DATA INFORMATION REQUEST
American Suburban Utilities, Inc.

Cause No. 44676 S1

Information Requested:

Reference Sludge Holding Pond Nos. 1 and 2 and the Deactivated Two-Day Secondary Lagoon (Tertiary Pond) shown on Plan Sheet 13-021-01 included with IDEM Construction Permit No. 20788.

a. Please provide copies of any IDEM correspondence or other writing directing that ASU dispose of the lagoon sludge as part of the CE-III WWTP project.

b. Please provide a copy of the Closure Plan for these impoundments submitted to IDEM.

c. State what year the Tertiary Pond was deactivated and no longer used to treat wastewater.

d. State the dates closure was completed for each sludge holding pond and the tertiary pond.

e. Please provide a copy of the Closure Plan reports submitted to IDEM for each sludge lagoon and the tertiary pond.

f. For each sludge holding pond and tertiary pond, quantify the amount of sludge disposed (in gallons and dry tons) by disposal method (land application or landfilling).

g. For sludge land applied, please provide copies of the Land Application Monthly Reports.

(Continued on next page)

Information Provided:

a. Refer to attached IDEM Deficiency Notice dated September 11, 2013, Part 11 Technical Review, Item 8.

b. Refer to the attached Surface Impoundment Closure Plans for the Carriage Estates III WWTP.

c. The Tertiary Pond was deactivated in 2000.

d. Refer to attached IDEM Final Closure Certification Letter dated November 25, 2020.

e. This data is available from IDEM's Virtual File Cabinet as listed in IDEM's attached letter dated November 25, 2020.

f. This data is available from IDEM's Virtual File Cabinet as listed in IDEM's attached letter dated November 25, 2020.

g. This data is available from IDEM's Virtual File Cabinet as listed in IDEM's attached letter dated November 25, 2020.

Attachments:

OUCC DR 18-3.pdf

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

September 11, 2013

Mr. Scott Lods, President
American Suburban Utilities, Inc.
3350 W. 250 N
West Lafayette, Indiana 47906

Dear Mr. Lods:

Re: Deficiency Notice for
Construction Permit Application
Carriage Estates III Wastewater
Treatment Plant Expansion
West Lafayette, Indiana
Tippecanoe County
Project No. PS-1392X

This will acknowledge the receipt of plans and specifications on July 18, 2013, in connection with your application for a Construction Permit, pursuant to IC 13-7-10 et. seq., and 327 IAC Article 3 et. seq., on the above-referenced project.

Your application has been found to be deficient. The following administrative and technical items are required to complete your application for a Construction Permit. Please be advised that if all the deficiency items are not corrected or resolved within sixty (60) days of the date of this letter, your application will be denied on the basis of incompleteness.

I. ADMINISTRATIVE EVALUATION

Upon review of your application, no administrative deficiencies were noted.

If you have any questions concerning the administrative accuracy of this application, please contact Don Worley at 317/232-5579, Fax 317/232-8637 or by e-mail at dworley@idem.in.gov.

II. TECHNICAL REVIEW

This office has completed review of the submitted project and offers the following technical comment(s):

1. Please provide complete engineering design calculations for the proposed wastewater treatment plant (WWTP) improvements.

2. Description of the proposed facilities indicate that only the structures and equipment required for 4.0 MGD will be installed as a part of this project. The organic loading of 22.4 lbs.BOD/1,000cu.ft. listed on page No.10 of your design summary indicates that 6.0 MGD was used in calculations. Please note that the volumetric loading for SBR aeration tanks which provide nitrification process is normally limited to 15 lbs.BOD/1,000 cu.ft./day (Section 92.31, Chapter 90 of Recommended Standards for Wastewater Facilities 2004 Edition). Also note that the above-mentioned requirement additionally requires that volumetric loading should be calculated at the low-water level.

3. Provide the number of SBR "cycles" per day and the cycle's times for: mix-fill, aeration, settling and decant for normal and storm mode.

4. Section 20.4, Chapter 20, page 20-4 of Recommended Standards for Wastewater Facilities 2004 Edition requires:

a. Schematic flow diagram(s) showing the flow through various plant units, and showing utility systems serving the plant process.

b. Piping, including any arrangements for bypassing individual units (materials handled and direction of flow through pipes shall be shown).

c. Hydraulic profiles showing the flow of wastewater, supernatant liquor, and sludge.

d. Test borings and groundwater elevations (including engineering recommendations).

Please provide all of the above-mentioned requirements on your plans, refer to Recommended Standards foe Wastewater Facilities 2004 Edition for further information when preparing your plans.

5. A new 400 KW standby power generator is included in your specifications but its location isn't shown on your plans. Please provide the proposed location of the new generator and indicate the new equipment on your design summary in the miscellaneous section.

6. A new control building and blower building are shown on plan drawing No.13-021-02. Please provide the detail drawings for the proposed buildings and include them on your design summary in the miscellaneous section.

7. Your WWTP design summary form lists 98.1 days of detention time in the aerobic digesters No. 1 and 2, 98.1 days in the digesters No.3,4,5, and 6, and 98.1 days in the digesters No. 7, 8,9 and 10. Please clarify if the listed detention time is a total of 98.1 days or sum of three times of 98.1days. Provide your calculations of detention time in the proposed digesters. The design summary also lists land application as ultimate method of sludge disposal. Please note that 40 CFR part 503 requires 60 days digester SRT @ 15° C and an additional 90 days effective storage capacity is required in addition to the 60 day SRT treatment requirement when land application is the method of sludge disposal.

8. Two existing sludge storage lagoons are shown on your plan drawings. Please clarify that the above mentioned lagoon will be cleaned and abandoned.

9. An effluent phosphorus limit of 1.0 mg/l will be included in the new NPDES effluent limits. A biological phosphorus removal is proposed as part of the project. Please provide this office with similar systems operating data to justify that the proposed system can consistently meet the proposed 1.0 mg/l limit. If the above-mentioned information is not available this office will required a chemical addition as a back-up to the biological phosphorus removal.

10. Description of the proposed facilities indicate that a liquid alum feed system shall be furnished and install and connected to the supernatant holding tank for removing phosphorus prior to returning the supernatant back to the head of the plant. Please include the above-mentioned facilities on your design summary in the phosphorus removal section.

If you have any questions regarding the technical matters of your application, please contact me at 317/232-8664 or by e-mail at mflorczy@idem.in.gov.

Sincerely,

Matthew Florczyk

Matthew Florczyk
Project Engineer
Facility Construction and
Engineering Support Section
Office of Water Quality

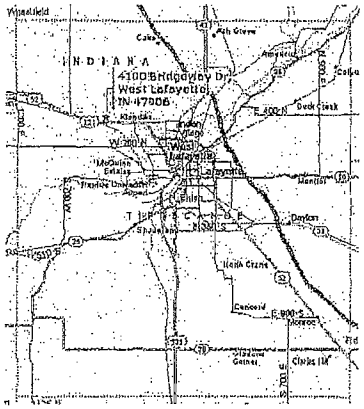
cc: Mr. Edward J. Serowka, P.E., Lakeland InnovaTech

Carriage Estates III
Wastewater Treatment Plant
Surface Impoundment Closure
West Lafayette, Tippecanoe County, Indiana

PROJECT OWNER:
American Suburban Utilities
3350 W 250 N
West Lafayette, Indiana 47906

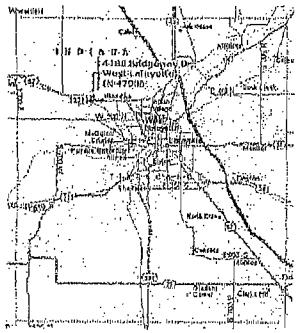
PROJECT ENGINEER:
Lakeland InnovaTech
332 Persimmon Trail
Lafayette, IN 47909-6823
TEL: (317) 796-5273
e-mail: eserowka270@earthlink.net

PROJECT NUMBER: 14-041

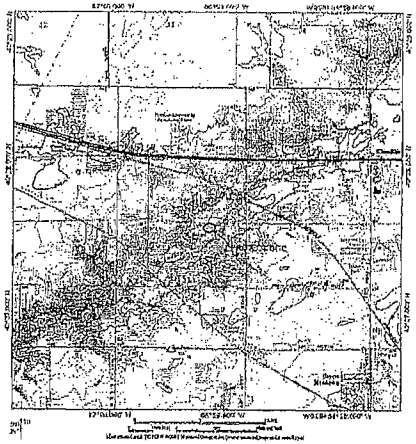


PROJECT PLAN SHEET INDEX

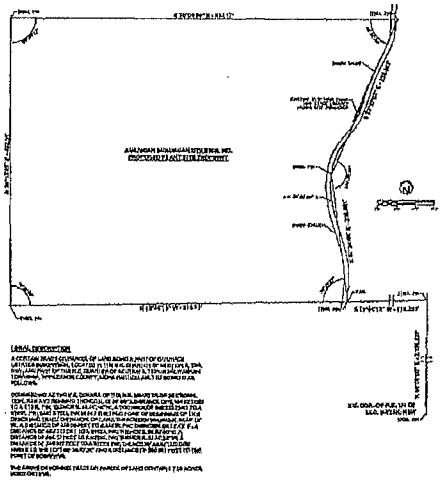
SHEET NO.	DESCRIPTION
14-041-01	PLANT LOCATION
14-041-02	PLANT SITE LAYOUT - EXISTING
14-041-03	PLANT SITE LAYOUT - PROPOSED
14-041-04	SURFACE IMPOUNDMENT CLOSURE LAYOUT
14-041-05	SURFACE IMPOUNDMENT CLOSURE SPECIFICATIONS
14-041-06	EXISTING TERTIARY POLISHING LAGOON DETAILS



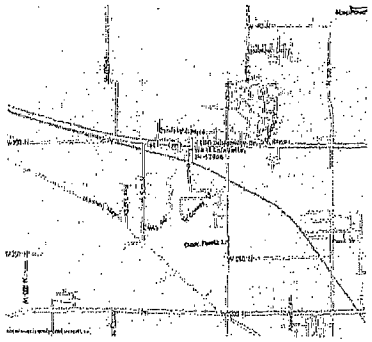
TIPPECANOE COUNTY
CARRIAGE ESTATES III WWTP
4100 BRIDGEWAY DRIVE
WEST LAFAYETTE, IN 47906



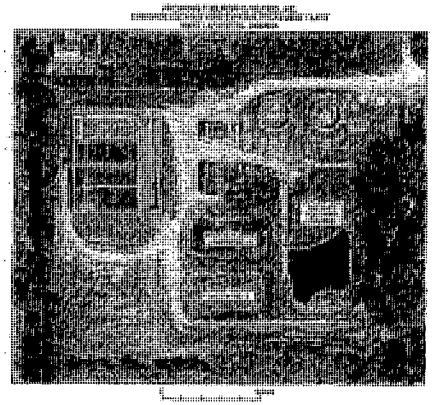
TOPOGRAPHIC
CARRIAGE III ESTATES WWTP
4100 BRIDGEWAY DRIVE
WEST LAFAYETTE, IN 47906



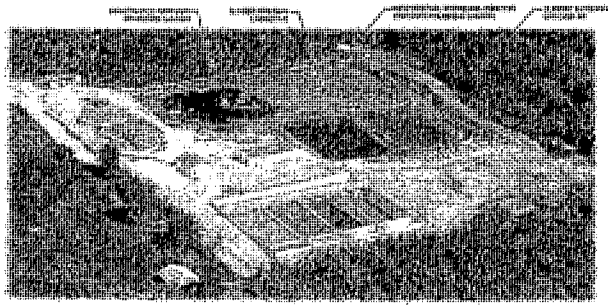
LEGAL DESCRIPTION



LOCAL MAP
CARRIAGE ESTATES III WWTP
4100 BRIDGEWAY DRIVE
WEST LAFAYETTE, IN 47906



AMERICAN SUBURBAN UTILITIES, INC.
CARRIAGE ESTATES WASTEWATER TREATMENT PLANT
WEST LAFAYETTE, INDIANA



NOTE: PICTURE WAS TAKEN IN 2009 JUST PRIOR TO THE DEACTIVATION OF THE TERTIARY POLISHING LAGOON.

REVISIONS

REV	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, INDIANA 47909-8828
TEL: (317) 788-8273

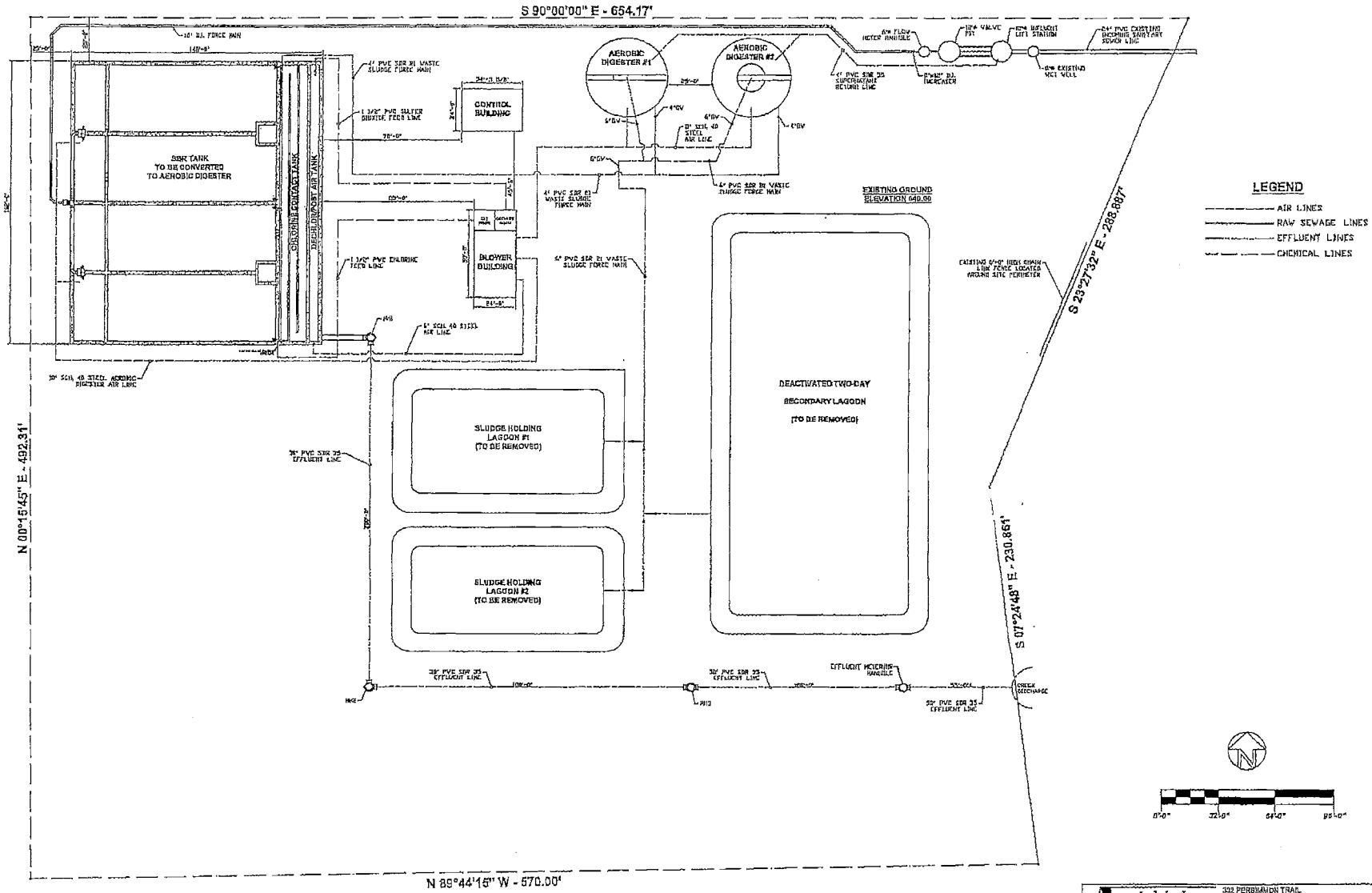
CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

SCALE: AS LISTED	APPROVED BY: E. J. SERGUVICH, P.E.	DRAWN BY:
DATE: 02/09/2015		

PLANT LOCATION

AMERICAN SUBURBAN UTILITIES
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

DRAWING NUMBER: 14441-01



PLANT SITE LAYOUT - EXISTING

SCALE: 1" = 25'-0"

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, INDIANA 47909-8929
TEL: (317) 796-8273

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

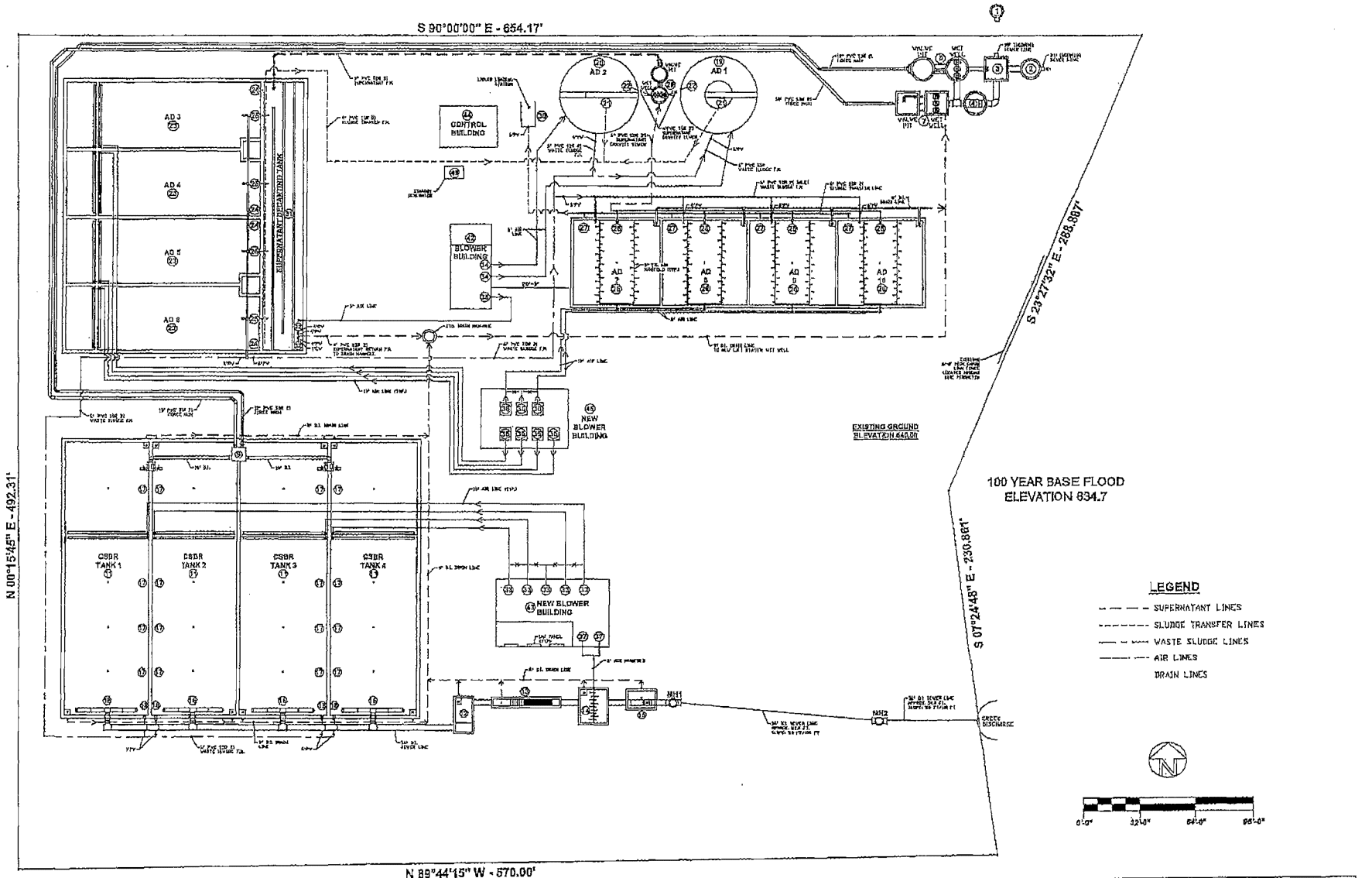
SCALE: AS LISTED | APPROVED BY: C. J. SERVIKA, P.E. | DRAWN BY: | CHK'D:
DATED: 02/05/2015

PLANT SITE LAYOUT - EXISTING

AMERICAN SUBURBAN UTILITIES
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

DRAWING NUMBER 14-043-02

Cause No. 44676 S1
DUCO DR 18-3
Page 6 of 11



PLANT SITE LAYOUT - PROPOSED

SCALE: 1" = 25'-0"

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, INDIANA 47905-8223
TEL: (317) 786-8273

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

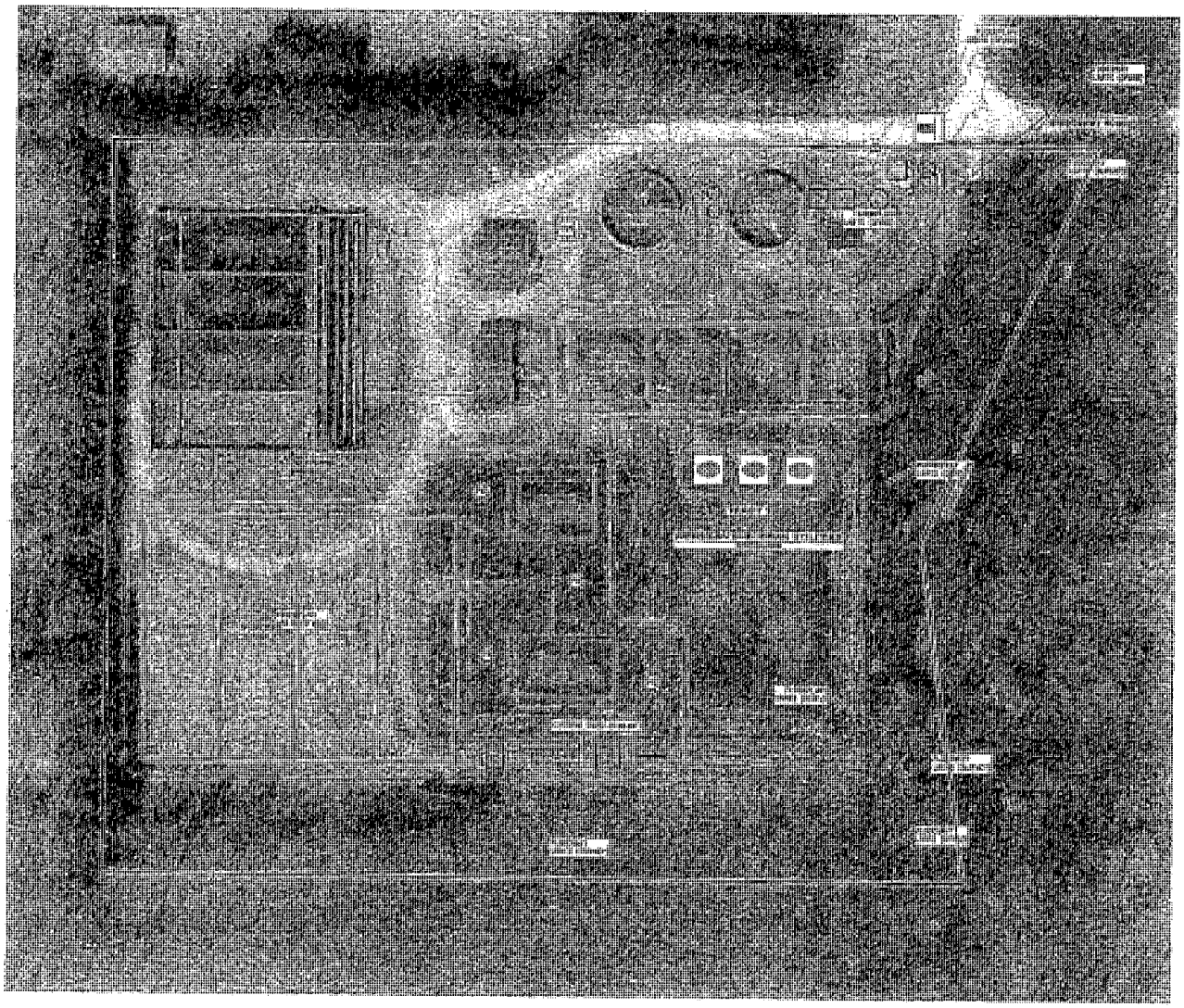
SCALE: AS LISTED	APPROVED BY:	DRAWN BY:
DATE: 02/03/2015	S. L. SERDYNSKI, P.E.	

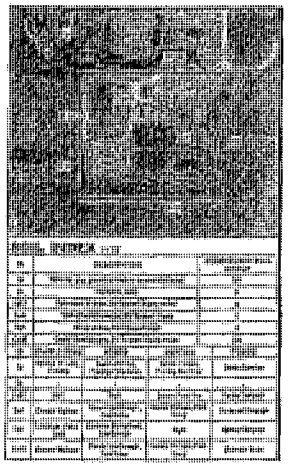
PLANT SITE LAYOUT - PROPOSED

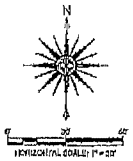
AMERICAN SUBURBAN UTILITIES
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

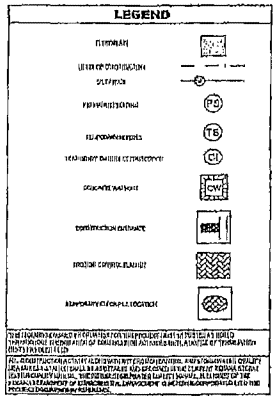
DRAWING NUMBER
1440-03

Cause No. 44676 S1
DUCO DR 18-3
Page 7 of 11









REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, IN 47909-8023
TEL: (317) 790-9273

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

SCALE: AS LISTED	APPROVED BY:	DRAWN BY: MJP
DATE: 08/06/2015	D. J. SEROWKA, P.E.	

SURFACE IMPOUNDMENT CLOSURE LAYOUT

AMERICAN SUBURBAN UTILITIES, INC.
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

DRAWING NUMBER
14CW-4

Cause No. 44676 S1
OUCC DR 18-3
Page 8 of 11

SURFACE IMPOUNDMENT CLOSURE

The following is the project narrative and supporting documents, including the following information for the impoundment closure of American Suburban Utilities, Inc. Carriage Estates Wastewater Treatment Plant located in West Lafayette, Indiana.

1. **Project Location**

   American Suburban Utilities Carriage Estates Wastewater Treatment Plant is located at 4100 Bridgeway Drive in Carriage Estates Subdivision, located in the Southeast Quarter of Section 4, T 23 N, R 5 W, and part of the Northeast Quarter of Section 8, T 23 N, R 5 W, and part of the Northeast Quarter of Section 5, T 23 N, R 5 W, Wabash Township, Tippecanoe County, Indiana. (Refer to Plan Sheet 14-041-01 for project site location data and maps.)

2. **Project Owner**

   American Suburban Utilities, Inc.
   3350 W. 250 N.
   West Lafayette, IN 47906
   TEL:(765) 463-3050
   FAX:(765) 463-3565
   E-mail: asu-inc@hotmail.com

3. **Project Engineer**

   Lakeland InnovaTech
   332 Persimmon Trail
   Lafayette, Indiana 47909-6823
   TEL:(317) 796-5273
   E-mail: aserovka270@earthlink.net

4. **Project Scope of Work**

   The Carriage Estates Wastewater Treatment Plant currently has the following surface impoundments:

   a. One (1) deactivated tertiary polishing lagoon. The polishing lagoon was closed in 2000.

   b. Two (2) active sludge holding lagoons which will be deactivated and removed within the next several years.

   The project will be conducted in two (2) phases. The first phase is to remove the existing tertiary polishing lagoon with the second phase being the removal of the existing sludge holding lagoons.

5. **Deactivated Tertiary Polishing Lagoon Size**

   The following are the dimensions and volume of the existing tertiary polishing lagoon:

Number of Cells:	One (1)
Volume of Cell:	1,640,910.0 gallons (219,373.0 cu.ft.)
Cell Number:	1
Top Length:	250-ft. 0-in.
Top Width:	125-ft. 0-in.
Side Slopes:	3:1
Side Water Depth:	7-ft. 0-in.
Bottom Length:	216-ft. 0-in.
Bottom Width:	100-ft. 0-in.
Mean Length:	250-ft. 0-in.
Mean Width:	121-ft. 0-in.

6. **Tertiary Polishing Lagoon History**

   The tertiary polishing lagoon was constructed in the mid-sixties as required by the Indiana State Department of Health (now IDEM) since the new 350,000.0 GPD wastewater treatment plant was discharging to Indian Creek and therefore had to meet a 10.0 mg/l BOD5 and 10.0 mg/l TSS effluent requirements. In the 1960's if the secondary plant had to meet an effluent limit less than 30.0 mg/l BOD5 and TSS, then the State would require either a tertiary sand filter or a tertiary polishing lagoon. The State has changed its criteria and now accepts that secondary treatment plants can meet 10.0 mg/l BOD5 and 10.0 mg/l TSS effluent limits without tertiary filters or lagoons. Therefore when the Carriage Estates W.W.T.P. was expanded to an average design flow (ADF) of 1.5 MGD in 2000, the tertiary polishing lagoon was deactivated and the effluent from the expanded plant was directly discharged to Indian Creek.

7. **Tertiary Polishing Lagoon Sludge Characteristics**

   The wastewater treated by the Carriage Estates Wastewater Treatment Plant is domestic type from homes, apartments, schools and commercial establishment. There are no industrials in the Carriage Estates service area and therefore the sludge in the tertiary polishing lagoon is domestic without any industrial sludge of any kind.

   The sludge has probably been reduced to a Class A sludge as a result of its long detention time in the lagoon (15+ years) with the yearly growth and decay of vegetation in the lagoon. Therefore what is left is a very rich compost.

   It is estimated that there is approximately 12 inches of composted sludge in the lagoon which results in an approximate total of 21,600.0 cu.ft. (800.0 cu.yd.) of sludge to be removed.

8. **Tertiary Polishing Lagoon Closure Procedure**

   The following steps will be taken to close the existing tertiary polishing lagoon.

   a. American Suburban Utilities, Inc. has the necessary backhoes, excavator, dump trucks and manpower to properly remove and dispose of the sludge in the lagoon. After the lagoon closure permit is received, American Suburban Utilities will mobilize its manpower and equipment to remove the sludge.
   b. The sludge will be removed until its backhoe starts scraping untouched soil, which is usually determined when the soil shows little or no staining from the sludge.

   c. The removed sludge will then be loaded into the Utilities' dump trucks which will take it to a landfill.

   d. The sludge will be taken to:

      Waste Management Inc.
      Liberty Landfill
      6035 State Road 10
      Monticello, Indiana 47960-7448

      The Waste Management Liberty Landfill accepts biohazard waste but prior to accepting such waste, the following tests have to be conducted on the sludge:

      1. PCB Sludge Test

      2. TCLP Metals test for the following metals:
         Ag (Silver)
         As (Arsenic)
         Ba (Barium)
         Cd (Cadmium)
         Cr (Chromium)
         Pb (Lead)
         Se (Selenium)
         Hg (Mercury)

      3. Reactive Sulfide Test

      4. Reactive Cyanide Test

      The sludge will be tested by Element Material Technology located at 9301 Innovation Drive, Suite 116 in Daleville, Indiana 47334.

   e. The tertiary polishing lagoon's inlet pipe from the old chlorine contact will be removed along with the lagoons effluent manhole structure and discharge pipe to Indian Creek. Any other connections or pipes shall be removed prior to filling in the lagoon.

   f. Once the sludge has been removed from the lagoon, IDEM will be contacted to schedule a site inspection of the cleaned lagoon.

   g. When IDEM has given American Suburban Utilities permission to fill in the lagoon, the Utility will fill it with earth obtained from the excavation for the new influent lift station and macerator structures.

   h. The lagoon surface, after being filled in, will be stabilized with permanent seeding within 14 days of the last construction activity.

      Temporary and permanent stabilization plans shall include the following:

      1.) Specifications and application rates for soil amendments and seed mixtures.
      (For additional information and specifications for temporary and permanent stabilization, see Chapter 7 of the Indiana Erosion Control Handbook.)

Seed Species	Rate per Acre (lbs.)	Planting Depth (inches)	Optimum Dates
Wheat or Rye	150	1 – 1 1/2	Sept. 15 – Oct. 30
Spring Oats	100	1	March 1 – April 15
Annual Ryegrass	40	1/4	March 1 – May 1 Aug. 1 – Sept. 1
German Millet	40	1 – 2	May 1 – June 1
Sudangrass	40	1 – 2	May 1 – July 30
Buckwheat	40	1 – 2	April 15 – June 1
Corn (broadcast)	40	1 – 2	May 11 – Aug. 10
Sorghum	40	1 – 2	May 1 – July 15

Table 1: Temporary Seeding Specifications

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Perennial ryegrass – white clover	70 2	5.6 to 7.0
2. Perennial ryegrass – tall fescue	70 50	5.6 to 7.0
3. Tall Fescue – white clover	70 2	5.5 to 7.5

Table 2a: Permanent Seeding Recommendations – Open low-maintenance areas (remaining idle more than six months)

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Smooth brome grass – red clover	35 20	6.5 to 7.0
2. Tall Fescue – white clover	50 2	5.5 to 7.5
3. Tall Fescue – red clover	50 20	5.5 to 7.5
4. Orchard Grass – red clover – white clover	30 20 2	6.5 to 7.0

Table 2b: Permanent Seeding Recommendations – Steep banks and cuts, low-maintenance areas (not mowed)

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Bluegrass	10	5.5 to 7.0
2. Perennial ryegrass – turf type	60 90	5.1 to 7.0
3. Tall Fescue (turf type) – bluegrass	170 30	5.5 to 7.5

Table 2c: Permanent Seeding Recommendations – Lawns and high-maintenance areas

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Perennial ryegrass – white clover	150 2	5.5 to 7.0
2. Kentucky bluegrass – smooth brome grass – switch grass – timothy – perennial ryegrass – white clover	20 10 3 4 10 2	5.5 to 7.5
3. Tall Fescue – white clover	150 2	5.0 to 7.5
4. Tall Fescue – perennial ryegrass – Kentucky bluegrass	150 20 20	5.0 to 7.5

Table 2d: Permanent Seeding Recommendations – Channels and areas of concentrated flow

      2.) The type and application rate for anchored mulch.
      (For additional information and specifications for mulching, see pages 55-57 of Chapter 7 of the Indiana Erosion Control Handbook.)

Material	Rate per Acre (tons)	Comments
Straw or hay	2	Should be dry, free of undesirable seeds. Spread by hand or machine. Must be crimped or anchored.
Wood fiber or cellulose	1	Apply with a hydraulic mulch machine and use with tacking agent.

Table 3: Application Rate

Anchoring Method	How to Apply
Mulch anchoring tool or farm disk (dull, serrated and blades set straight)	Crimp or punch the straw or hay two to four inches into the soil. Operate machinery on the contour of the slope.
Cleating with dozer tracks	Operate dozer up and down slope to prevent formation of rills by dozer cleats.
Wood hydro mulch fibers	Apply according to manufacturer's recommendations.
Synthetic tackifiers, binders or soil stabilizers	Apply according to manufacturer's recommendations.
Netting (synthetic or biodegradable material)	Install netting immediately after applying mulch. Anchor netting with staples. Edges of netting strips should overlap with each upslope strip overlapping four to six inches over the adjacent down-slope strip. Best suited to slope applications. In most instances, installation details are site specific, so manufacturer's recommendations should be followed.

Table 4: Anchoring Method

9. **Active Sludge Holding Lagoons (Phase 2)**

   There are two (2) active sludge holding lagoons each approximately the same size and referred to as Sludge Holding Lagoon #1 and Sludge Holding Tank #2. These lagoons will remain active for several years and will be removed as required to continue construction of the Carriage Estates Wastewater Treatment Plant Expansion from 1.5 MGD to 4.0 MGD.

10. **Sludge Holding Lagoons Sizes**

    a. Sludge Holding Lagoon Number 1

Number of Cells:	One (1)
Volume of Cell:	363,112.0 gallons (48,034.7 cu.ft.)
Top Length:	135-ft. 0-in.
Top Width:	79-ft. 0-in.
Side Slopes:	3:1
Side Water Depth:	7-ft. 0-in.
Bottom Length:	90-ft. 0-in.
Bottom Width:	37-ft. 0-in.
Mean Length:	117-ft. 0-in.
Mean Width:	58-ft. 0-in.

    b. Sludge Holding Lagoon Number 2

Number of Cells:	One (1)
Volume of Cell:	399,709.0 gallons (53,449.1 cu.ft.)
Top Length:	130-ft. 0-in.
Top Width:	85-ft. 0-in.
Side Slopes:	3:1
Side Water Depth:	7-ft. 0-in.
Bottom Length:	95-ft. 0-in.
Bottom Width:	43-ft. 0-in.
Mean Length:	117-ft. 0-in.
Mean Width:	64-ft. 0-in.

11. **Sludge Holding Lagoons History**

    The sludge holding lagoons were constructed in the mid 1960's as part of the original plant construction and have remained in use ever since.

12. **Sludge Holding Lagoon Sludge Characteristics**

    The wastewater treated by the Carriage Estates Wastewater Treatment Plant is domestic type from homes, apartments, schools and commercial establishment. There are no industrials in the Carriage Estates service area and therefore the sludge in the tertiary polishing lagoon is domestic without any industrial sludge of any kind.

    The waste sludge from these lagoons is periodically removed and applied to farm land by Merritt Brothers, Kokomo, Indiana under American Suburban Utilities, Inc. Land Application Permit Number IN LA 000070. As part of the Land Application Permit, organic and metal levels have to be determined for the waste sludge prior to land application. Merritt Brothers has the sludge tested by Element Materials Technology of Fort Wayne, Indiana and the following are the results from the last time sludge was removed and land applied.

element

REPORT OF ANALYSIS

[illegible]

TABLE 4
ORGANIC LOADINGS

element

REPORT OF ANALYSIS

[illegible]

TABLE 5
METAL LOADINGS

13. **Sludge Holding Lagoon Closure Procedure**

    The following steps will be taken to close the sludge holding lagoons.

    a. American Suburban Utilities, Inc. will use the same equipment and manpower used to close the tertiary polishing lagoon to close the sludge holding lagoons.

    b. American Suburban Utilities, Inc. will have Merritt Brothers remove as much of the wet sludge as possible using their pumping capabilities. The remaining 6" to 12" sludge remaining will be removed by American Suburban Utilities using its excavator.

    c. The sludge will be removed until the backhoe starts scraping untouched soil, which is usually determined when the soil shows little or no staining from the sludge.

    d. The removed sludge will then be loaded into the Utilities' dump trucks which will take it to a landfill.

    e. The sludge will be taken to:

       Waste Management Inc.
       Liberty Landfill
       6035 State Road 10
       Monticello, Indiana 47960-7448

       The Waste Management Liberty Landfill accepts biohazard waste but prior to accepting such waste, the following tests have to be conducted on the sludge:

       1. PCB Sludge Test

       2. TCLP Metals test for the following metals:
          Ag (Silver)
          As (Arsenic)
          Ba (Barium)
          Cd (Cadmium)
          Cr (Chromium)
          Pb (Lead)
          Se (Selenium)
          Hg (Mercury)

       3. Reactive Sulfide Test

       4. Reactive Cyanide Test

       The sludge will be tested by Element Material Technology located at 9301 Innovation Drive, Suite 116 in Daleville, Indiana 47334.

    f. The sludge holding lagoons inlet pipes will be removed along with the lagoons' discharge pipes. Any other connections or pipes shall be removed prior to filling in the lagoon.

    g. Once the sludge has been removed from the lagoon, IDEM will be contacted to schedule a site inspection of the cleaned lagoon.

    h. When IDEM has given American Suburban Utilities permission to fill in the lagoons, the Utility will fill them with earth obtained from the excavation for the new sludge holding tanks and CBBR tanks.

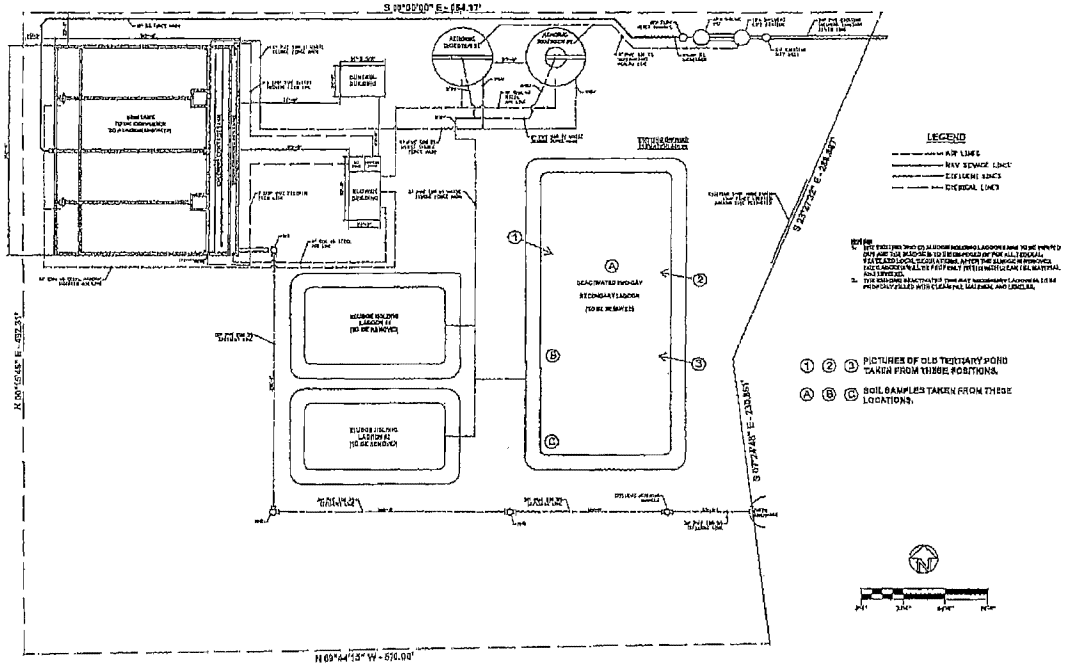
    i. The lagoon surface, after being filled in, will be stabilized with permanent seeding within 14 days of the last construction activity in the same manner as listed above for the Tertiary Polishing Lagoon in Part 8, Item h.

REVISIONS

REV	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, IN 47909-6823
TEL: (317) 796-5273

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES		
SCALE: AS LISTED	APPROVED BY:	DRAWN BY: H.P.
DATE: 02/02/2015	G. J. SEROVKA, P.E.	
SURFACE IMPOUNDMENT CLOSURE SPECIFICATIONS		
AMERICAN SUBURBAN UTILITIES, INC. WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA		DRAWING NUMBER 14-041-05



LEGEND

- AIR LINES
- RAW SEWAGE LINES
- EFFLUENT LINES
- CHEMICAL LINES

NOTES

1. SITE EXCLUSIVE OF LAGOONS #1 AND #2 TO BE GRADED AND SEEDED AS PER ALL DISTURBED AREAS.
2. THE EXISTING DEACTIVATED SECONDARY LAGOON #2 IS TO BE PARTIALLY FILLED WITH CLEAN FILL MATERIAL AND LEVELED.

① ② ③ PICTURES OF OLD TERTIARY POND TAKEN FROM THESE POSITIONS.

Ⓐ Ⓑ Ⓒ SOIL SAMPLES TAKEN FROM THESE LOCATIONS.

PLANT SITE LAYOUT - EXISTING
SCALE: NONE

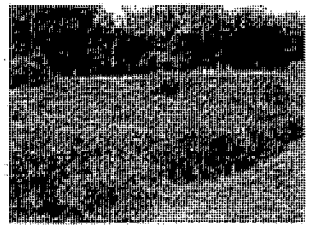


PHOTO 1
Carriage Estates WWTP
West Lafayette, Indiana
American Suburban Utilities, Inc.

Photo 1 shows the existing deactivated tertiary pond. Please note that there is no liquid sludge but only vegetation growing on top of the unexposed sludge.

PHOTO 2
Carriage Estates WWTP
West Lafayette, Indiana
American Suburban Utilities, Inc.

Photo 2 shows the existing deactivated tertiary pond. Please note that there is no liquid sludge but only vegetation growing on top of the unexposed sludge.

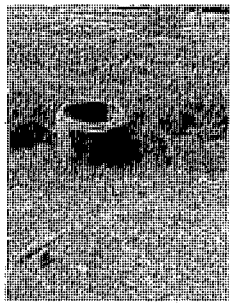


PHOTO 3
Carriage Estates WWTP
West Lafayette, Indiana
American Suburban Utilities, Inc.

Photo 3 shows the existing deactivated tertiary pond. Please note that there is no liquid sludge but only vegetation growing on top of the unexposed sludge.

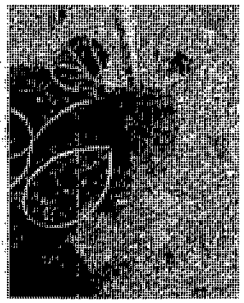


PHOTO A
Carriage Estates WWTP
West Lafayette, Indiana
American Suburban Utilities, Inc.

Soil sample showing approximately 3-in. to 6-in. of unexposed sludge on top of the soil bottom

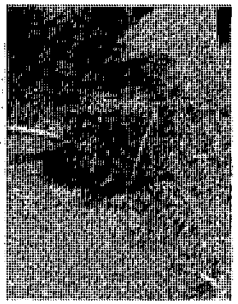


PHOTO B
Carriage Estates WWTP
West Lafayette, Indiana
American Suburban Utilities, Inc.

Soil sample showing approximately 1-in. to 2-in. of unexposed sludge on top of the soil bottom

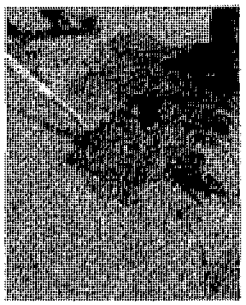


PHOTO C
Carriage Estates WWTP
West Lafayette, Indiana
American Suburban Utilities, Inc.

Soil sample showing exposed sandy 1-in. to 2-in. of composted sludge on top of the pond bottom.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, INDIANA 47909-8823
TEL: (317) 706-5273

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

SCALE: AS LISTED | APPROVED BY: C. J. SERDYKA, P.E. | DRAWN BY: G.L.P. | DATE: 02/03/2015

EXISTING TERTIARY POLISHING LAGOON DETAILS

AMERICAN SUBURBAN UTILITIES
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

DRAWING NUMBER (D) 44241-08

Cause No. 44676 S1
DR 18-3
10 of 11

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

November 25, 2020

VIA EMAIL

American Suburban Utilities, Inc.
Attn: Scott L. Lods
President
3350 West 250 North
West Lafayette, Indiana 47909

Dear Mr. Lods:

Re: Final Closure Certification
Carriage Estates Wastewater Treatment
Plant Surface Impoundment
SW Program ID 79-UP-04
Tippecanoe County

We reviewed the Sludge Holding Pond No. 1 Closure Report dated June 26, 2020 (VFC #83003937), notifying us of the completion of closure of the American Suburban Utilities, Inc. Carriage Estates Wastewater Treatment Plant lagoon located at 4100 Bridgeway Drive, West Lafayette. The report certifies that all sludge and liquid were removed from the lagoon according to the *Surface Impoundment Closure Plan* dated February 6, 2015 (VFC #80010251), as approved in the IDEM Letter dated March 3, 2015 (VFC #80013717). Two other surface impoundments were certified closed under the separate closure certification approvals on May 4, 2016 (VFC #80301379) and June 12, 2018 (VFC #82559298). This final closure certification approval completes clean closure of all three impoundments at this facility.

The report included all necessary information and is adequate to confirm clean closure of the lagoon.

If you have any questions, please contact Anna Mishel, the Permit Manager assigned this facility, by dialing (317) 233-6725 or by e-mail at Amishel@idem.IN.gov.

Sincerely,

Amy McClure

Amy McClure, Section Chief
Solid Waste Permits Section
Office of Land Quality

Lakeland InnovaTech

Where Engineering Begins and Service Never Ends

DATE: October 23, 2015

TO: Indiana Department of Environmental Management
100 N. Senate Avenue
MC 65-4J IGCN 1101
Indianapolis, IN 46204

ATTENTION: Alicia Brown
Environmental Manager
Solid Waste Permits Section

SUBJECT: Carriage Estates Wastewater Treatment Plant
Surface Impoundment Closure
West Lafayette, Tippecanoe County, Indiana

PROJECT NO.: 14-041
Please refer to this number when corresponding.

Dear Ms. Brown:

We are pleased to present for your use the modified plans for the closure of the Carriage Estates Wastewater Treatment Plant's impoundments. There were a total of three (3) separate impoundment closures which were approved in IDEM's Closure Plan Approval No. 79-UP-04 dated March 3, 2015 and they were as follows:

a. Deactivated Tertiary Polishing Lagoon
b. Active Sludge Holding Lagoon #1
c. Active Sludge Holding Lagoon #2

The Carriage Estates Wastewater Treatment Plant receives and treats domestic sewage from homes, apartments, schools and commercial establishment in Wabash Township, but does not receive any industrial wastes. Therefore, the sludge held in the impoundments does not contain any metals or other toxic substances.

The impoundments are being removed in two phases. The first phase is to remove the deactivated tertiary polishing lagoon with the two sludge holding lagoons being removed at a future date.

We are modifying the closure plans to permit either disposal of the sludge in an approved landfill or to be land applied on farm ground approved in American Suburban Utilities Land Application Permit No. IN LA 000078. (Refer to Note 13 "Sludge Holding Lagoon Closure Procedure", Item e on Drawing No. 14-041-05.)

332 Persimmon Trail ♦ Lafayette, Indiana 47909-6823
TEL: (317) 796-5273 ♦ E-mail: eserowka270@earthlink.net

Lakeland InnovaTech

Where Engineering Begins and Service Never Ends

Naturally all other issues covered by the closure plan approval will be addressed and therefore we hope the attached modified plans meet with your approval and will allow you to issue a modified permit allowing for the alternate disposal of the sludge on permitted land.

Thank you and do not hesitate to contact us if we can be of any additional assistance.

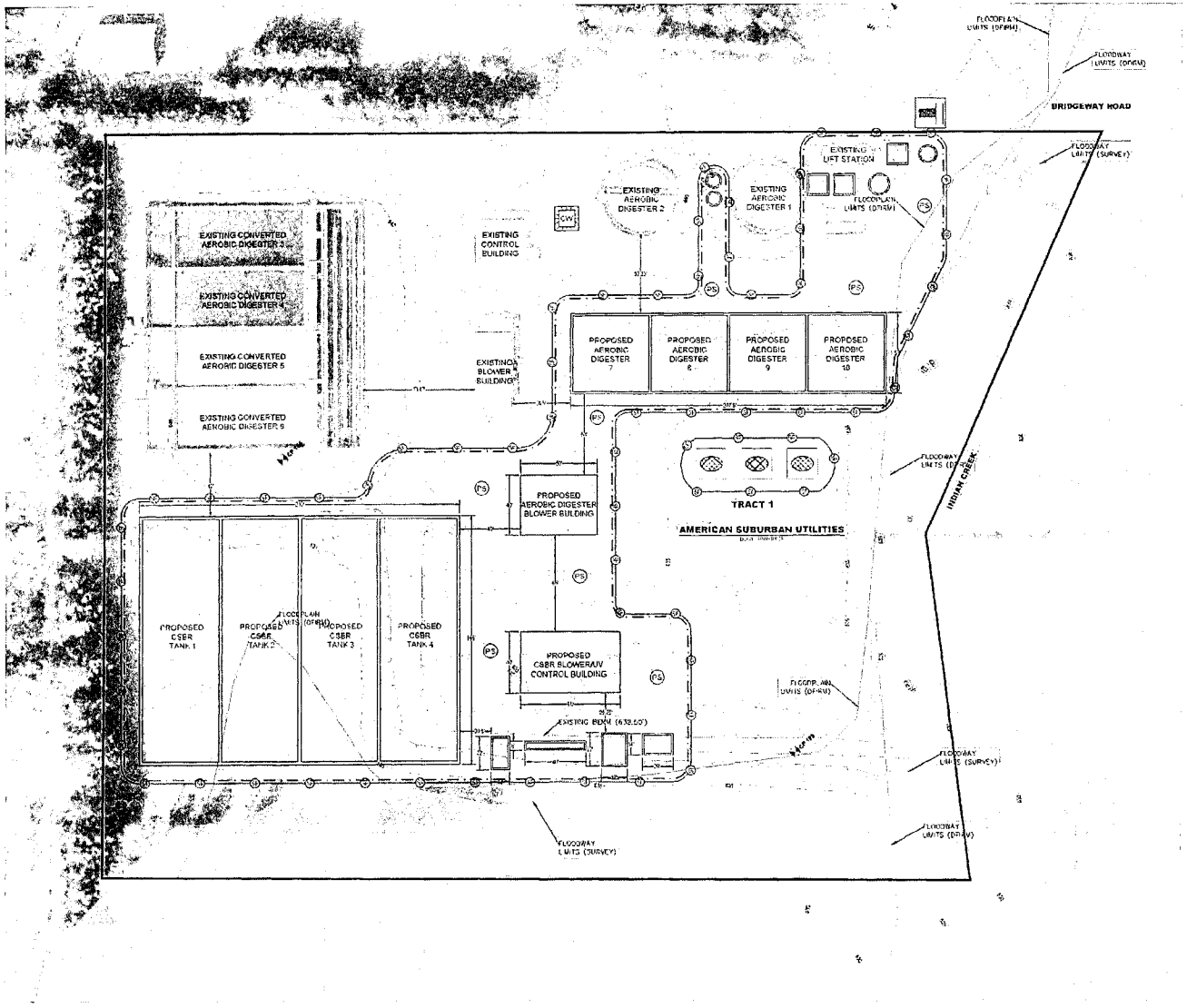
Very truly yours,

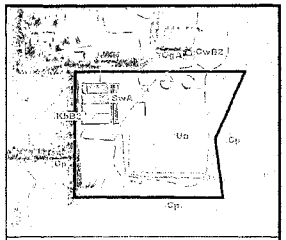
Lakeland InnovaTech

Edward J. Serowka, P.E.
President

EJS/mjp
Encls.

CC: Scott Lods
American Suburban Utilities, Inc.





SOIL INDEX

ID	DESCRIPTION	HYDROLOGIC SOIL GROUP
Ud		
Cp		
MkE2		
SwA		
OgA		
DuB2		

ID	DWELLINGS	ROADS	SEPTICS	PONDS
Ud				
Cp				
MkE2				
SwA				
OgA				
DuB2				

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OCT 27 2015

LEGEND

FLOODPLAIN	
LIMITS OF CONSTRUCTION	
WELL FENCE	
PERIMETER SEEDING	PS
TEMPORARY SEEDING	TS
EXISTING CONCRETE PAVEMENT	CP
CONCRETE WASHOUT	CW
CONSTRUCTION ENTRANCE	CE
EROSION CONTROL BLANKET	
TEMPORARY STONE FILLED CHUTE	

THE NOAA ATLAS 14 PRECIPITATION FOR THIS PROJECT IS AS FOLLOWS: 2.5 INCHES OVER THE DURATION OF THE EVENT (2.5" RECEIVED FROM NOAA ATLAS 14 RANGE OF DETERMINATION DURING RECEIVED)

ALL CONSTRUCTION ACTIVITY ACTS WITH ANY EROSION CONTROL AND STORMWATER QUALITY MEASURES INSTALLED WILL BE ACTED ON AS SOON AS THE 2.5 INCH RAINFALL EVENT WATER QUALITY VOLUME. THE INDIANA STORMWATER QUALITY MANUAL PUBLISHED BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT IS CURRENTLY INCORPORATED INTO THE PROJECT DOCUMENTS BY REFERENCE.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, IN 47909-6823
TEL: (317) 796-5273

EDWARD J. SERDVKA REGISTERED No. 15550 STATE OF INDIANA PROFESSIONAL ENGINEER

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

SCALE: AS LISTED | APPROVED BY: E. J. SERDVKA, P.E. | DRAWN BY: M.J.P.

DATE: 02/02/2015

SURFACE IMPOUNDMENT CLOSURE LAYOUT

AMERICAN SUBRAN UTILITIES, INC.
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

DRAWING NUMBER 14-041-04

SURFACE IMPOUNDMENT CLOSURE

The following is the project narrative and supporting documents, including the following information for the impoundment closures at American Suburban Utilities, Inc. Carriage Estates Wastewater Treatment Plant located in West Lafayette, Indiana.

1. **Project Location**

   American Suburban Utilities Carriage Estates Wastewater Treatment Plant is located at 4100 Bridgeway Drive in Carriage Estates Subdivision, located in the Southeast Quarter of Section 4, T 23 N, R 5 W, and part of the Northeast Quarter of Section 9, T 23 N, R 5 W, and part of the Northeast Quarter of Section 9, T 23 N, R 5 W, Wabash Township, Tippecanoe County, Indiana. (Refer to Plan Sheet 14-041-01 for project site location data and maps.)

2. **Project Owner**

   American Suburban Utilities, Inc.
   3350 W. 250 N.
   West Lafayette, IN 47906
   TEL:(765) 463-3656
   FAX:(765) 463-3555
   E-mail: asu-inc@hotmail.com

3. **Project Engineer**

   Lakeland InnovaTech
   332 Persimmon Trail
   Lafayette, Indiana 47909-6823
   TEL:(317) 796-5273
   E-mail: eserowka270@earthlink.net

4. **Project Scope of Work**

   The Carriage Estates Wastewater Treatment Plant currently has the following surface impoundments:

   a. One (1) deactivated tertiary polishing lagoon. The polishing lagoon was closed in 2000.

   b. Two (2) active sludge holding lagoons which will be deactivated and removed within the next several years.

   The project will be conducted in two (2) phases. The first phase is to remove the existing tertiary polishing lagoon with the second phase being the removal of the existing sludge holding lagoons.

5. **Deactivated Tertiary Polishing Lagoon Size**

   The following are the dimensions and volume of the existing tertiary polishing lagoon:

Number of Cells:	One (1)
Volume of Cell:	1,640,910.0 gallons (219,373.0 cu.ft.)
Cell Number:	1
Top Length:	238-ft. 0-in.
Top Width:	125-ft. 0-in.
Side Slopes:	3:1
Side Water Depth:	7-ft. 0-in.
Bottom Length:	216-ft. 0-in.
Bottom Width:	100-ft. 0-in.
Mean Length:	259-ft. 0-in.
Mean Width:	121-ft. 0-in.

6. **Tertiary Polishing Lagoon History**

   The tertiary polishing lagoon was constructed in the mid-sixties as required by the Indiana State Department of Health (now IDEM) since the new 350,000.0 GPD wastewater treatment plant was discharging to Indian Creek and therefore had to meet a 10.0 mg/l BOD5 and 10.0 mg/l TSS effluent requirements. In the 1960's if the secondary plant had to meet an effluent limit less than 30.0 mg/l BOD5 and TSS, then the State would require either a tertiary sand filter or a tertiary polishing lagoon. The State has changed its criteria and now accepts that secondary treatment plants can meet 10.0 mg/l BOD5 and 10.0 mg/l TSS effluent limits without tertiary filters or lagoons. Therefore when the Carriage Estates W.W.T.P. was expanded to an average design flow (ADF) of 1.5 MGD in 2000, the tertiary polishing lagoon was deactivated and the effluent from the expanded plant was directly discharged to Indian Creek.

7. **Tertiary Polishing Lagoon Sludge Characteristics**

   The wastewater treated by the Carriage Estates Wastewater Treatment Plant is domestic type from homes, apartments, schools and commercial establishment. There are no industrials in the Carriage Estates service area and therefore the sludge in the tertiary polishing lagoon is domestic without any industrial sludge of any kind.

   The sludge has probably been reduced to a Class A sludge as a result of its long detention time in the lagoon (15+ years) with the yearly growth and decay of vegetation in the lagoon. Therefore what is left is a very rich compost.

   It is estimated that there is approximately 12 inches of composted sludge in the lagoon which results in an approximate total of 21,600.0 cu.ft. (800.0 cu.yd.) of sludge to be removed.

8. **Tertiary Polishing Lagoon Closure Procedure**

   The following steps will be taken to close the existing tertiary polishing lagoon.

   a. American Suburban Utilities, Inc. has the necessary backhoes, excavator, dump trucks and manpower to properly remove and dispose of the sludge in the lagoon. After the lagoon closure permit is received, American Suburban Utilities will mobilize its manpower and equipment to remove the sludge.
   b. The sludge will be removed until the backhoe starts scraping untouched soil, which is usually determined when the soil shows little or no staining from the sludge.

   c. The removed sludge will then be loaded into the Utilities' dump trucks which will take it to a landfill.

   d. The sludge will be taken to:

      Waste Management Inc.
      Liberty Landfill
      8635 State Road 16
      Monticello, Indiana 47960-7448

      The Waste Management Liberty Landfill accepts biohazard waste but prior to accepting such waste, the following tests have to be conducted on the sludge:

      1. PCB Sludge Test

      2. TCLP Metals test for the following metals:
         Ag (Silver)
         As (Arsenic)
         Ba (Barium)
         Cd (Cadmium)
         Cr (Chromium)
         Pb (Lead)
         Se (Selenium)
         Hg (Mercury)

      3. Reactive Sulfide Test

      4. Reactive Cyanide Test

      The sludge will be tested by Element Material Technology located at 9301 Innovation Drive, Suite 115 in Daleville, Indiana 47334.

   e. The tertiary polishing lagoon's inlet pipe from the old chlorine contact will be removed along with the lagoons effluent manhole structure and discharge pipe to Indian Creek. Any other connections or pipes shall be removed prior to filling in the lagoon.

   f. Once the sludge has been removed from the lagoon, IDEM will be contacted to schedule a site inspection of the cleaned lagoon.

   g. When IDEM has given American Suburban Utilities permission to fill in the lagoon, the Utility will fill it with earth obtained from the excavation for the new influent lift station and macerator structures.

   h. The lagoon surface, after being filled in, will be stabilized with permanent seeding within 14 days of the last construction activity.

      Temporary and permanent stabilization plans shall include the following:

      1.) Specifications and application rates for soil amendments and seed mixtures.
      (For additional information and specifications for temporary and permanent stabilization, see Chapter 7 of the Indiana Erosion Control Handbook.)

Seed Species	Rate per Acre (lbs.)	Planting Depth (Inches)	Optimum Dates
Wheat or Rye	150	1 – 1 1/2	Sept. 15 – Oct. 30
Spring Oats	100	1	March 1 – April 15
Annual Ryegrass	40	1/4	March 1 – May 1 Aug. 1 – Sept. 1
German Millet	40	1 – 2	May 1 – June 1
Sundangrass	40	1 – 2	May 1 – July 30
Buckwheat	40	1 – 2	April 15 – June 1
Corn (broadcast)	40	1 – 2	May 11 – Aug. 10
Sorghum	40	1 – 2	May 1 – July 15

Table 1: Temporary Seeding Specifications

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Perennial ryegrass – white clover	70 2	5.6 to 7.0
2. Perennial ryegrass – tall fescue	70 50	5.6 to 7.0
3. Tall Fescue – white clover	70 2	5.5 to 7.5

Table 2a: Permanent Seeding Recommendations – Open low-maintenance areas (remaining idle more than six months)

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Smooth, brome grass – red clover	35 20	5.5 to 7.0
2. Tall Fescue – white clover	50 2	5.6 to 7.5
3. Tall Fescue – red clover	50 20	5.5 to 7.5
4. Orchard Grass – red clover – white clover	30 20 2	5.5 to 7.0

Table 2b: Permanent Seeding Recommendations – Steep banks and cuts, low-maintenance areas (not mowed)

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Bluegrass	10	5.5 to 7.0
2. Perennial ryegrass – turf type	60 90	5.6 to 7.0
3. Tall Fescue (turf type) – bluegrass	170 30	5.5 to 7.5

Table 2c: Permanent Seeding Recommendations – Lawns and high-maintenance areas

Seed Mixtures	Rate per Acre Pure Live Seed (lbs.)	Optimum Soil pH
1. Perennial ryegrass – white clover	150 2	5.5 to 7.0
2. Kentucky bluegrass – smooth brome grass – switch grass – timothy – perennial ryegrass – white clover	20 10 3 4 10 2	5.5 to 7.5
3. Tall Fescue – white clover	150 2	5.6 to 7.5
4. Tall Fescue – perennial ryegrass – Kentucky bluegrass	150 20 20	5.5 to 7.5

Table 2d: Permanent Seeding Recommendations – Channels and areas of concentrated flow

      2.) The type and application rate for anchored mulch.
      (For additional information and specifications for mulching, see pages 55-57 of Chapter 7 of the Indiana Erosion Control Handbook.)

Material	Rate per Acre (tones)	Comments
Straw or hay	2	Should be dry, free of undesirable seeds. Spread by hand or machine. Must be crimped or anchored.
Wood fiber or cellulose	1	Apply with a hydraulic mulch machine and use with tacking agent.

Table 3: Application Rate

Anchoring Method	How to Apply
Mulch anchoring tool or farm disk (dull, serrated and blades set straight)	Crimp or punch the straw or hat two to four inches into the soil. Operate machinery on the contour of the slope.
Cleating with dozer tracks	Operate dozer up and down slope to prevent formation of rills by dozer cleats.
Wood hydro mulch fibers	Apply according to manufacturer's recommendations
Synthetic tackifiers, binders or soil stabilizers	Apply according to manufacturer's recommendations.
Netting (synthetic or biodegradable material)	Install netting immediately after applying mulch. Anchor netting with staples. Edges of netting strips should overlap with each upslope strip overlapping four to six inches over the adjacent down-slope strip. Best suited to slope applications. In most instances, installation details are site specific, so manufacturer's recommendations should be followed.

Table 4: Anchoring Method

9. **Active Sludge Holding Lagoons (Phase 2)**

   There are two (2) active sludge holding lagoons each approximately the same size and referred to as Sludge Holding Lagoon #1 and Sludge Holding Tank #2. These lagoons will remain active for several years and will be removed as required to continue construction of the Carriage Estates Wastewater Treatment Plant Expansion from 1.5 MGD to 4.0 MGD.

10. **Sludge Holding Lagoons Sizes**

    a. Sludge Holding Lagoon Number 1

Number of Cells:	One (1)
Volume of Cell:	363,012.0 gallons (48,534.7 cu.ft.)
Top Length:	138-ft. 0-in.
Top Width:	79-ft. 0-in.
Side Slopes:	3:1
Side Water Depth:	7-ft. 0-in.
Bottom Length:	96-ft. 0-in.
Bottom Width:	37-ft. 0-in.
Mean Length:	117-ft. 0-in.
Mean Width:	58-ft. 0-in.

    RECEIVED
    OCT 27 2015
    DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
    OFFICE OF LAND QUALITY

    b. Sludge Holding Lagoon Number 2

Number of Cells:	One (1)
Volume of Cell:	399,769.0 gallons (53,449.1 cu.ft.)
Top Length:	138-ft. 0-in.
Top Width:	85-ft. 0-in.
Side Slopes:	3:1
Side Water Depth:	7-ft. 0-in.
Bottom Length:	96-ft. 0-in.
Bottom Width:	43-ft. 0-in.
Mean Length:	117-ft. 0-in.
Mean Width:	64-ft. 0-in.

11. **Sludge Holding Lagoons History**

    The sludge holding lagoons were constructed in the mid 1960's as part of the original plant construction and have remained in use ever since.

12. **Sludge Holding Lagoon Sludge Characteristics**

    The wastewater treated by the Carriage Estates Wastewater Treatment Plant is domestic type from homes, apartments, schools and commercial establishment. There are no industrials in the Carriage Estates service area and therefore the sludge in the tertiary polishing lagoon is domestic without any industrial sludge of any kind.

    The waste sludge from these lagoons is periodically removed and applied to farm land by Merrill Brothers, Kokomo, Indiana under American Suburban Utilities, Inc. Land Application Permit Number IN LA 000078. As part of the Land Application Permit, organic and metal levels have to be determined for the waste sludge prior to land application. Merrill Brothers has the sludge tested by Element Materials Technology of Fort Wayne, Indiana and the following are the results from the last time sludge was removed and land applied.

element
Element Materials Technology – Fort Wayne
2121 E. Washington Blvd.
Fort Wayne, IN 46803

REPORT OF ANALYSIS

Lab Number: [illegible]
Client Sample ID: American Suburban - Merrell Brothers
Date Sampled: [illegible]
Date Received: [illegible]
Date Reported: [illegible]

Parameter	Wet Basis Result	Wet Basis Unit	Wet Basis MDL	Dry Basis Result	Dry Basis Unit	Table [illegible] mg/kg	Table [illegible] mg/kg	Loading Rate Lbs/Wet Ton	Loading Rate Lbs/Dry Ton	Analyst	Date Analyzed	Method Reference
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	%			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]			%					[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]			%					[illegible]	[illegible]	[illegible]
Total PAN* - Aerobic Digestion - Anaerobic Digestion	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	[illegible] [illegible]	[illegible]	[illegible]	[illegible]

[illegible footnotes]

TABLE 4
ORGANIC LOADINGS

element
Element Materials Technology – Fort Wayne
2121 E. Washington Blvd.
Fort Wayne, IN 46803

REPORT OF ANALYSIS

Lab Number: [illegible]
Client Sample ID: American Suburban - Merrell Bros
Date Sampled: [illegible]
Date Received: [illegible]
Date Reported: [illegible]

Parameter	Wet Basis Result	Wet Basis Unit	Wet Basis MDL	Dry Basis Result	Dry Basis Unit	Table [illegible] mg/kg	Table [illegible] mg/kg	Loading Rate Lbs/Wet Ton	Loading Rate Lbs/Dry Ton	Analyst	Date Analyzed	Method Reference
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]			%					[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]			%					[illegible]	[illegible]	[illegible]
Total PAN* - Aerobic Digestion - Anaerobic Digestion	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --		[illegible]	[illegible]	[illegible]

[illegible footnotes]

TABLE 5
METAL LOADINGS

13. **Sludge Holding Lagoon Closure Procedure**

    The following steps will be taken to close the sludge holding lagoons.

    a. American Suburban Utilities, Inc. will use the same equipment and manpower used to close the tertiary polishing lagoon to close the sludge holding lagoons.

    b. American Suburban Utilities, Inc. will have Merrill Brothers remove as much of the wet sludge as possible using their pumping capabilities. The remaining 0" to 12" sludge remaining will be removed by American Suburban Utilities using its excavator.

    c. The sludge will be removed until the backhoe starts scraping untouched soil, which is usually determined when the soil shows little or no staining from the sludge.

    d. The removed sludge will then be loaded into the Utilities' dump trucks which will take it to a landfill.

    e. The sludge will be taken to either::

       1. Waste Management Inc.
          Liberty Landfill
          8635 State Road 16
          Monticello, Indiana 47960-7448

          NOTE: The Waste Management Liberty Landfill accepts biohazard waste but prior to accepting such waste, the following tests have to be conducted on the sludge:

          1) PCB Sludge Test

          2) TCLP Metals test for the following metals:
             Ag (Silver)
             As (Arsenic)
             Ba (Barium)
             Cd (Cadmium)
             Cr (Chromium)
             Pb (Lead)
             Se (Selenium)
             Hg (Mercury)

          3) Reactive Sulfide Test

          4) Reactive Cyanide Test

          The sludge will be tested by Element Material Technology located at 9301 Innovation Drive, Suite 115 in Daleville, Indiana 47334.

       2. One of American Suburban Permitted Land Application Sites listed in Hybrid Biosolids Land Application Permit No. IN LA 000078 located in Tippecanoe County, Indiana.

          NOTE: The sludge will be land applied in accordance with Land Application Permit No. IN LA 000078 and the sludge will be tested by Element Material Technology located at 2121 E. Washington Blvd., Fort Wayne, Indiana 46803.

    f. The sludge holding lagoons inlet pipes will be removed along with the lagoons' discharge pipes. Any other connections or pipes shall be removed prior to filling in the lagoon.

    g. Once the sludge has been removed from the lagoon, IDEM will be contacted to schedule a site inspection of the cleaned lagoon.

    h. When IDEM has given American Suburban Utilities permission to fill in the lagoons, the Utility will fill them with earth obtained from the excavation for the new sludge holding tanks and CSBR tanks.

    i. The lagoon surface, after being filled in, will be stabilized with permanent seeding within 14 days of the last construction activity in the same manner as listed above for the Tertiary Polishing Lagoon in Part 8, item h.

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
1	ADD LAND APPLICATION AS A SECOND OPTION FOR SLUDGE DISPOSAL	10/23/15	EJS

Lakeland InnovaTech
332 PERSIMMON TRAIL
LAFAYETTE, IN 47909-6823
TEL: (317) 796-5273

EDWARD J. SEROWKA REGISTERED No. 15550 STATE OF INDIANA PROFESSIONAL ENGINEER

CARRIAGE ESTATES W.W.T.P. LAGOON CLOSURES

SCALE: AS LISTED	APPROVED BY:	DRAWN BY: M.J.P.
DATE: 02/02/2015	E. J. SEROWKA, P.E.	

SURFACE IMPOUNDMENT CLOSURE SPECIFICATIONS

AMERICAN SURBAN UTILITIES, INC.
WEST LAFAYETTE, TIPPECANOE COUNTY, INDIANA

DRAWING NUMBER 14-041-05