

BATES, DONNA

From: McClure, Linda (IDEM)
Sent: Tuesday, April 11, 2023 11:25 AM
To: BATES, DONNA
Cc: Wren, Kira
Subject: FW: Green Cow Power LLC / Elisha Yoder Closure Plan email 2 of 2
Attachments: QM GEN 001 R22 Environmental US Quality Manual Amereco Inc QAPP.pdf

Follow Up Flag: Flag for follow up
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Hi Donna,

Please VFC the attached.

Green Cow and Elisha Yoder
2022-28629-C & 2022-28630-C

Thanks,

Linda McClure
IDEM | OLQ Enforcement
317.233.5954
lmccclure@idem.in.gov

From: Melissa Lehman <melissa@agronomicsolutionsllc.com>
Sent: Friday, April 7, 2023 1:11 PM
To: McClure, Linda (IDEM) <lmccclure@idem.IN.gov>
Cc: STEPHANOFF, BRENDA <BSTEPHAN@idem.IN.gov>
Subject: Green Cow Power LLC / Elisha Yoder Closure Plan email 2 of 2

**** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ****

Attached is the QAPP for Element Lab. It belongs in Appendix B of the closure plan, but it is password protected and I couldn't figure out how to merge it with the other pages of the plan. If needed, I can print off hard copies of everything and scan it as one file, but then that file will be too large to email.

Please let me know if you have any questions, changes or would like me to submit it differently.

Thank you!
Melissa Lehman

**Melissa Lehman**

Agronomic Solutions, LLC
CCA, NRCS TSP
(260) 593-2092 Work
(574) 202-2608 Mobile

P.O. Box 340
Topeka, IN 46571
melissa@agronomicsolutionsllc....
<http://agronomicsolutionsllc.com>



Indiana Department of Environmental Management

Solid Waste Permits Section

Closure Work Plan for a Former Surface Impoundment

And

Supporting Documentation

For:

Green Cow Power LLC

66569 CR 13

Goshen, IN 46526

Emergency Pond Location for Closure:

Marshall County

~3347 6th Rd. Bremen IN 46506

USGS Quad:

T 34 R 3 Section 24

Prepared By:

Agronomic Solutions, LLC

Melissa Lehman

PO Box 340

Topeka, IN 46571

(260) 593-2092

Closure Work Plan

Emergency Surface Impoundment

Prepared for:

Green Cow Power LLC – Brent Martin – Digester Owner

Elisha Yoder – Impoundment Owner

Date Submitted: April 7, 2023



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Figure 2: Site Sampling Map

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Appendix A: Figures – listed above

Appendix B: Quality Assurance Project Plan – Element Labs

Appendix C: Analytical Summary

Appendix D: Laboratory Result

Appendix E: Disposal Land Application Records

1.0 Introduction

On behalf of Green Cow Power LLC, Agronomic Solutions LLC has prepared this Closure Plan to describe the means and methods of achieving a Clean Closure for the Surface Impoundment located in Marshall County on the south side of 6th Rd just west of SR331. This “Emergency Industrial Waste Storage Pond” was constructed by Elisha Yoder on his property in Marshall County in March of 2022. We are now in the process of completing a clean closure as a result of the ensuing violation and Agreed Order from IDEM that came from those actions. This plan follows the Indiana Department of Environmental Management (IDEM) Office of Land Quality (OLQ) Surface Impoundment Closure Guidance. The closure plan will include the following: complete removal of the industrial waste product/sludge within the impoundment, removal of residues and contaminated subsurface media, establishment of background concentrations, removal verification, and disposal in accordance with Clean Closure requirements.

- 1.1 Site Background

Mr. Yoder wanted to construct a satellite manure storage on his property in Marshall county because he wanted to be able to land apply manure on his fields to reduce his crop fertilizer expenses. Mr. Yoder is an employee of Mr. Martin and was aware of the emergency situation at the Green Cow Power LLC digester pond (Confined Feeding Operation Approval VFC#8305216). IDEM officials visited the site when Brent called in the emergency level in his digester pond, March 2022. He was told by IDEM, that he could build an emergency storage to move enough liquid out of his digester pond to keep the digester from backfilling with effluent. IDEM failed to mention that it had to be on Brent’s property, so Mr. Yoder volunteered to make one since he wanted the nutrients for his crops. Mr. Yoder started the construction of the impoundment right away and industrial waste product from the Green Cow Power LLC Pond was trucked over around March 25, 2022. An approximate total of 350,000 gallons of industrial waste product was hauled to the site in 40 semi loads and stored in this impoundment.

- 1.2 Surface Impoundment Description

The “Emergency Industrial Waste Storage Pond” was constructed by Mr. Yoder on his property in Marshall County on the south side of 6th road in March of 2022. Please see the site maps in Appendix A for the exact impoundment location. The structure has top dimensions of 115’x140’ with a 10 ft depth and with 3:1 side slopes. This gives the structure a usable capacity of 503,135 gallons with a 2 ft freeboard, total capacity of 678,735 gallons and a surface area of 16,100 ft². It is loaded and unloaded in the northeast corner of the pond, where there is a drive off of the road. This pond was only ever used once, Spring 2022 to hold the emergency industrial waste coming from the Green Cow Power LLC digester located in Elkhart County. This waste was then land applied (in violation) to Mr. Yoder’s crop field located south of the pond on May 14, 2022. Currently the impoundment has collected rainwater since May and contains roughly 24” of liquid inside.

2.0 Sampling and Analysis Plan (SAP)

The SAP describes the location and type of samples to be collected to demonstrate the removal of the accumulated industrial waste residue from the approximately 16,100 square feet impoundment. This SAP includes all of the required components of a clean closure which are: Establishment of Background, Removal Verification and Waste Residue/Contaminated Media Disposal.

The Agreed Order states that the respondents only have 15 days to begin the implementation of the approved Clean Closure Plan once it's been approved by IDEM staff. The owner is prepared to move quickly once the IDEM review is completed and keep in compliance with the clean closure.

2.1 Laboratory Analysis

Sample analysis will be completed by Element Materials Technology Fort Wayne, per their Quality Assurance Manual that is included as Appendix B. Analytical methods will be in accordance with U.S. Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW 846 846. The parameters tested for this plan is based on discussions with IDEM, the Green Cow Power LLC land application permit (IN LA 000853) Permit, and Green Cow Power LLC Agreed Order dated March 7, 2023 include:

- Resource Conservation and Recovery Act (RCRA) metals – Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver
- Nitrate
- Possibly volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC)

Samples will not be composited and will all be individually analyzed from the proposed locations. Full quality assurance and quality control (QAQC) will be implemented for the samples. Samples will be collected, preserved, identified, and submitted under chain-of-custody protocols. A Level VI Quality Assurance and Quality Control (QAQC) data package will be requested for the results. The reports will be provided in Appendix C of the final report.

2.2 Background Establishment

2.21 Background Soil Characterization

Four background samples of soil will be collected near the impoundment, but from an area that is uncontaminated and undisturbed by facility activities. With the limited area directly around the impoundment, one background sample will be collected west of the residence on undisturbed ground that Elisha owns and one to the just southwest of the impoundment. Two samples will be collected near the WTP where aerial photographs indicate use is cropland over the years. Since we are collecting the samples at a 6ft depth, these areas should be undisturbed at that level.

Samples will be collected from an approximate depth of five to six feet below the surface elevation via a small excavator. The general locations are identified on the Sampling Map in Appendix A. Soil sample locations will be recorded as sampling is completed and the figure updated with the actual locations as part of the final report.

The findings for the background analysis for the impoundment will be discussed in this section and provided in a table in Appendix C. Laboratory results will be provided in Appendix D.

2.22 Constituents of Concern

The impoundment received effluent industrial waste product from the Green Cow Power LLC digester. This digester receives food waste from various sources to make it operate more efficiently, as well as the dairy manure from the onsite farm owned by Brent Martin. The digester receives the following food waste: Campbells soup, corn dogs, food grade starch and a limited amount of grease. The digester gets one semi load of Campbell's soup waste per day, normally 6 days a week, 312 loads per year. They also receive one semi load of waste corn dogs per day, normally 6 days a week, 312 loads per year. Once a week it receives a semi load of food grade starch product, which equals 52 loads per year. Lastly, the digester receives approximately 20 loads per year (2,500-3,000 gallons maximum size) of restaurant grease from a septic hauler. The addition of these listed products requires that the effluent from the Green Cow Power LLC digester be labelled Industrial Waste Product and requires an Industrial Waste Product Land Application Permit from IDEM (IN LA 000853). The Agreed Order lists that the following constituents must be tested for: Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), Nitrate, and possibly Volatile organic compounds (VOC's) and semi-volatile organic compounds (SVOC).

2.3 Removal Verification

2.31 Removal Activities/ Waste Disposal

The waste residue and stormwater currently in the impoundment will be removed by pumping the liquid out first with tankers. We will test this liquid using the Element Land Ap package 6 as it's being removed and transported to Elkhart County to be land applied on an approved field. Next the impoundment liner will be inspected for any staining or discolorations that would indicate residues being present from the black pond digester effluent. Any potentially contaminants liner areas will be removed and loaded onto a solid manure spreader to be land applied on the same approved field as a solid material. All potential waste residues will be removed before acquiring the confirmational samples. We will document the waste residue removal with photographic evidence and provide the land application records for all liquid and solid waste removed and land applied from the site. The findings for the contaminated media analysis for the impoundment will be discussed in this section and provided in a table in Appendix C. Laboratory results will be provided in Appendix D.

2.32 Confirmatory Sampling

Once the waste residue is removed from the impoundment, verification samples will be collected. Care will be taken to obtain as representative a sample as possible. Exact sampling locations will be determined in the field based on accessibility. The general locations are identified on the Sampling Map in Appendix A. Soil sample locations will be recorded as sampling is completed and the figure updated with the actual locations as part of the final report. Soil samples from the impoundment will be collected as grab samples from a depth of 0 to 6 inches below the exposed ground surface after the waste residue has been removed. Only two samples are required from inside the impoundment due to it's small size. The plan is to collect one sample from the impoundment bottom and one from the other sidewall. Samples are to be analyzed for the Contaminants of Concern. Quality control samples will be collected in accordance with the Surface Impoundment Closure Plan – Green Cow Power LLC

attached Quality Assurance Project Plan (QAPP) included in Appendix B. The quality assurance / quality control (QA/QC) procedures and protocols documented in the QAPP will be adhered to throughout sample collection and laboratory analysis.

Once impoundment soil removal activities are complete and verification analyses have been completed, the final Closure Report will be submitted to IDEM for approval. The closure document shall contain verification of the amount of soil disposed of and the method of disposal, photographic evidence of the impoundment before and after removal of soil, and all tests and analysis along with a summary of how the justification of closure had been reached.

The findings from the removal verification analysis will be discussed in this section and provided in a table in Appendix C. Laboratory results will be provided in Appendix D.

- 2.4 Site Restoration

The impoundment owner, Elisha Yoder, would like to keep the pond as a satellite manure storage structure to accept liquid manure from area duck and hog farmers. We understand that many steps need to be completed first before this can be considered. Once the final Closure Report has been completed and turned into IDEM for review, and it is deemed properly closed, Mr. Yoder would like to explore the possibility of utilizing the pond for manure storage.

Appendix A

Figures

Site Location Map
Background Sampling
Confirmatory Sampling

Prepared for:

Green Cow Power LLC – Brent Martin – Digester Owner

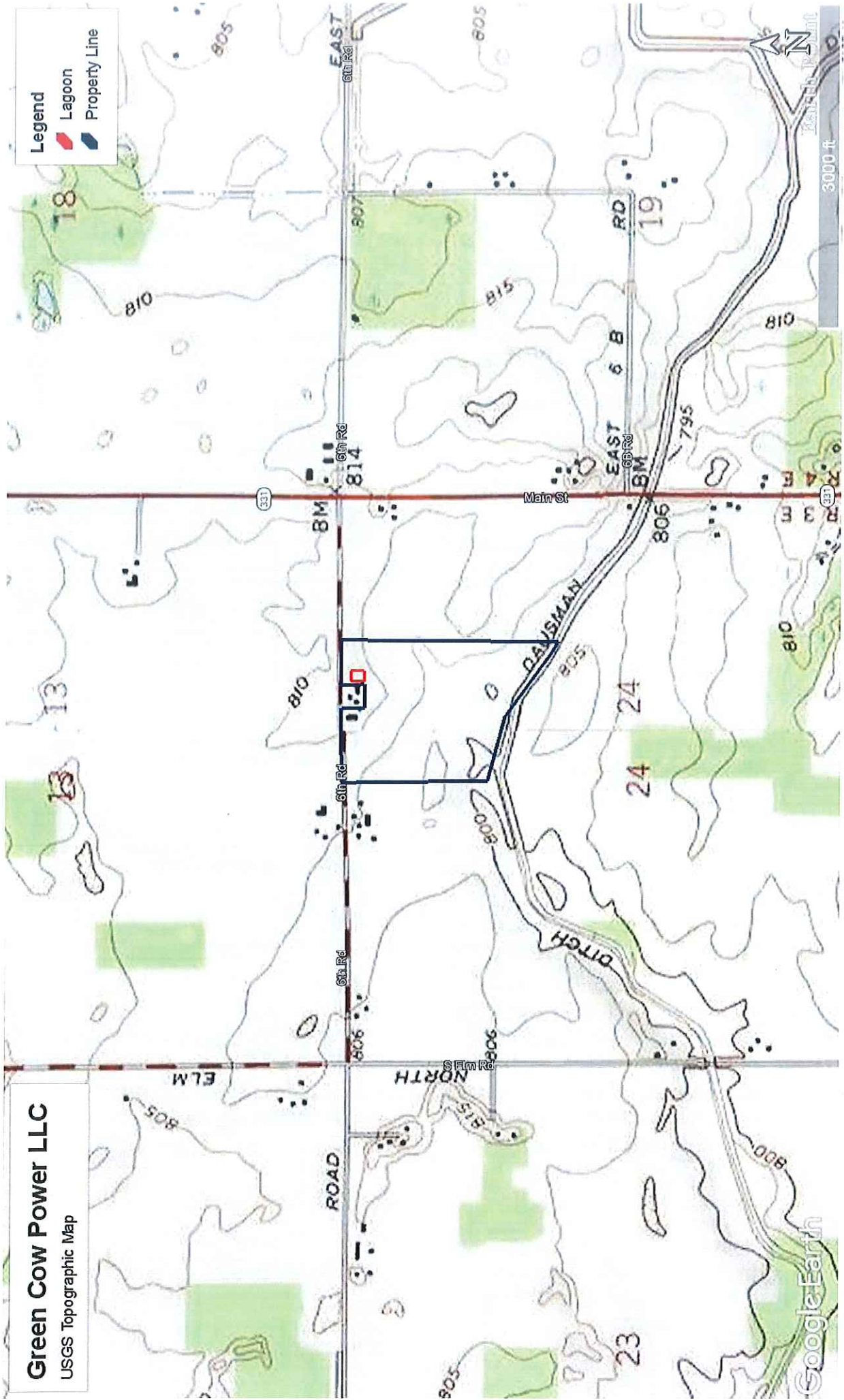
Elisha Yoder – Impoundment Owner



Green Cow Power LLC

USGS Topographic Map

- Legend
- Lagoon
 - Property Line



Green Cow Power LLC

Emergency Lagoon Closure

Site Map

~3347 6th Rd
Bremen, IN 46506

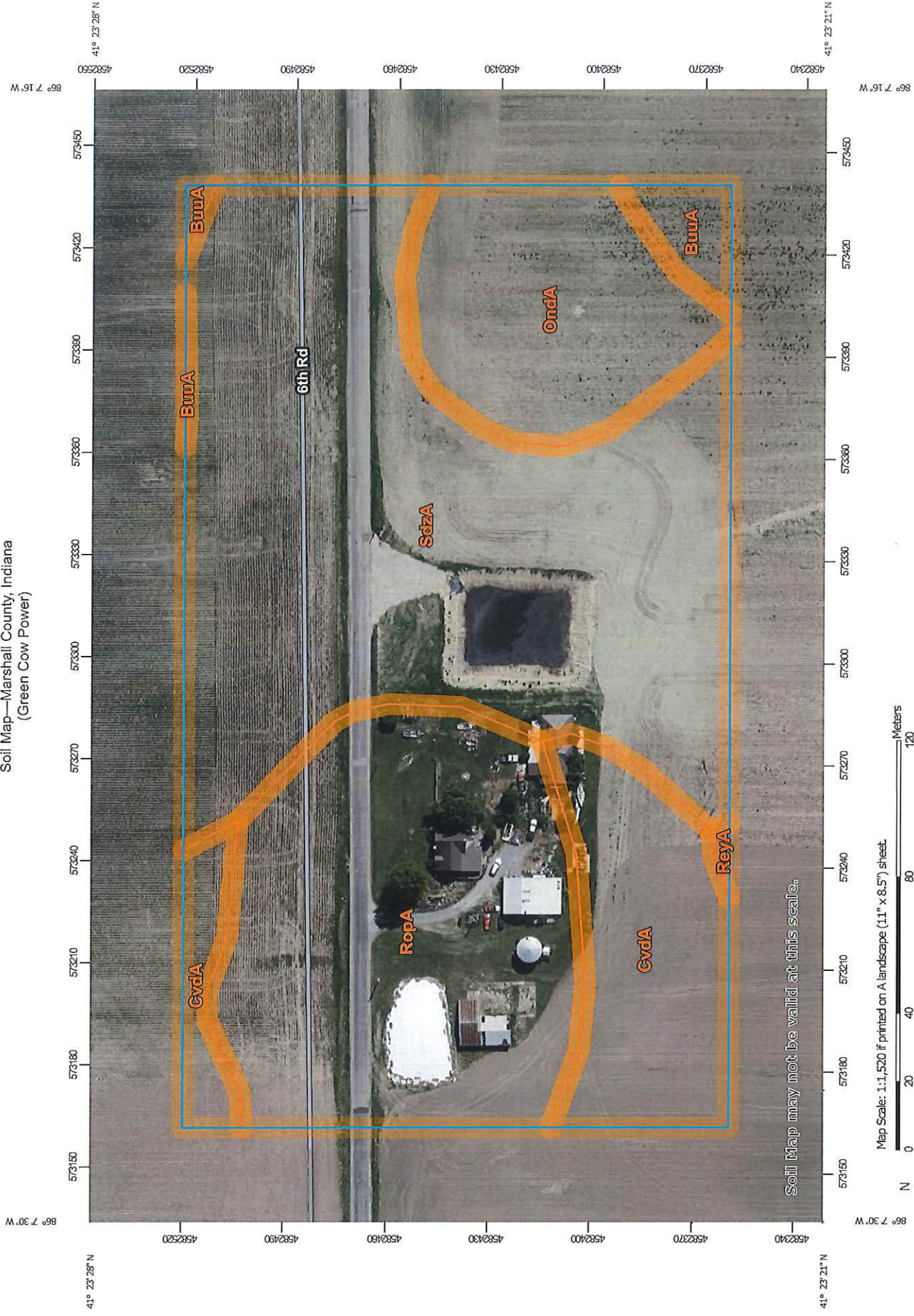
Legend

- Background Point
- Bottom Point
- Sidewall Point



Google Earth

Soil Map—Marshall County, Indiana (Green Cow Power)



Map Scale: 1:1,520 If printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N 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
- Water Features

Streams and Canals
- Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads
- Background

Aerial Photography
- Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.
Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Marshall County, Indiana
Survey Area Data: Version 25, Sep 2, 2022

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

Date(s) aerial images were photographed: Jun 16, 2022—Jun 21, 2022

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
BuuA	Brookston loam, 0 to 1 percent slopes	0.2	1.9%
CvdA	Crosier loam, 0 to 1 percent slopes	1.4	12.9%
OndA	Owosso sandy loam, 0 to 2 percent slopes	1.4	12.3%
ReyA	Rensselaer loam, 0 to 1 percent slopes	0.0	0.2%
RopA	Riddles-Oshtemo fine sandy loams, 0 to 1 percent slopes	2.9	26.3%
SdzA	Selfridge-Crosier complex, 0 to 1 percent slopes	5.1	46.4%
Totals for Area of Interest		11.0	100.0%

Marshall County, Indiana

SdzA—Selfridge-Crosier complex, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2nbl5

Elevation: 580 to 1,200 feet

Mean annual precipitation: 34 to 40 inches

Mean annual air temperature: 47 to 51 degrees F

Frost-free period: 170 to 185 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Selfridge and similar soils: 50 percent

Crosier and similar soils: 35 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Selfridge

Setting

Landform: Till plains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy outwash over loamy till

Typical profile

Ap - 0 to 11 inches: loamy sand

E - 11 to 25 inches: loamy sand

2Bt1 - 25 to 29 inches: sandy loam

2Bt2 - 29 to 32 inches: clay loam

2Cg - 32 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly 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: About 12 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F111XC009IN - Overflow, R111XC006IN - Flat
Glacial Ridge
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Description of Crosier

Setting

Landform: Till plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 11 inches: loam
Btg - 11 to 30 inches: clay loam
BC - 30 to 38 inches: loam
Cd - 38 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 24 to 40 inches to densic material
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 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F111XC007IN - Glacial Ridge, R111XC006IN - Flat
Glacial Ridge
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Brady

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex

Appendix B

Quality Assurance Manual

Element Materials Technology Fort Wayne

Prepared for:

Green Cow Power LLC – Brent Martin – Digester Owner

Elisha Yoder – Impoundment Owner



Appendix C

Analytical Summary

Prepared for:

Green Cow Power LLC – Brent Martin – Digester Owner

Elisha Yoder – Impoundment Owner



Appendix D

Laboratory Analytical Reports

Prepared for:

Green Cow Power LLC – Brent Martin – Digester Owner

Elisha Yoder – Impoundment Owner



Appendix E

Disposal Land Application Records

Prepared for:

Green Cow Power LLC – Brent Martin – Digester Owner

Elisha Yoder – Impoundment Owner

