method: EPA 7471

Analysis Description: 7471 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3096440

Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.050	03/17/22 12:03	

LABORATORY CONTROL SAMPLE: 3096441

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.5	0.50	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3096442 3096443

Parameter	Units	3096442		3096443		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60394439001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Mercury	mg/kg	0.46	3.5	3.6	3.8	3.9	95	97	75-125	5	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 776106

Analysis Method: EPA 6010

QC Batch Method: EPA 3050

Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3097590

Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	mg/kg	ND	7.5	03/18/22 11:01	
Arsenic	mg/kg	ND	1.0	03/18/22 11:01	
Cadmium	mg/kg	ND	0.50	03/18/22 11:01	
Calcium	mg/kg	ND	20.0	03/18/22 11:01	
Chromium	mg/kg	ND	0.50	03/18/22 11:01	
Copper	mg/kg	ND	2.0	03/18/22 11:01	
Lead	mg/kg	ND	1.0	03/18/22 11:01	
Magnesium	mg/kg	ND	5.0	03/18/22 11:01	
Molybdenum	mg/kg	ND	2.0	03/18/22 11:01	
Nickel	mg/kg	ND	0.50	03/18/22 11:01	
Potassium	mg/kg	ND	50.0	03/18/22 11:01	
Selenium	mg/kg	ND	1.5	03/18/22 11:01	
Silver	mg/kg	ND	0.70	03/18/22 11:01	
Sodium	mg/kg	ND	50.0	03/18/22 11:01	
Zinc	mg/kg	ND	10.0	03/18/22 13:54	

LABORATORY CONTROL SAMPLE: 3097591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	1000	990	99	80-120	
Arsenic	mg/kg	100	89.4	89	80-120	
Cadmium	mg/kg	100	99.8	100	80-120	
Calcium	mg/kg	1000	986	99	80-120	
Chromium	mg/kg	100	101	101	80-120	
Copper	mg/kg	100	101	101	80-120	
Lead	mg/kg	100	101	101	80-120	
Magnesium	mg/kg	1000	1020	102	80-120	
Molybdenum	mg/kg	100	105	105	80-120	
Nickel	mg/kg	100	102	102	80-120	
Potassium	mg/kg	1000	979	98	80-120	
Selenium	mg/kg	100	92.1	92	80-120	
Silver	mg/kg	50	48.5	97	80-120	
Sodium	mg/kg	1000	1030	103	80-120	
Zinc	mg/kg	100	96.4	96	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

Parameter	Units	60394626003		3097592		3097593		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Aluminum	mg/kg	28800	1210	1160	38700	38600	828	853	75-125	0	20	E,M1		
Arsenic	mg/kg	3.0	121	116	111	109	90	92	75-125	2	20			
Cadmium	mg/kg	1.6	121	116	114	111	93	95	75-125	3	20			
Calcium	mg/kg	21000	1210	1160	21600	22300	47	106	75-125	3	20	M1		
Chromium	mg/kg	26.0	121	116	150	152	103	109	75-125	1	20			
Copper	mg/kg	37.6	121	116	172	165	112	110	75-125	4	20			
Lead	mg/kg	20.1	121	116	130	128	91	93	75-125	2	20			
Magnesium	mg/kg	5650	1210	1160	8760	8870	258	278	75-125	1	20	M1		
Molybdenum	mg/kg	ND	121	116	118	114	98	98	75-125	3	20			
Nickel	mg/kg	22.6	121	116	140	136	98	99	75-125	3	20			
Potassium	mg/kg	3080	1210	1160	5990	6020	242	255	75-125	0	20	M1		
Selenium	mg/kg	ND	121	116	108	104	88	88	75-125	4	20			
Silver	mg/kg	ND	60.3	57.8	59.7	58.8	99	102	75-125	2	20			
Sodium	mg/kg	354	1210	1160	1610	1600	104	108	75-125	0	20			
Zinc	mg/kg	112	121	116	239	244	105	114	75-125	2	20			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775360

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET TCLP

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626001

METHOD BLANK: 3093770

Matrix: Water

Associated Lab Samples: 60394626001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.50	03/15/22 12:05	
Barium	mg/L	ND	2.5	03/15/22 12:05	
Cadmium	mg/L	ND	0.050	03/15/22 12:05	
Chromium	mg/L	ND	0.10	03/15/22 12:05	
Lead	mg/L	ND	0.50	03/15/22 12:05	
Selenium	mg/L	ND	0.50	03/15/22 12:05	
Silver	mg/L	ND	0.10	03/15/22 12:05	

LABORATORY CONTROL SAMPLE: 3094872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10	9.0	90	80-120	
Barium	mg/L	10	9.6	96	80-120	
Cadmium	mg/L	10	9.7	97	80-120	
Chromium	mg/L	10	9.6	96	80-120	
Lead	mg/L	10	9.6	96	80-120	
Selenium	mg/L	10	10.0	100	80-120	
Silver	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3094873 3094874

Parameter	Units	3094873		3094874		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	<0.50	10	10	8.7	9.0	87	90	75-125	3	20
Barium	mg/L	<2.5	10	10	9.8	10.2	91	95	75-125	3	20
Cadmium	mg/L	<0.050	10	10	9.4	9.7	94	97	75-125	4	20
Chromium	mg/L	<0.10	10	10	9.2	9.6	92	95	75-125	4	20
Lead	mg/L	<0.50	10	10	9.3	9.7	93	97	75-125	4	20
Selenium	mg/L	<0.50	10	10	9.8	10.1	98	101	75-125	3	20
Silver	mg/L	<0.10	5	5	4.7	4.8	93	97	75-125	4	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775250

Analysis Method: EPA 8082

QC Batch Method: EPA 3546

Analysis Description: 8082 GCS PCB

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626001

METHOD BLANK: 3094550

Matrix: Solid

Associated Lab Samples: 60394626001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	32.2	03/16/22 15:09	
PCB-1221 (Aroclor 1221)	ug/kg	ND	32.2	03/16/22 15:09	
PCB-1232 (Aroclor 1232)	ug/kg	ND	32.2	03/16/22 15:09	
PCB-1242 (Aroclor 1242)	ug/kg	ND	32.2	03/16/22 15:09	
PCB-1248 (Aroclor 1248)	ug/kg	ND	32.2	03/16/22 15:09	
PCB-1254 (Aroclor 1254)	ug/kg	ND	32.2	03/16/22 15:09	
PCB-1260 (Aroclor 1260)	ug/kg	ND	32.2	03/16/22 15:09	CH
Decachlorobiphenyl (S)	%	90	35-120	03/16/22 15:09	CH

LABORATORY CONTROL SAMPLE: 3094551

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	165	143	87	65-120	
PCB-1260 (Aroclor 1260)	ug/kg	165	148	90	65-120	CH
Decachlorobiphenyl (S)	%			92	35-120	CH

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3094552 3094553

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60394559005 Result	Spike Conc.	Spike Conc.	Result						
PCB-1016 (Aroclor 1016)	ug/kg	ND	505	532	464	532	92	100	30-130	14	40
PCB-1260 (Aroclor 1260)	ug/kg	ND	505	532	292	287	58	54	15-155	2	40 CH
Decachlorobiphenyl (S)	%						76	72	35-120		50 CH

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775055

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626001

METHOD BLANK: 3093734

Matrix: Solid

Associated Lab Samples: 60394626001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	03/11/22 11:00	

SAMPLE DUPLICATE: 3093735

Parameter	Units	60394745001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.6	20.4	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775422

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

SAMPLE DUPLICATE: 3095193

Parameter	Units	60394425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	43.8	43.5	1	20	

SAMPLE DUPLICATE: 3095194

Parameter	Units	60394626002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	83.4	83.1	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775405

Analysis Method: SM 2540G

QC Batch Method: SM 2540G

Analysis Description: 2540G Total Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3095122

Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	ND	0.10	03/14/22 16:09	

SAMPLE DUPLICATE: 3095123

Parameter	Units	60394425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	56.2	56.5	1	8	

SAMPLE DUPLICATE: 3095124

Parameter	Units	60394626002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	16.6	16.9	1	8	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775409

Analysis Method: SM 2540G

QC Batch Method: SM 2540G

Analysis Description: 2540G Total Volatile Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3095146

Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Volatile Solids	% (w/w)	ND	0.10	03/14/22 16:09	

SAMPLE DUPLICATE: 3095147

Parameter	Units	60394425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Volatile Solids	% (w/w)	50.5	51.1	1	8	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775840

Analysis Method: EPA 9045

QC Batch Method: EPA 9045

Analysis Description: 9045 pH

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

SAMPLE DUPLICATE: 3096679

Parameter	Units	60394626002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775515

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3095425

Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	1.0	03/15/22 11:58	

LABORATORY CONTROL SAMPLE: 3095426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	50	46.0	92	90-110	

MATRIX SPIKE SAMPLE: 3095427

Parameter	Units	60394028001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	45900	3120	48100	70	80-120	M1

SAMPLE DUPLICATE: 3095428

Parameter	Units	60394028002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/kg	3920	3860	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch:	775171	Analysis Method:	EPA 351.2
QC Batch Method:	EPA 351.2	Analysis Description:	351.2 TKN
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3094160 Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	62.5	03/16/22 10:51	

LABORATORY CONTROL SAMPLE: 3094161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	625	650	104	90-110	

MATRIX SPIKE SAMPLE: 3094162

Parameter	Units	60394003008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	10300	3200	13400	97	90-110	

SAMPLE DUPLICATE: 3094163

Parameter	Units	60394626003 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	5040	4730	6	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch: 775574

Analysis Method: EPA 365.4

QC Batch Method: EPA 365.4

Analysis Description: 365.4 Total Phosphorus

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3095691

Matrix: Solid

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	ND	10.0	03/16/22 09:28	

LABORATORY CONTROL SAMPLE: 3095692

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	200	201	101	90-110	

MATRIX SPIKE SAMPLE: 3095693

Parameter	Units	60394028003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	14100	982	14700	61	90-110	M1

SAMPLE DUPLICATE: 3095694

Parameter	Units	60394121008 Result	Dup Result	RPD	Max RPD	Qualifiers
Phosphorus	mg/kg	19000	18800	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394626

QC Batch:	775773	Analysis Method:	EPA 9056
QC Batch Method:	EPA 9056	Analysis Description:	9056 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

METHOD BLANK: 3096278 Matrix: Solid
Associated Lab Samples: 60394626002, 60394626003, 60394626004, 60394626005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/kg	ND	10.0	03/17/22 08:08	
Nitrite as N	mg/kg	ND	10.0	03/17/22 08:08	

LABORATORY CONTROL SAMPLE: 3096279

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/kg	200	199	100	80-120	
Nitrite as N	mg/kg	200	209	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3096280 3096281

Parameter	Units	60394003008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/kg	7.6	1000	1000	1350	1340	133	133	80-120	0	15	E,M1
Nitrite as N	mg/kg	ND	1000	1000	1210	1210	121	121	80-120	0	15	E,M1

SAMPLE DUPLICATE: 3096282

Parameter	Units	60394220001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrate as N	mg/kg	ND	ND		15	
Nitrite as N	mg/kg	ND	ND		15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: HARTSHORNE

Pace Project No.: 60394626

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HARTSHORNE

Pace Project No.: 60394626

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60394626001	COMP HARTSHORNE	EPA 3546	775250	EPA 8082	775845
60394626002	COMP 1	EPA 3050	776106	EPA 6010	776313
60394626003	COMP 2	EPA 3050	776106	EPA 6010	776313
60394626004	COMP 3	EPA 3050	776106	EPA 6010	776313
60394626005	COMP 4	EPA 3050	776106	EPA 6010	776313
60394626001	COMP HARTSHORNE	EPA 3010	775360	EPA 6010	775503
60394626001	COMP HARTSHORNE	EPA 7470	775355	EPA 7470	775454
60394626002	COMP 1	EPA 7471	775794	EPA 7471	775994
60394626003	COMP 2	EPA 7471	775794	EPA 7471	775994
60394626004	COMP 3	EPA 7471	775794	EPA 7471	775994
60394626005	COMP 4	EPA 7471	775794	EPA 7471	775994
60394626001	COMP HARTSHORNE	ASTM D2974	775055		
60394626002	COMP 1	ASTM D2974	775422		
60394626003	COMP 2	ASTM D2974	775422		
60394626004	COMP 3	ASTM D2974	775422		
60394626005	COMP 4	ASTM D2974	775422		
60394626002	COMP 1	SM 2540G	775405		
60394626003	COMP 2	SM 2540G	775405		
60394626004	COMP 3	SM 2540G	775405		
60394626005	COMP 4	SM 2540G	775405		
60394626002	COMP 1	SM 2540G	775409		
60394626003	COMP 2	SM 2540G	775409		
60394626004	COMP 3	SM 2540G	775409		
60394626005	COMP 4	SM 2540G	775409		
60394626002	COMP 1	EPA 9045	775840		
60394626003	COMP 2	EPA 9045	775840		
60394626004	COMP 3	EPA 9045	775840		
60394626005	COMP 4	EPA 9045	775840		
60394626002	COMP 1	TKN-NH3 Calculation	776212		
60394626003	COMP 2	TKN-NH3 Calculation	776212		
60394626004	COMP 3	TKN-NH3 Calculation	776212		
60394626005	COMP 4	TKN-NH3 Calculation	776212		
60394626002	COMP 1	EPA 350.1	775515	EPA 350.1	775634
60394626003	COMP 2	EPA 350.1	775515	EPA 350.1	775634
60394626004	COMP 3	EPA 350.1	775515	EPA 350.1	775634
60394626005	COMP 4	EPA 350.1	775515	EPA 350.1	775634
60394626002	COMP 1	EPA 351.2	775171	EPA 351.2	775303
60394626003	COMP 2	EPA 351.2	775171	EPA 351.2	775303
60394626004	COMP 3	EPA 351.2	775171	EPA 351.2	775303
60394626005	COMP 4	EPA 351.2	775171	EPA 351.2	775303
60394626002	COMP 1	EPA 365.4	775574	EPA 365.4	775949
60394626003	COMP 2	EPA 365.4	775574	EPA 365.4	775949

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HARTSHORNE

Pace Project No.: 60394626

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60394626004	COMP 3	EPA 365.4	775574	EPA 365.4	775949
60394626005	COMP 4	EPA 365.4	775574	EPA 365.4	775949
60394626002	COMP 1	EPA 9056	775773	EPA 9056	776087
60394626003	COMP 2	EPA 9056	775773	EPA 9056	776087
60394626004	COMP 3	EPA 9056	775773	EPA 9056	776087
60394626005	COMP 4	EPA 9056	775773	EPA 9056	776087

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

EXHIBIT D

ANALYTICAL RESULTS – PACE ANALYTICAL, INC FECAL RESULTS

March 18, 2022

Jeff Hodges
Hodges Farms & Dredging LLC
501 N. West Street
Lebo, KS 66856

RE: Project: HARTSHORNE
Pace Project No.: 60394594

Dear Jeff Hodges:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - SE Kansas

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures

cc: Aaron Gruenwald, Hodges Farms and Dredging, LLC



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: HARTSHORNE

Pace Project No.: 60394594

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

Pace Analytical Services Southeast Kansas

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 18-016-0

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10426

Louisiana Certification #: 03055

Oklahoma Certification #: 9935

Texas Certification #: T104704407

Utah Certification #: KS00021

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: HARTSHORNE

Pace Project No.: 60394594

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60394594001	1-1	Solid	03/08/22 11:30	03/09/22 11:00
60394594002	1-2	Solid	03/08/22 11:30	03/09/22 11:00
60394594003	1-3	Solid	03/08/22 11:30	03/09/22 11:00
60394594004	1-4	Solid	03/08/22 11:30	03/09/22 11:00
60394594005	1-5	Solid	03/08/22 11:30	03/09/22 11:00
60394594006	1-6	Solid	03/08/22 11:30	03/09/22 11:00
60394594007	1-7	Solid	03/08/22 11:30	03/09/22 11:00
60394594008	2-1	Solid	03/08/22 11:30	03/09/22 11:00
60394594009	2-2	Solid	03/08/22 11:30	03/09/22 11:00
60394594010	2-3	Solid	03/08/22 11:30	03/09/22 11:00
60394594011	2-4	Solid	03/08/22 11:30	03/09/22 11:00
60394594012	2-5	Solid	03/08/22 11:30	03/09/22 11:00
60394594013	2-6	Solid	03/08/22 11:30	03/09/22 11:00
60394594014	2-7	Solid	03/08/22 11:30	03/09/22 11:00
60394594015	3-1	Solid	03/08/22 11:30	03/09/22 11:00
60394594016	3-2	Solid	03/08/22 11:30	03/09/22 11:00
60394594017	3-3	Solid	03/08/22 11:30	03/09/22 11:00
60394594018	3-4	Solid	03/08/22 11:30	03/09/22 11:00
60394594019	3-5	Solid	03/08/22 11:30	03/09/22 11:00
60394594020	3-6	Solid	03/08/22 11:30	03/09/22 11:00
60394594021	3-7	Solid	03/08/22 11:30	03/09/22 11:00
60394594022	4-1	Solid	03/08/22 11:30	03/09/22 11:00
60394594023	4-2	Solid	03/08/22 11:30	03/09/22 11:00
60394594024	4-3	Solid	03/08/22 11:30	03/09/22 11:00
60394594025	4-4	Solid	03/08/22 11:30	03/09/22 11:00
60394594026	4-5	Solid	03/08/22 11:30	03/09/22 11:00
60394594027	4-6	Solid	03/08/22 11:30	03/09/22 11:00
60394594028	4-7	Solid	03/08/22 11:30	03/09/22 11:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: HARTSHORNE

Pace Project No.: 60394594

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60394594001	1-1	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594002	1-2	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594003	1-3	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594004	1-4	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594005	1-5	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594006	1-6	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594007	1-7	SM 9222D	BEP	1	PASI-SE
		CALC A	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594008	2-1	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594009	2-2	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594010	2-3	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594011	2-4	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
60394594012	2-5	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: HARTSHORNE

Pace Project No.: 60394594

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60394594013	2-6	SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
60394594014	2-7	SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
		CALC A	BEP	1	PASI-SE
60394594015	3-1	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
		CALC A	BEP	1	PASI-SE
60394594016	3-2	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594017	3-3	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594018	3-4	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594019	3-5	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594020	3-6	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594021	3-7	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594022	4-1	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594023	4-2	ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
60394594024	4-3	ASTM D2974	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: HARTSHORNE

Pace Project No.: 60394594

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60394594025	4-4	SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
60394594026	4-5	SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
60394594027	4-6	SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
60394594028	4-7	SM 2540G	JDS	1	PASI-K
		SM 9222D	BEP	1	PASI-SE
		CALC A	BEP	1	PASI-SE
		ASTM D2974	JDS	1	PASI-K
		SM 2540G	JDS	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-SE = Pace Analytical Services - SE Kansas

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 1-1 **Lab ID: 60394594001** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<606	CFU/g	6.4	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	84.3	%	0.50	1		03/14/22 16:21		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	15.7	%	0.10	1		03/14/22 16:21		

Sample: 1-2 **Lab ID: 60394594002** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<585	CFU/g	6.1	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	83.5	%	0.50	1		03/14/22 16:21		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	16.5	%	0.10	1		03/14/22 16:21		

Sample: 1-3 **Lab ID: 60394594003** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<610	CFU/g	5.8	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	82.9	%	0.50	1		03/14/22 16:21		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 1-3 **Lab ID: 60394594003** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	17.1	%	0.10	1		03/14/22 16:21		

Sample: 1-4 **Lab ID: 60394594004** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<592	CFU/g	6.1	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	83.7	%	0.50	1		03/14/22 16:21		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	16.4	%	0.10	1		03/14/22 16:21		

Sample: 1-5 **Lab ID: 60394594005** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<602	CFU/g	5.9	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	83.1	%	0.50	1		03/14/22 16:22		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	16.9	%	0.10	1		03/14/22 16:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 1-6 **Lab ID: 60394594006** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<588	CFU/g	6.0	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	83.4	%	0.50	1		03/14/22 16:22		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	16.6	%	0.10	1		03/14/22 16:22		

Sample: 1-7 **Lab ID: 60394594007** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<521	CFU/g	5.9	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Geometric Mean								
Analytical Method: CALC A Pace Analytical Services - SE Kansas								
Fecal Coliforms	<586	CFU/g	5.9	1		03/10/22 11:45		
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	83.0	%	0.50	1		03/14/22 16:22		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	17.0	%	0.10	1		03/14/22 16:22		

Sample: 2-1 **Lab ID: 60394594008** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<521	CFU/g	5.2	1	03/09/22 11:28	03/10/22 11:45		H3,u3

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 2-1 **Lab ID: 60394594008** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	80.8	%	0.50	1		03/14/22 16:23		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	19.2	%	0.10	1		03/14/22 16:23		

Sample: 2-2 **Lab ID: 60394594009** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<521	CFU/g	5.2	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	80.8	%	0.50	1		03/14/22 16:23		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	19.2	%	0.10	1		03/14/22 16:23		

Sample: 2-3 **Lab ID: 60394594010** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<529	CFU/g	5.3	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	81.1	%	0.50	1		03/14/22 16:23		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	18.9	%	0.10	1		03/14/22 16:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 2-4 **Lab ID: 60394594011** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<524	CFU/g	5.2	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	80.9	%	0.50	1		03/14/22 16:23		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	19.1	%	0.10	1		03/14/22 16:23		

Sample: 2-5 **Lab ID: 60394594012** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<490	CFU/g	4.9	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	79.6	%	0.50	1		03/14/22 16:24		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	20.4	%	0.10	1		03/14/22 16:24		

Sample: 2-6 **Lab ID: 60394594013** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<498	CFU/g	5.0	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	80.0	%	0.50	1		03/14/22 16:24		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 2-6 **Lab ID: 60394594013** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	20.0	%	0.10	1		03/14/22 16:24		

Sample: 2-7 **Lab ID: 60394594014** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<521	CFU/g	5.2	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Geometric Mean		Analytical Method: CALC A Pace Analytical Services - SE Kansas						
Fecal Coliforms	<515	CFU/g	5.2	1		03/10/22 11:45		
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	80.8	%	0.50	1		03/14/22 16:25		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	19.2	%	0.10	1		03/14/22 16:25		

Sample: 3-1 **Lab ID: 60394594015** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<613	CFU/g	6.1	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Geometric Mean		Analytical Method: CALC A Pace Analytical Services - SE Kansas						
Fecal Coliforms	<638	CFU/g	6.1	1		03/10/22 11:45		
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	83.7	%	0.50	1		03/14/22 16:25		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 3-1 **Lab ID: 60394594015** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	16.3	%	0.10	1		03/14/22 16:25		

Sample: 3-2 **Lab ID: 60394594016** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<633	CFU/g	6.3	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	84.2	%	0.50	1		03/14/22 16:26		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	15.8	%	0.10	1		03/14/22 16:26		

Sample: 3-3 **Lab ID: 60394594017** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<649	CFU/g	6.5	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	84.6	%	0.50	1		03/14/22 16:26		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	15.4	%	0.10	1		03/14/22 16:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 3-4 **Lab ID: 60394594018** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<649	CFU/g	6.5	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	84.6	%	0.50	1		03/14/22 16:26		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	15.4	%	0.10	1		03/14/22 16:26		

Sample: 3-5 **Lab ID: 60394594019** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<629	CFU/g	6.3	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	84.1	%	0.50	1		03/14/22 16:26		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	15.9	%	0.10	1		03/14/22 16:26		

Sample: 3-6 **Lab ID: 60394594020** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<645	CFU/g	6.5	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	84.5	%	0.50	1		03/14/22 16:27		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 3-6 **Lab ID: 60394594020** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	15.5	%	0.10	1		03/14/22 16:27		

Sample: 3-7 **Lab ID: 60394594021** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<649	CFU/g	6.5	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	84.6	%	0.50	1		03/14/22 16:27		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	15.4	%	0.10	1		03/14/22 16:27		

Sample: 4-1 **Lab ID: 60394594022** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<694	CFU/g	6.9	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	85.6	%	0.50	1		03/14/22 16:28		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	14.4	%	0.10	1		03/14/22 16:28		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 4-2 **Lab ID: 60394594023** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<649	CFU/g	6.5	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	84.6	%	0.50	1		03/14/22 16:28		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	15.4	%	0.10	1		03/14/22 16:28		

Sample: 4-3 **Lab ID: 60394594024** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<667	CFU/g	6.7	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	85.0	%	0.50	1		03/14/22 16:28		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	15.0	%	0.10	1		03/14/22 16:28		

Sample: 4-4 **Lab ID: 60394594025** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<658	CFU/g	6.6	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	84.8	%	0.50	1		03/14/22 16:29		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 4-4 **Lab ID: 60394594025** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	15.2	%	0.10	1		03/14/22 16:29		

Sample: 4-5 **Lab ID: 60394594026** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<645	CFU/g	6.5	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	84.5	%	0.50	1		03/14/22 16:29		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	15.5	%	0.10	1		03/14/22 16:29		

Sample: 4-6 **Lab ID: 60394594027** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform		Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas						
Fecal Coliforms	<676	CFU/g	6.8	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	85.2	%	0.50	1		03/14/22 16:30		
2540G Total Percent Solids		Analytical Method: SM 2540G Pace Analytical Services - Kansas City						
Total Solids	14.8	%	0.10	1		03/14/22 16:30		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60394594

Sample: 4-7 **Lab ID: 60394594028** Collected: 03/08/22 11:30 Received: 03/09/22 11:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MBIO 9222DS Fecal Coliform								
Analytical Method: SM 9222D Preparation Method: SM 9222D Pace Analytical Services - SE Kansas								
Fecal Coliforms	<671	CFU/g	6.7	1	03/09/22 11:28	03/10/22 11:45		H3,u3
Geometric Mean								
Analytical Method: CALC A Pace Analytical Services - SE Kansas								
Fecal Coliforms	<666	CFU/g	6.7	1		03/10/22 11:45		
Percent Moisture								
Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City								
Percent Moisture	85.1	%	0.50	1		03/14/22 16:30		
2540G Total Percent Solids								
Analytical Method: SM 2540G Pace Analytical Services - Kansas City								
Total Solids	14.9	%	0.10	1		03/14/22 16:30		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch: 776226

Analysis Method: SM 9222D

QC Batch Method: SM 9222D

Analysis Description: 9222DS MBIO Fecal Coliform

Laboratory: Pace Analytical Services - SE Kansas

Associated Lab Samples: 60394594001, 60394594002, 60394594003, 60394594004, 60394594005, 60394594006, 60394594007

METHOD BLANK: 3097934

Matrix: Water

Associated Lab Samples: 60394594001, 60394594002, 60394594003, 60394594004, 60394594005, 60394594006, 60394594007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/g	<1	1.0	03/10/22 11:45	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch: 776316

Analysis Method: SM 9222D

QC Batch Method: SM 9222D

Analysis Description: 9222DS MBIO Fecal Coliform

Laboratory: Pace Analytical Services - SE Kansas

Associated Lab Samples: 60394594008, 60394594009, 60394594010, 60394594011, 60394594012, 60394594013, 60394594014

METHOD BLANK: 3098234

Matrix: Water

Associated Lab Samples: 60394594008, 60394594009, 60394594010, 60394594011, 60394594012, 60394594013, 60394594014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/g	<1	1.0	03/10/22 11:45	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch: 776322

Analysis Method: SM 9222D

QC Batch Method: SM 9222D

Analysis Description: 9222DS MBIO Fecal Coliform

Laboratory: Pace Analytical Services - SE Kansas

Associated Lab Samples: 60394594015, 60394594016, 60394594017, 60394594018, 60394594019, 60394594020, 60394594021

METHOD BLANK: 3098254

Matrix: Water

Associated Lab Samples: 60394594015, 60394594016, 60394594017, 60394594018, 60394594019, 60394594020, 60394594021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/g	<1	1.0	03/10/22 11:45	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch: 776329

Analysis Method: SM 9222D

QC Batch Method: SM 9222D

Analysis Description: 9222DS MBIO Fecal Coliform

Laboratory: Pace Analytical Services - SE Kansas

Associated Lab Samples: 60394594022, 60394594023, 60394594024, 60394594025, 60394594026, 60394594027, 60394594028

METHOD BLANK: 3098277

Matrix: Water

Associated Lab Samples: 60394594022, 60394594023, 60394594024, 60394594025, 60394594026, 60394594027, 60394594028

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/g	<1	1.0	03/10/22 11:45	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch: 775423

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394594001, 60394594002, 60394594003, 60394594004, 60394594005, 60394594006, 60394594007, 60394594008, 60394594009, 60394594010, 60394594011, 60394594012, 60394594013

SAMPLE DUPLICATE: 3095195

Parameter	Units	60394526002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	84.4	84.4	0	20	

SAMPLE DUPLICATE: 3095196

Parameter	Units	60394594004 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	83.7	83.7	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch:	775424	Analysis Method:	ASTM D2974
QC Batch Method:	ASTM D2974	Analysis Description:	Dry Weight/Percent Moisture
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60394594014, 60394594015, 60394594016, 60394594017, 60394594018, 60394594019, 60394594020, 60394594021, 60394594022, 60394594023, 60394594024, 60394594025, 60394594026, 60394594027, 60394594028

SAMPLE DUPLICATE: 3095198

Parameter	Units	60394594014 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	80.8	80.9	0	20	

SAMPLE DUPLICATE: 3095199

Parameter	Units	60394594024 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	85.0	84.7	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch:	775407	Analysis Method:	SM 2540G
QC Batch Method:	SM 2540G	Analysis Description:	2540G Total Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60394594001, 60394594002, 60394594003, 60394594004, 60394594005, 60394594006, 60394594007, 60394594008, 60394594009, 60394594010, 60394594011, 60394594012, 60394594013

METHOD BLANK: 3095137 Matrix: Solid

Associated Lab Samples: 60394594001, 60394594002, 60394594003, 60394594004, 60394594005, 60394594006, 60394594007, 60394594008, 60394594009, 60394594010, 60394594011, 60394594012, 60394594013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	ND	0.10	03/14/22 16:17	

SAMPLE DUPLICATE: 3095138

Parameter	Units	60394526002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	15.6	15.6	0	8	

SAMPLE DUPLICATE: 3095139

Parameter	Units	60394594004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	16.4	16.3	0	8	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60394594

QC Batch: 775408

Analysis Method: SM 2540G

QC Batch Method: SM 2540G

Analysis Description: 2540G Total Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394594014, 60394594015, 60394594016, 60394594017, 60394594018, 60394594019, 60394594020, 60394594021, 60394594022, 60394594023, 60394594024, 60394594025, 60394594026, 60394594027, 60394594028

METHOD BLANK: 3095140

Matrix: Solid

Associated Lab Samples: 60394594014, 60394594015, 60394594016, 60394594017, 60394594018, 60394594019, 60394594020, 60394594021, 60394594022, 60394594023, 60394594024, 60394594025, 60394594026, 60394594027, 60394594028

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	ND	0.10	03/14/22 16:24	

SAMPLE DUPLICATE: 3095141

Parameter	Units	60394594014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	19.2	19.1	0	8	

SAMPLE DUPLICATE: 3095143

Parameter	Units	60394594024 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	15.0	15.3	2	8	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: HARTSHORNE

Pace Project No.: 60394594

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3 Sample was received or analysis requested beyond the recognized method holding time.

u3 Analysis initiated more than 8 hours but less than 24 hours after sample collection.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HARTSHORNE

Pace Project No.: 60394594

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60394594001	1-1	SM 9222D	776226	SM 9222D	776227
60394594002	1-2	SM 9222D	776226	SM 9222D	776227
60394594003	1-3	SM 9222D	776226	SM 9222D	776227
60394594004	1-4	SM 9222D	776226	SM 9222D	776227
60394594005	1-5	SM 9222D	776226	SM 9222D	776227
60394594006	1-6	SM 9222D	776226	SM 9222D	776227
60394594007	1-7	SM 9222D	776226	SM 9222D	776227
60394594008	2-1	SM 9222D	776316	SM 9222D	776318
60394594009	2-2	SM 9222D	776316	SM 9222D	776318
60394594010	2-3	SM 9222D	776316	SM 9222D	776318
60394594011	2-4	SM 9222D	776316	SM 9222D	776318
60394594012	2-5	SM 9222D	776316	SM 9222D	776318
60394594013	2-6	SM 9222D	776316	SM 9222D	776318
60394594014	2-7	SM 9222D	776316	SM 9222D	776318
60394594015	3-1	SM 9222D	776322	SM 9222D	776326
60394594016	3-2	SM 9222D	776322	SM 9222D	776326
60394594017	3-3	SM 9222D	776322	SM 9222D	776326
60394594018	3-4	SM 9222D	776322	SM 9222D	776326
60394594019	3-5	SM 9222D	776322	SM 9222D	776326
60394594020	3-6	SM 9222D	776322	SM 9222D	776326
60394594021	3-7	SM 9222D	776322	SM 9222D	776326
60394594022	4-1	SM 9222D	776329	SM 9222D	776332
60394594023	4-2	SM 9222D	776329	SM 9222D	776332
60394594024	4-3	SM 9222D	776329	SM 9222D	776332
60394594025	4-4	SM 9222D	776329	SM 9222D	776332
60394594026	4-5	SM 9222D	776329	SM 9222D	776332
60394594027	4-6	SM 9222D	776329	SM 9222D	776332
60394594028	4-7	SM 9222D	776329	SM 9222D	776332
60394594007	1-7	CALC A	776339		
60394594014	2-7	CALC A	776339		
60394594015	3-1	CALC A	776339		
60394594028	4-7	CALC A	776339		
60394594001	1-1	ASTM D2974	775423		
60394594002	1-2	ASTM D2974	775423		
60394594003	1-3	ASTM D2974	775423		
60394594004	1-4	ASTM D2974	775423		
60394594005	1-5	ASTM D2974	775423		
60394594006	1-6	ASTM D2974	775423		
60394594007	1-7	ASTM D2974	775423		
60394594008	2-1	ASTM D2974	775423		
60394594009	2-2	ASTM D2974	775423		
60394594010	2-3	ASTM D2974	775423		
60394594011	2-4	ASTM D2974	775423		
60394594012	2-5	ASTM D2974	775423		
60394594013	2-6	ASTM D2974	775423		
60394594014	2-7	ASTM D2974	775424		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HARTSHORNE

Pace Project No.: 60394594

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60394594015	3-1	ASTM D2974	775424		
60394594016	3-2	ASTM D2974	775424		
60394594017	3-3	ASTM D2974	775424		
60394594018	3-4	ASTM D2974	775424		
60394594019	3-5	ASTM D2974	775424		
60394594020	3-6	ASTM D2974	775424		
60394594021	3-7	ASTM D2974	775424		
60394594022	4-1	ASTM D2974	775424		
60394594023	4-2	ASTM D2974	775424		
60394594024	4-3	ASTM D2974	775424		
60394594025	4-4	ASTM D2974	775424		
60394594026	4-5	ASTM D2974	775424		
60394594027	4-6	ASTM D2974	775424		
60394594028	4-7	ASTM D2974	775424		
60394594001	1-1	SM 2540G	775407		
60394594002	1-2	SM 2540G	775407		
60394594003	1-3	SM 2540G	775407		
60394594004	1-4	SM 2540G	775407		
60394594005	1-5	SM 2540G	775407		
60394594006	1-6	SM 2540G	775407		
60394594007	1-7	SM 2540G	775407		
60394594008	2-1	SM 2540G	775407		
60394594009	2-2	SM 2540G	775407		
60394594010	2-3	SM 2540G	775407		
60394594011	2-4	SM 2540G	775407		
60394594012	2-5	SM 2540G	775407		
60394594013	2-6	SM 2540G	775407		
60394594014	2-7	SM 2540G	775408		
60394594015	3-1	SM 2540G	775408		
60394594016	3-2	SM 2540G	775408		
60394594017	3-3	SM 2540G	775408		
60394594018	3-4	SM 2540G	775408		
60394594019	3-5	SM 2540G	775408		
60394594020	3-6	SM 2540G	775408		
60394594021	3-7	SM 2540G	775408		
60394594022	4-1	SM 2540G	775408		
60394594023	4-2	SM 2540G	775408		
60394594024	4-3	SM 2540G	775408		
60394594025	4-4	SM 2540G	775408		
60394594026	4-5	SM 2540G	775408		
60394594027	4-6	SM 2540G	775408		
60394594028	4-7	SM 2540G	775408		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



Sample Condition Upon Receipt

WO#: 60394594



60394594

17017

Client Name:

Hodges Farms

Courier: FedEx [] UPS [] VIA [] Clay [] PEX [] ECI [] Pace [] Xroads [] Client [] Other []

Tracking #: _____ Pace Shipping Label Used? Yes [] No []

Custody Seal on Cooler/Box Present: Yes [X] No [] Seals intact: Yes [X] No []

Packing Material: Bubble Wrap [] Bubble Bags [] Foam [] None [X] Other []

Thermometer Used: T-243 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read _____ Corr. Factor -2.1 Corrected _____

Date and initials of person examining contents:

Temperature should be above freezing to 6°C

MB 1100
3/9/22

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	> 8hr. < 24hr
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: SL	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

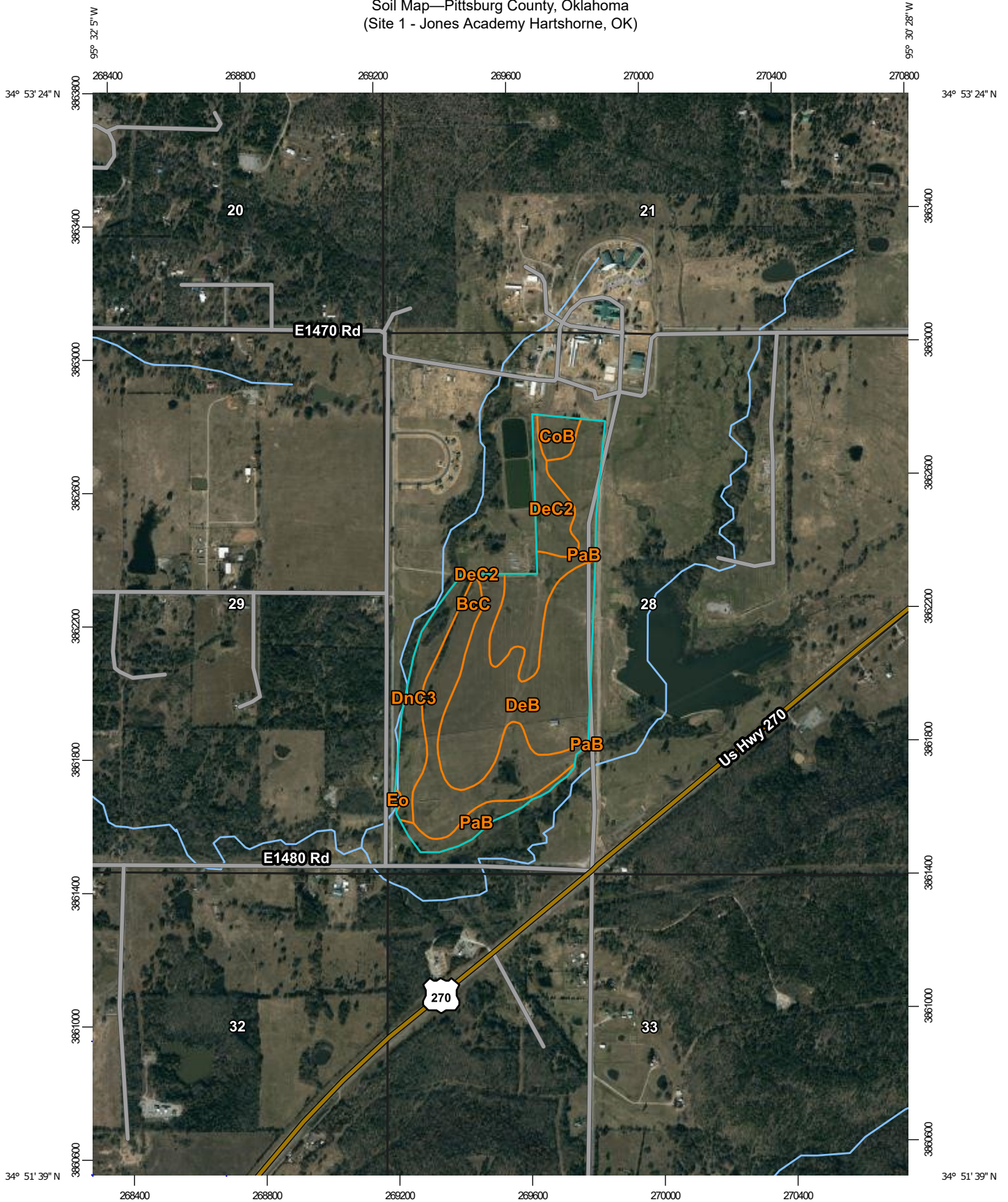
Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

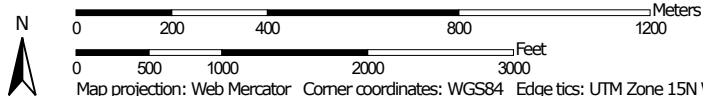
EXHIBIT E

SOIL AND APPLICATION MAP

Soil Map—Pittsburg County, Oklahoma
 (Site 1 - Jones Academy Hartshorne, OK)




Map Scale: 1:15,800 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Political Features



PLSS Township and Range



PLSS Section

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pittsburg County, Oklahoma

Survey Area Data: Version 15, Aug 27, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 14, 2019—Apr 9, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BcC	Bates-Coweta complex, 3 to 5 percent slopes	25.6	21.5%
CoB	Choteau very fine sandy loam, 0 to 3 percent slopes	3.3	2.8%
DeB	Dennis loam, 1 to 3 percent slopes	44.4	37.2%
DeC2	Dennis loam, 3 to 5 percent slopes, eroded	7.1	6.0%
DnC3	Dennis-Pharoah-Eram complex, 3 to 5 percent slopes, severely eroded	11.8	9.9%
Eo	Rexor and Verdigris soils, 0 to 1 percent slopes, frequently flooded	0.2	0.2%
PaB	Parsons silt loam, 1 to 3 percent slopes	26.9	22.6%
Totals for Area of Interest		119.4	100.0%

EXHIBIT F

SOIL SAMPLE RESULTS – NUTRIENTS

SOIL ANALYSIS REPORT

CLIENT:	HODGES FARMS & DREDGING 501 NW STREET LEBO, KS 66856
25842	



1816 E. Wyatt Earp
PO Box 1397
Dodge City, KS 67801
800.557.7509
620.227.7123
Fax 620.227.2047

LAB NO:	89921 - 89924
INVOICE NO:	890952
DATE RECEIVED:	03/25/2022
DATE REPORTED:	03/30/2022

SOIL ANALYSIS RESULTS FOR: H FIELD IDENTIFICATION:

METHOD USED:			1:1 (c) Water-Soil	Sikora 2		XSL(i)	LOI(r)	Cd Reduction		Mehlich 3	Mehlich 3 ICP									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH		Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K		Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
89921	1	0 - 10	6.0	7.1		No	1.6	4.1	12	9	41									
89922	2	0 - 10	6.0	7.1		No	1.7	2.1	6	6	40									
89923	3	0 - 10	6.1	7.1		No	1.6	2.9	9	6	30									
89924	4	0 - 10	6.2	7.1		No	1.6	2.1	6	5	40									

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P ₂ O ₅	K ₂ O	Zn	S	Mn	Cu	MgO	B	Ca	Cl	Cation Exchange Capacity					
				6.0	6.5	7.0												CEC	%H	%K	%Ca	%Mg	%Na
89921	1	BERMUDAGRASS HAY	6 tons	0.0	0.3	0.5	230	70	175														
89922	2	BERMUDAGRASS HAY	6 tons	0.0	0.3	0.5	235	75	175														
89923	3	BERMUDAGRASS HAY	6 tons	0.0	0.3	0.5	230	75	195														
89924	4	BERMUDAGRASS HAY	6 tons	0.0	0.2	0.4	235	75	175														

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 89921, 89922, 89923, 89924

IMPROVED BERMUDAGRASS: Split the nitrogen (N) applications through the summer growing season according to hay harvest or grazing schedule. Make the first nitrogen application prior to vigorous growth (April or early May) to help avoid weed competition. Make other applications after each cutting or grazing period. The required phosphate (P₂O₅) or potash (K₂O) may be blended with one of the early nitrogen applications to be topdressed on established stands.

PASTURE: Use fertilizer recommendations that have been developed for hay production. In an improved grazing system, the equivalent of one ton of hay yield should provide about 30 days grazing for a cow-calf pair or about 40 days grazing for a weaned calf or about 25 to 30 days grazing for a yearling calf.

Analyses are representative of the samples submitted Samples are retained 30 days after report of analysis Explanations of soil analysis terms are available upon request

Reviewed and
Approved By: Michele Pacheco
Data Review Coordinator

Page 1 of 1
03/30/2022 8:44 am

The reported analytical results apply only to the sample as it was supplied. The report may not be reproduced, except in full, without permission of ServiTech.
Your opinion is valuable to us. Please let us know what you think about our services! Send an email to feedback@servitech.com.

EXHIBIT G

SOIL SAMPLE RESULTS – METALS

April 05, 2022

Jeff Hodges
Hodges Farms & Dredging LLC
501 N. West Street
Lebo, KS 66856

RE: Project: HARTSHORNE
Pace Project No.: 60396347

Dear Jeff Hodges:

Enclosed are the analytical results for sample(s) received by the laboratory on March 28, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Nolie Wood
nolie.wood@pacelabs.com
1(913)563-1401
Project Manager

Enclosures

cc: Aaron Gruenwald, Hodges Farms and Dredging, LLC



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: HARTSHORNE

Pace Project No.: 60396347

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: HARTSHORNE

Pace Project No.: 60396347

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60396347001	COMP H	Solid	03/08/22 12:00	03/28/22 12:40

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: HARTSHORNE

Pace Project No.: 60396347

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60396347001	COMP H	EPA 6010	JLH	15	PASI-K
		EPA 7471	ALH	1	PASI-K
		ASTM D2974	DWC	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: HARTSHORNE

Pace Project No.: 60396347

Sample: COMP H **Lab ID: 60396347001** Collected: 03/08/22 12:00 Received: 03/28/22 12:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Red. Interference		Analytical Method: EPA 6010 Preparation Method: EPA 3050 Pace Analytical Services - Kansas City						
Aluminum	6720	mg/kg	9.1	1	04/04/22 10:53	04/04/22 20:48	7429-90-5	
Arsenic	2.6	mg/kg	1.2	1	04/04/22 10:53	04/04/22 20:48	7440-38-2	
Cadmium	ND	mg/kg	0.61	1	04/04/22 10:53	04/04/22 20:48	7440-43-9	
Calcium	1100	mg/kg	24.3	1	04/04/22 10:53	04/04/22 20:48	7440-70-2	
Chromium	6.3	mg/kg	0.61	1	04/04/22 10:53	04/04/22 20:48	7440-47-3	
Copper	3.8	mg/kg	2.4	1	04/04/22 10:53	04/04/22 20:48	7440-50-8	
Lead	11.8	mg/kg	1.2	1	04/04/22 10:53	04/04/22 20:48	7439-92-1	
Magnesium	770	mg/kg	6.1	1	04/04/22 10:53	04/04/22 20:48	7439-95-4	
Molybdenum	ND	mg/kg	2.4	1	04/04/22 10:53	04/04/22 20:48	7439-98-7	
Nickel	5.4	mg/kg	0.61	1	04/04/22 10:53	04/04/22 20:48	7440-02-0	
Potassium	468	mg/kg	60.8	1	04/04/22 10:53	04/04/22 20:48	7440-09-7	
Selenium	3.0	mg/kg	1.8	1	04/04/22 10:53	04/04/22 20:48	7782-49-2	
Silver	ND	mg/kg	0.85	1	04/04/22 10:53	04/04/22 20:48	7440-22-4	
Sodium	ND	mg/kg	60.8	1	04/04/22 10:53	04/04/22 20:48	7440-23-5	
Zinc	16.1	mg/kg	12.2	1	04/04/22 10:53	04/04/22 20:48	7440-66-6	
7471 Mercury		Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Kansas City						
Mercury	ND	mg/kg	0.011	1	04/04/22 16:30	04/05/22 10:36	7439-97-6	
Percent Moisture		Analytical Method: ASTM D2974 Pace Analytical Services - Kansas City						
Percent Moisture	19.4	%	0.50	1		03/31/22 16:14		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60396347

QC Batch: 779455

Analysis Method: EPA 7471

QC Batch Method: EPA 7471

Analysis Description: 7471 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60396347001

METHOD BLANK: 3109182

Matrix: Solid

Associated Lab Samples: 60396347001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.050	04/05/22 10:20	

LABORATORY CONTROL SAMPLE: 3109183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.5	0.51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3109184 3109185

Parameter	Units	3109184		3109185		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/kg	0.57	0.58	0.58	0.87	1.1	52	84	75-125	19	20 M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60396347

QC Batch: 779369

Analysis Method: EPA 6010

QC Batch Method: EPA 3050

Analysis Description: 6010 MET

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60396347001

METHOD BLANK: 3109004

Matrix: Solid

Associated Lab Samples: 60396347001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	mg/kg	ND	7.5	04/05/22 11:06	
Arsenic	mg/kg	ND	1.0	04/05/22 11:06	
Cadmium	mg/kg	ND	0.50	04/05/22 11:06	
Calcium	mg/kg	ND	20.0	04/05/22 11:06	
Chromium	mg/kg	ND	0.50	04/05/22 11:06	
Copper	mg/kg	ND	2.0	04/05/22 11:06	
Lead	mg/kg	ND	1.0	04/05/22 11:06	
Magnesium	mg/kg	ND	5.0	04/05/22 11:06	
Molybdenum	mg/kg	ND	2.0	04/05/22 11:06	
Nickel	mg/kg	ND	0.50	04/05/22 11:06	
Potassium	mg/kg	ND	50.0	04/05/22 11:06	
Selenium	mg/kg	ND	1.5	04/05/22 11:06	
Silver	mg/kg	ND	0.70	04/05/22 11:06	
Sodium	mg/kg	ND	50.0	04/05/22 11:06	
Zinc	mg/kg	ND	10.0	04/05/22 11:06	

LABORATORY CONTROL SAMPLE: 3109005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/kg	1000	1050	105	80-120	
Arsenic	mg/kg	100	85.8	86	80-120	
Cadmium	mg/kg	100	98.5	99	80-120	
Calcium	mg/kg	1000	959	96	80-120	
Chromium	mg/kg	100	99.4	99	80-120	
Copper	mg/kg	100	99.8	100	80-120	
Lead	mg/kg	100	98.9	99	80-120	
Magnesium	mg/kg	1000	1000	100	80-120	
Molybdenum	mg/kg	100	104	104	80-120	
Nickel	mg/kg	100	103	103	80-120	
Potassium	mg/kg	1000	978	98	80-120	
Selenium	mg/kg	100	91.3	91	80-120	
Silver	mg/kg	50	46.7	93	80-120	
Sodium	mg/kg	1000	1020	102	80-120	
Zinc	mg/kg	100	94.8	95	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60396347

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3109006 3109007												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		60396358001 Result	Spike Conc.	Spike Conc.	MS Result							
Aluminum	mg/kg	17900	988	1080	25100	25000	735	659	75-125	1	20	M1
Arsenic	mg/kg	3.7	98.8	108	84.5	92.2	82	82	75-125	9	20	
Cadmium	mg/kg	3.8	98.8	108	89.7	98.5	87	88	75-125	9	20	
Calcium	mg/kg	1970	988	1080	2910	3090	96	104	75-125	6	20	
Chromium	mg/kg	9.0	98.8	108	111	121	103	104	75-125	9	20	
Copper	mg/kg	9.3	98.8	108	106	118	98	100	75-125	10	20	
Lead	mg/kg	14.4	98.8	108	104	110	91	89	75-125	6	20	
Magnesium	mg/kg	2530	988	1080	3910	4110	141	147	75-125	5	20	M1
Molybdenum	mg/kg	ND	98.8	108	92.3	102	93	94	75-125	10	20	
Nickel	mg/kg	17.1	98.8	108	113	119	97	95	75-125	6	20	
Potassium	mg/kg	1910	988	1080	4160	4280	227	220	75-125	3	20	M1
Selenium	mg/kg	ND	98.8	108	93.3	102	94	95	75-125	9	20	
Silver	mg/kg	ND	49.4	54	46.5	50.6	94	94	75-125	9	20	
Sodium	mg/kg	54.4	988	1080	1100	1170	106	104	75-125	6	20	
Zinc	mg/kg	27.4	98.8	108	122	133	96	98	75-125	8	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: HARTSHORNE

Pace Project No.: 60396347

QC Batch: 778975

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60396347001

METHOD BLANK: 3107431

Matrix: Solid

Associated Lab Samples: 60396347001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	03/31/22 16:13	

SAMPLE DUPLICATE: 3107432

Parameter	Units	60396210001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.9	23.1	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: HARTSHORNE

Pace Project No.: 60396347

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: HARTSHORNE

Pace Project No.: 60396347

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60396347001	COMP H	EPA 3050	779369	EPA 6010	779507
60396347001	COMP H	EPA 7471	779455	EPA 7471	779577
60396347001	COMP H	ASTM D2974	778975		

REPORT OF LABORATORY ANALYSIS

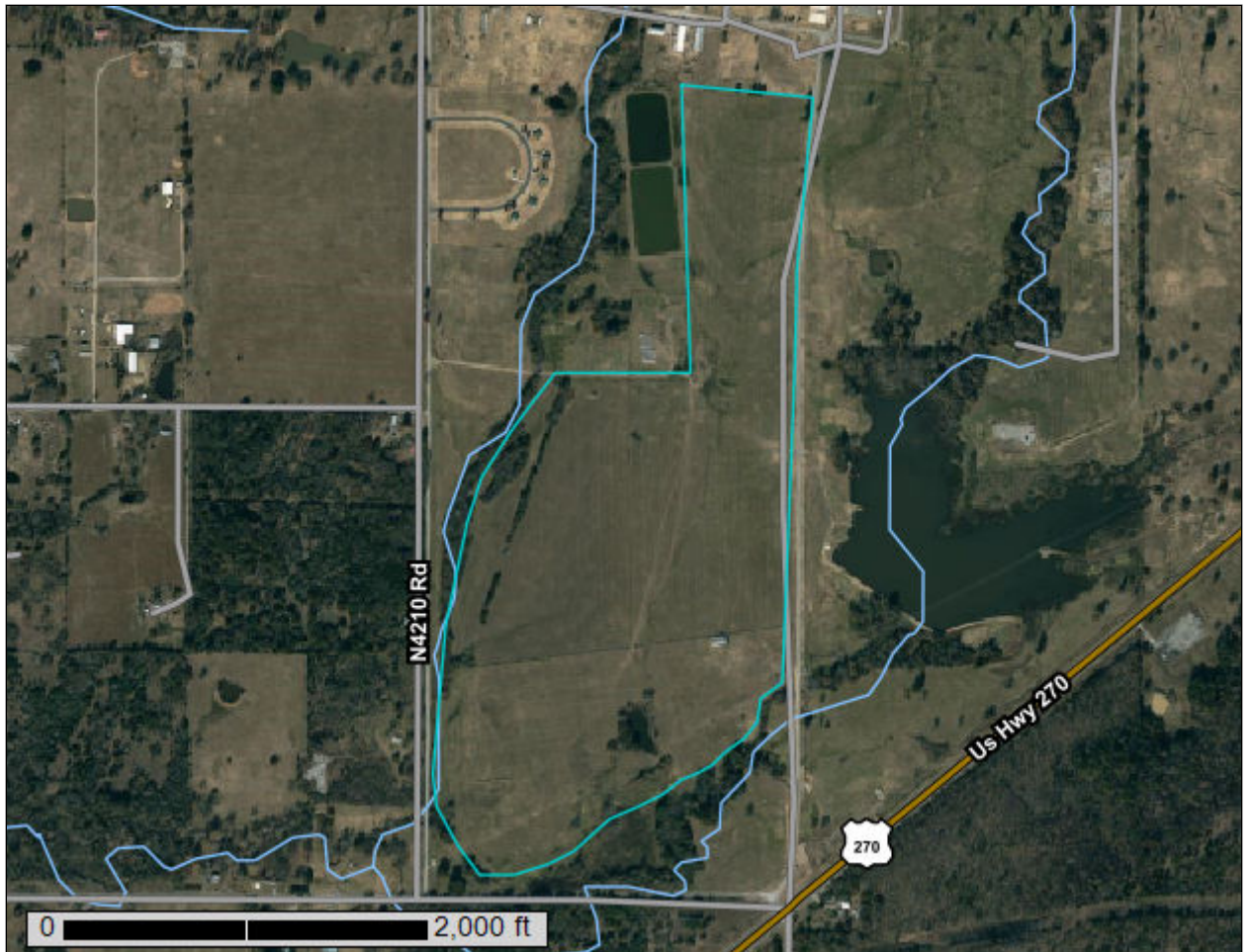
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

EXHIBIT H

NRCS SITE SOIL REPORTS

Custom Soil Resource Report for **Pittsburg County, Oklahoma**

**Jones Academy Hartshorne OK
Site 1**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Pittsburg County, Oklahoma.....	13
BcC—Bates-Coweta complex, 3 to 5 percent slopes.....	13
CoB—Choteau very fine sandy loam, 0 to 3 percent slopes.....	15
DeB—Dennis loam, 1 to 3 percent slopes.....	16
DeC2—Dennis loam, 3 to 5 percent slopes, eroded.....	17
DnC3—Dennis-Pharoah-Eram complex, 3 to 5 percent slopes, severely eroded.....	18
Eo—Rexor and Verdigris soils, 0 to 1 percent slopes, frequently flooded...21	
PaB—Parsons silt loam, 1 to 3 percent slopes.....	23
References	26

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

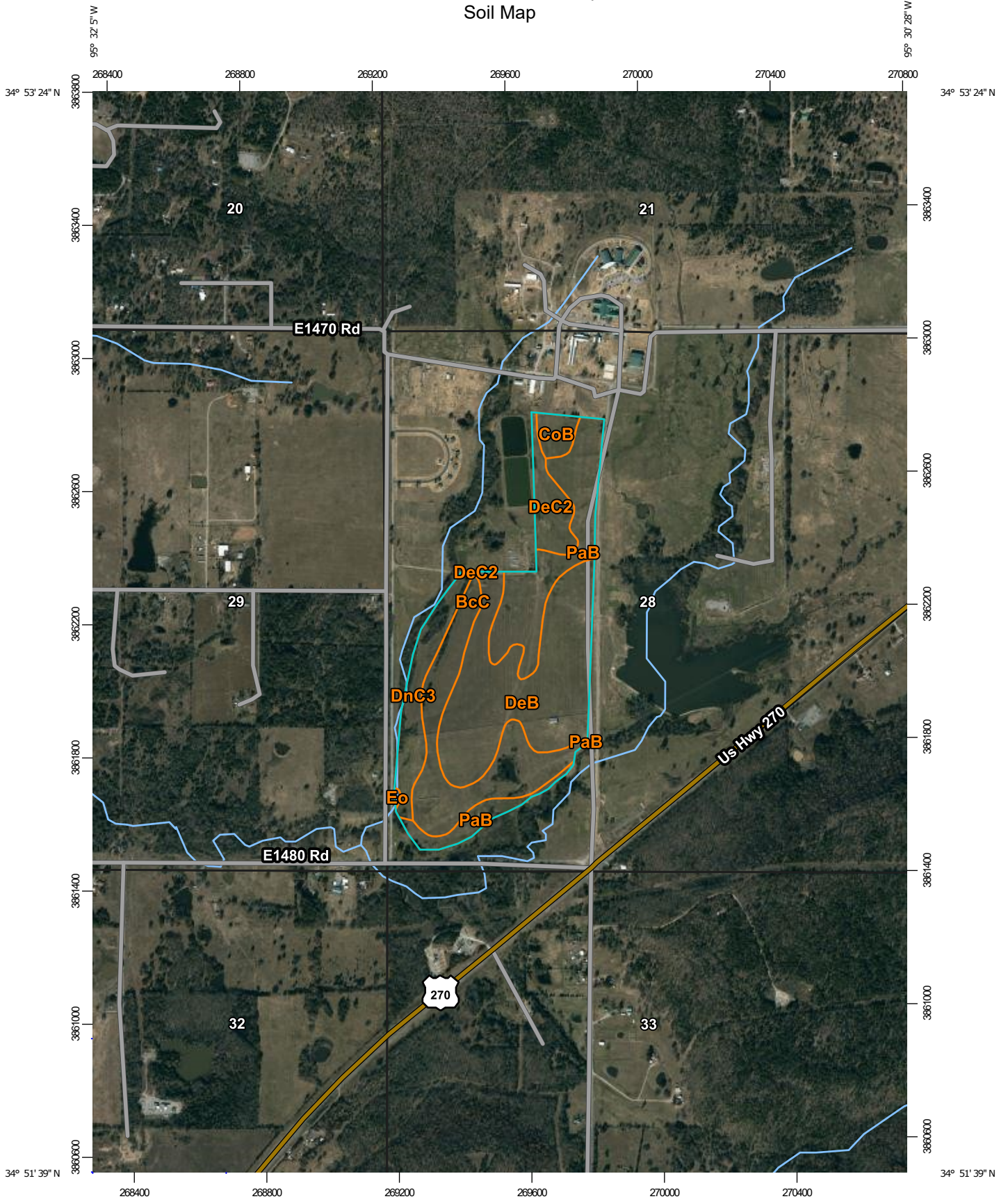
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

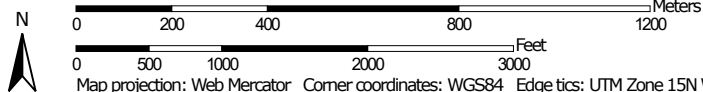
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:15,800 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines



 Soil Map Unit Points

Special Point Features


-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features






Political Features

-  PLSS Township and Range
-  PLSS Section


Water Features

-  Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pittsburg County, Oklahoma
 Survey Area Data: Version 15, Aug 27, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 14, 2019—Apr 9, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BcC	Bates-Coweta complex, 3 to 5 percent slopes	25.6	21.5%
CoB	Choteau very fine sandy loam, 0 to 3 percent slopes	3.3	2.8%
DeB	Dennis loam, 1 to 3 percent slopes	44.4	37.2%
DeC2	Dennis loam, 3 to 5 percent slopes, eroded	7.1	6.0%
DnC3	Dennis-Pharoah-Eram complex, 3 to 5 percent slopes, severely eroded	11.8	9.9%
Eo	Rexor and Verdigris soils, 0 to 1 percent slopes, frequently flooded	0.2	0.2%
PaB	Parsons silt loam, 1 to 3 percent slopes	26.9	22.6%
Totals for Area of Interest		119.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a

Custom Soil Resource Report

given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Pittsburg County, Oklahoma

BcC—Bates-Coweta complex, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: m5qj
Elevation: 500 to 1,360 feet
Mean annual precipitation: 35 to 46 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 170 to 235 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bates and similar soils: 50 percent
Coweta and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bates

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 5 inches: fine sandy loam
BA - 5 to 15 inches: loam
Bt - 15 to 25 inches: clay loam
Cr - 25 to 50 inches: bedrock

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R112XY060OK - Loamy prairie (Southeast) PE 62-80
Forage suitability group: Unnamed (G112XY073OK)
Other vegetative classification: Unnamed (G112XY073OK)
Hydric soil rating: No

Description of Coweta

Setting

Landform: Hillslopes on hills
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone and shale

Typical profile

A - 0 to 10 inches: fine sandy loam
Bw - 10 to 25 inches: gravelly fine sandy loam
Cr - 25 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 10 to 25 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R112XY087OK - Shallow prairie PE 62-80
Forage suitability group: Unnamed (G112XY018OK)
Other vegetative classification: Unnamed (G112XY018OK)
Hydric soil rating: No

Minor Components

Dennis

Percent of map unit: 6 percent
Landform: Hillslopes on hills
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY060OK - Loamy prairie (Southeast) PE 62-80
Other vegetative classification: Unnamed (G112XY091OK)
Hydric soil rating: No

Eram

Percent of map unit: 4 percent
Landform: Hillslopes on hills
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY060OK - Loamy prairie (Southeast) PE 62-80
Other vegetative classification: Unnamed (G112XY069OK)
Hydric soil rating: No

CoB—Choteau very fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: m5qn
Elevation: 500 to 1,200 feet
Mean annual precipitation: 37 to 46 inches
Mean annual air temperature: 57 to 62 degrees F
Frost-free period: 190 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Choteau and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Choteau

Setting

Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and clayey alluvium or colluvium over shale

Typical profile

Ap - 0 to 16 inches: very fine sandy loam
E - 16 to 22 inches: loam
Bt1 - 22 to 32 inches: clay loam
Bt2 - 32 to 72 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 30 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R112XY060OK - Loamy prairie (Southeast) PE 62-80
Forage suitability group: Unnamed (G112XY106OK)
Other vegetative classification: Unnamed (G112XY106OK)
Hydric soil rating: No

DeB—Dennis loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: m5qq
Elevation: 500 to 1,360 feet
Mean annual precipitation: 35 to 46 inches
Mean annual air temperature: 57 to 65 degrees F
Frost-free period: 170 to 235 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Dennis and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dennis

Setting

Landform: Hillslopes on hills
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale

Typical profile

A - 0 to 13 inches: loam
BE - 13 to 19 inches: silty clay loam
Bt - 19 to 64 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: R112XY060OK - Loamy prairie (Southeast) PE 62-80
Forage suitability group: Unnamed (G112XY091OK)
Other vegetative classification: Unnamed (G112XY091OK)
Hydric soil rating: No

Minor Components

Parsons

Percent of map unit: 3 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R112XY010OK - Claypan prairie PE 62-80
Other vegetative classification: Unnamed (G112XY078OK)
Hydric soil rating: No

Bates

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY059OK - Loamy prairie (Northeast) PE 62-80
Other vegetative classification: Unnamed (G112XY073OK)
Hydric soil rating: No

DeC2—Dennis loam, 3 to 5 percent slopes, eroded

Map Unit Setting

National map unit symbol: m5qs
Elevation: 500 to 1,360 feet
Mean annual precipitation: 35 to 46 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 170 to 235 days
Farmland classification: Not prime farmland

Map Unit Composition

Dennis, eroded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dennis, Eroded

Setting

Landform: Hillslopes on hills
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale

Typical profile

A - 0 to 10 inches: loam
BE - 10 to 16 inches: silty clay loam
Bt - 16 to 64 inches: clay

Custom Soil Resource Report

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: R112XY856OK - Eroded Loamy Prairie PE 62-80
Forage suitability group: Unnamed (G112XY091OK)
Other vegetative classification: Unnamed (G112XY091OK)
Hydric soil rating: No

Minor Components

Eram, eroded

Percent of map unit: 3 percent
Landform: Hillslopes on hills
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY856OK - Eroded Loamy Prairie PE 62-80
Other vegetative classification: Unnamed (G112XY069OK)
Hydric soil rating: No

Bates, eroded

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY856OK - Eroded Loamy Prairie PE 62-80
Other vegetative classification: Unnamed (G112XY026OK)
Hydric soil rating: No

DnC3—Dennis-Pharoah-Eram complex, 3 to 5 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: m5qt
Elevation: 500 to 1,360 feet
Mean annual precipitation: 35 to 46 inches

Custom Soil Resource Report

Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 170 to 235 days
Farmland classification: Not prime farmland

Map Unit Composition

Dennis, severely eroded, and similar soils: 50 percent
Pharoah, severely eroded, and similar soils: 30 percent
Eram, severely eroded, and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dennis, Severely Eroded

Setting

Landform: Hillslopes on hills
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from shale

Typical profile

A - 0 to 13 inches: loam
BE - 13 to 19 inches: silty clay loam
Bt - 19 to 64 inches: clay

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C/D
Ecological site: R112XY856OK - Eroded Loamy Prairie PE 62-80
Forage suitability group: Unnamed (G112XY091OK)
Other vegetative classification: Unnamed (G112XY091OK)
Hydric soil rating: No

Description of Pharoah, Severely Eroded

Setting

Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey alluvium and/or residuum weathered from shale

Typical profile

A - 0 to 6 inches: silt loam

Custom Soil Resource Report

Bt - 6 to 56 inches: silty clay

BC - 56 to 90 inches: silty clay

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very high

*Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.00 to 0.06 in/hr)*

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Gypsum, maximum content: 2 percent

Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Ecological site: R112XY810OK - Eroded Claypan Prairie PE 62-80

Forage suitability group: Unnamed (G112XY000OK)

Other vegetative classification: Unnamed (G112XY000OK)

Hydric soil rating: No

Description of Eram, Severely Eroded

Setting

Landform: Hillslopes on hills

Landform position (two-dimensional): Backslope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Clayey residuum weathered from sandstone and shale

Typical profile

A - 0 to 10 inches: silt loam

Bt - 10 to 30 inches: clay loam

Cr - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: About 12 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Custom Soil Resource Report

Ecological site: R112XY856OK - Eroded Loamy Prairie PE 62-80
Forage suitability group: Unnamed (G112XY069OK)
Other vegetative classification: Unnamed (G112XY069OK)
Hydric soil rating: No

Minor Components

Bates, severely eroded

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY856OK - Eroded Loamy Prairie PE 62-80
Other vegetative classification: Unnamed (G112XY026OK)
Hydric soil rating: No

Eo—Rexor and Verdigris soils, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: m5r0
Elevation: 300 to 1,500 feet
Mean annual precipitation: 36 to 56 inches
Mean annual air temperature: 57 to 65 degrees F
Frost-free period: 190 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Rexor and similar soils: 45 percent
Verdigris and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rexor

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 9 inches: silt loam
Bw - 9 to 43 inches: silt loam
C - 43 to 70 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B
Ecological site: R119XY050OK - Loamy Bottomland, F119XY013AR - Loamy
Floodplain
Forage suitability group: Unnamed (G118BY107OK)
Other vegetative classification: Unnamed (G118BY107OK)
Hydric soil rating: No

Description of Verdigris

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Typical profile

A - 0 to 15 inches: silt loam
C - 15 to 90 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B
Ecological site: R112XY050OK - Loamy bottomland PE 62-80
Forage suitability group: Unnamed (G112XY057OK)
Other vegetative classification: Unnamed (G112XY057OK)
Hydric soil rating: No

Minor Components

Cupco

Percent of map unit: 10 percent

Custom Soil Resource Report

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F118BY005OK - Loamy Bottomland Formerly R118BY050OK - Legacy
Other vegetative classification: Unnamed (G119XY070OK)
Hydric soil rating: Yes

Dela

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R119XY062OK - Loamy Savannah
Other vegetative classification: Unnamed (G119XY092OK)
Hydric soil rating: No

Lightning

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R112XY045OK - Heavy bottomland PE 62-80
Other vegetative classification: Unnamed (G112XY288OK)
Hydric soil rating: Yes

PaB—Parsons silt loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: m5rh
Elevation: 500 to 1,200 feet
Mean annual precipitation: 35 to 46 inches
Mean annual air temperature: 57 to 65 degrees F
Frost-free period: 190 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Parsons and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parsons

Setting

Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey alluvium and/or residuum weathered from shale

Custom Soil Resource Report

Typical profile

A - 0 to 7 inches: silt loam
E - 7 to 12 inches: silt loam
Btg1 - 12 to 24 inches: clay
Btg2 - 24 to 62 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.00 to 0.06 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R112XY0100K - Claypan prairie PE 62-80
Forage suitability group: Unnamed (G112XY078OK)
Other vegetative classification: Unnamed (G112XY078OK)
Hydric soil rating: No

Minor Components

Dennis

Percent of map unit: 2 percent
Landform: Hillslopes on hills
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY0600K - Loamy prairie (Southeast) PE 62-80
Other vegetative classification: Unnamed (G112XY091OK)
Hydric soil rating: No

Taloka

Percent of map unit: 2 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R112XY0600K - Loamy prairie (Southeast) PE 62-80
Other vegetative classification: Unnamed (G112XY078OK)
Hydric soil rating: No

Eram

Percent of map unit: 1 percent
Landform: Hillslopes on hills
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R112XY0600K - Loamy prairie (Southeast) PE 62-80

Custom Soil Resource Report

Other vegetative classification: Unnamed (G112XY069OK)
Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

EXHIBIT I

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY FORM 850SMP



Oklahoma Department of Environmental Quality
 707 N. Robinson, OKC OK 73102-6010
**Application for
 Municipal Sludge Land Application Permit**

As required by the Oklahoma Environmental Quality Code

This application is to be submitted to obtain a Municipal Sludge Land Application Permit. Application, plans, and specifications submitted in triplicate through the County DEQ personnel.

To the Executive Director of The Department of Environmental Quality
 Department of Environmental Quality
 Water Quality Division
 P.O. Box 1677
 Oklahoma City, OK 73101-1677

Date: 4-1-2022

Application

The applicant, Jones Academy, proposes to land apply sludge
Name of Applicant (Print or Type)

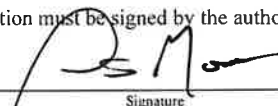
generated at Jones Academy WTF, facility ID No. S-20660,
Name of Treatment Plant (Print or Type)

located at Sec 28, T5N, R17E, Pittsburg County
Legal Description

Jones Academy, hereby makes application for a permit to land apply sludge as required by OAC 252:606 of the Oklahoma Environmental Quality Code, 27A O.S. Supp. 2000, Section 2-1-2-101 et seq., the Solid Waste Management Act, 27A:2-10-101 et seq., Article VI of the Code [Water Quality], 27A:2-6-101 et seq., the Oklahoma Pollutant Discharge Elimination System Act, 27A:2-6-201 et sig. And any rules and regulations pursuant thereto.

Applicant Signature

Note: Application must be signed by the authorized chief elective or executive officer of the applicant. Information must be legible.

 Signature	<u>Jones Academy</u> Name of Organization (Print or Type)
<u>Patrick Moore</u> Name of Authorized Signature (Print or Type)	<u>909 Jones Academy Rd.</u> Street Address (Print or Type)
<u>Superintendent</u> Title	<u>Hartshorne OK 74547</u> City/State/Zip Code

COUNTY DEQ PERSONNEL ONLY

I have had the opportunity to review this application and comment on it.

Signature: _____
 Title: _____
 County: _____
 Date: _____

DO NOT USE THIS SPACE - ODEQ ONLY

EXHIBIT J

OKLAHOMA DEQ APPLICATION FOR LAND APPLICATION

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
APPLICATION FOR AUTHORIZATION TO BE COVERED UNDER GENERAL PERMIT GP NO _____
FOR LAND APPLICATION OF SEWAGE SLUDGE**

FORM _____

FOR DEQ USE ONLY	Application/Permit Number GP _____ Date Received _____ One Time Land Application _____, Minor Facility _____ DEQ Biosolids Coordinator _____
-------------------------------------	--

SECTION I

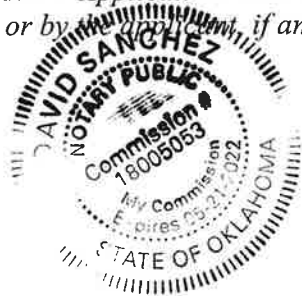
- 1. Legal name of applicant:**
_____ Eastern Oklahoma Tribal Schools Choctaw Nation Jones Academy _____
- 2. Mailing address of applicant:**
Street address or PO Box _____ 909 Jones Academy Road _____
City Hartshorne County Pittsburg State OK Zip 74547
Telephone (____) 888.767.2518
- 3. Name and address of facility:**
Facility Name _____ Jones Academy Wastewater Facility _____
City Hartshorne County Pittsburg State OK Zip 74547
- 4. Location of land application site:**
Legal Description: 1/4, ~~W~~ 1/2 1/4, Sec 28, T 5N, R 7E (X) IM () CM.
Entry Point: Longitude 34 52'50"N Latitude 95 31'14"W
- 5. Type Ownership** Public () Private (X) Federal () State ()
- 6. Contact Person:**
Name & Title _____
Street address or PO Box _____
City _____ County _____ State _____ Zip _____
Telephone (____) _____
- 7. Type of Treatment:**
Minor Facility: Design Capacity As needed Estimated Sludge Production 7-10 Dry Tons/Year
Lagoon: Estimated sludge quantity 750 Dry Tons
Other sludge storage facility: Estimated sludge quantity N/A (Dry Tons)
- 8. Does Facility Receive Industrial Wastes?** Yes () No (X)
If "yes", What is the average daily industrial waste flow _____ GPD
If the facility receives wastewater from a categorical industry, you must submit Section II of this form (attached) for each categorical industrial facility discharging to the sewer system.
- 9. Are industrial discharge(s) to the system controlled by ordinance?** Yes () No (X)

10. **Sludge generated by the facility:**

- A. When was the last time sludge was removed from the facility (date) Never
- B. Was removal authorized by DEQ? Yes () No () N/A
- C. How was it disposed of (describe the disposal method) N/A
- D. Location(s) of the disposal site(s) (legal description to the nearest 10 acres) N/A
- E. Sludge Management Plan, if any:
Sludge Plan ID Number One Time Cleanout approved by the Department of Environmental Quality

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I also certify that I will provide for the operation of this facility in accordance with the Oklahoma Discharge Permits and Pollution Control Regulations and will provide certified operators as required by the Oklahoma Water and Wastewater Operations Certification Act. I further certify that I shall acquire or possess a right to the use of the property or properties on which the land application activities are located as well as the access route thereto. I understand I shall maintain such right of use and access for the duration of the permit term. I am aware that there are significant penalties for submitting false information, including revocation of the permit and the possibility of fine and imprisonment.

Note: Application must be signed by the authorized chief elective or executive officer of the applicant, or by the applicant, if an individual.



Name (print) x Patrick Moore
Title Superintendent
Date 04/11/22
Signature [Handwritten Signature]

18005053
Subscribed and sworn to before me this 11 day of April, 2022.
[Handwritten Signature] My commission expires 5-21-2022

This application shall be filed in duplicate with the original and one copy to be submitted to the DEQ, and one copy to be submitted to the local DEQ office.

Please return completed form with attachments to:
Water Quality Division
Department of Environmental Quality
707 N. Robinson, P>O. Box 1677
Oklahoma City, Oklahoma 73102-1677

EXHIBIT K

MASTER SITE LIST – FIELD 1

**JONES ACADEMY WTF, HARTSHORNE, OK APPLICATION
MASTER SITE LIST 2022**

TOTALS:									
	90.0						9,163.35		21,992,032
Field ID	Total Acres	2022 Crop	Anticipated Crop	Nitrogen Rate lbs per Acre *	Plant Available Nitrogen (Lbs / Dry Ton)	Application Rate Dry Tons per Acre	Total Dry Tons to be Applied	Application Rate Gallons per Acre (@10% Solids)**	Total Gallons (@ 10% Solids)
1	90.0	Berm	Bermudagrass	230.0	2.259	101.81	9,163.35	244,356	21,992,032

* Per Servi-Tech Laboratories Soil Analysis Report Recommendation (4 Dry Tons / Ac)

** Agronomic Application Rate (dt/ac) / % Total Solids (as a decimal) x 240