

THE INDIANA Digester

WATER ENVIRONMENT ASSOCIATION

Volume 6, No. 2 • Summer 2011

Plant Profile:



West Central Conservancy District

[INSIDE]

- SIOA DEFENDS THEIR IWEA WASTEWATER CHALLENGE TITLE
- Legal Corner
- Committee News
- and more...

THE OFFICIAL PUBLICATION OF THE INDIANA WATER ENVIRONMENT ASSOCIATION



WCCD Plant aerial photo



1999 Plant



Location of Avon Indiana

PLANT PROFILE: West Central Conservancy District

Who Are We?

West Central Conservancy District (WCCD) was formed in 1992 and is located in Hendricks County, Indiana. The District currently serves approximately 8,000 customers. The District was created to provide sanitary sewer service to the unincorporated community of Avon, Indiana in Hendricks County.

WCCD currently operates a Class IV 5.0 MGD, extended aeration wastewater treatment plant. Raw sewage is pumped to the plant from several remote pump stations and one on-site pump station and flows through the headwork's structure consisting of a Lakeside Fine Screen. After the screening process the flow distribution box diverts flow to two separate parallel treatment trains. The east train consists of a single Lakeside Oxidation Ditch rated for 1.5 MGD and two secondary clarifiers each rated for 0.75 MGD. The west train consists of a four-cell, 3.5 MGD Aqua Aerobics sequential batch reactor (SBR). The flow from each treatment train passes through separate ultraviolet light (UV) disinfection systems from Trojan Technologies. The plant effluent recombines prior to re-aeration and discharge to White Lick

Creek. The sludge from both treatment trains is aerobically digested with coarse bubble diffusion, and then dewatered with polymer addition and two Flottweg centrifuges. The dewatered sludge is hauled to a landfill by Best Way Disposal.

The collection systems is comprised of 100% separate sanitary sewers by design with no overflow or bypass points, and consists of 3,042 manholes, 43 lift stations and over 717,113 feet, or 135.8 miles, of sewer lines. District personnel inspect and check all 43 lift stations twice a week. The District also has every station equipped with a telemetry alarm system that automatically calls out the on-call operator if alarms occur. The District performs all the cleaning of the 3,042 man holes and sewer lines, following a cleaning and televising schedule for all 135.8 miles of sewer line each year.

History of the District

The West Central Conservancy District began as an end result of efforts to resolve sewer problems facing the citizens of the area with Avon Utilities, Inc., which was unable to meet Indiana Department of Environmental Management requirements for its wastewater treatment plant operations during the mid 1980's.

The West Central Concerned Citizens, Incorporated (WCCCI) was formed in late 1990 by developers in the area to run sewer lines from their developments to the Avon Utilities plant at their own costs to ensure the development of their

properties, then donate the lines to the proposed District at no cost and assign all rights it acquired by purchasing the Avon Utilities, Inc. to a newly formed District. On February 28, 1992, the West Central Conservancy District was formed by order of the Hendricks County Circuit Court. The Court further directed that the District would be divided into five geographic areas with each area represented by a Director.

The District has effectively kept pace with the exceptional growth within the geographic area. The District started with less than 100 customers and rapidly increased to approximately 2,000 customers at the end of 1999 to the current 8,000 customers in 2011. This base includes residential users, approximately 119 commercial users and 1 industrial user. The plant itself was expanded from a 500,000 gpd operation to a 900,000 gpd operation in 1995, and again expanded in 1999 to a 2.4 MGD plant capacity. The most recent expansion in 2005 increased capacity to 5.0 MGD and included an Aqua Aerobic S.B.R. system which is state of the art and cutting edge technology. The SBR provides the ability to treat more water with a much smaller footprint on the available property with outstanding treatment as well. With the addition of the Flottweg centrifuges we will be able to triple our output of biosolids to the landfill, giving us more time to work on projects and maintenance around the plant.



The District Today

Currently the District employs eight full-time operators at the plant and one part-time operator shared between the plant and collection system. The District has six employees in the collection system. Six employees in the office cover the billings, financials, books and reporting. The District does all its own billing and office work. The District saves substantial funds by doing most all duties in-house and tries to avoid contracting out work.

Board of Directors

Chairman: Paul Allen
Vice Chairman: William Holland
Secretary: Karl Buetow
Financial Clerk: W. James Webb
Member: Charlie Dorton

Superintendents/Supervisors

District Manager: Debbie Sillery
Plant Superintendent: Shawn Massingale
Asst. Superintendent: Cory Trueblood
Weekend Supervisor: Butch Barger
Collections Supervisor: Gary Padgett

WCCD has 21 employees on staff.

Challenges

One of the major challenges the District faced was the grease and high strength waste from a large bakery. The bakery waste had loadings of 330 mg/L B.O.D. and higher at times. The solution to this problem was not as easy as you might think. We increased monitoring of the

industrial user and enforced the pretreatment ordinance to the fullest extent, charging for the higher strength discharges. We also inspected the industrial facility and found several illegal drains connected to the sanitary sewer system. The District forced the industry to plug the drains and discontinue their use. At the WWTP we started a trending program to monitor the incoming loading very closely to make timely adjustments to the facility to handle the higher loads. We discovered by running a very low bio-mass around 900 T.S.S. to no higher than 1,800 T.S.S., the plant produced the highest quality effluent. The higher loadings to the bio-mass speeds up the reproduction rate of the micro-organisms and the population can get out of control very quickly. Close monitoring is a must for our facility. Keeping the bio-mass within these limits is a major requirement for the facility to

be able to handle the high loading from the industry.

Grease in the plant influent from the numerous restaurants in town was a major problem as well. We increased our inspection of grease traps for every restaurant, and also require proof of receipt of cleaning out the grease trap and proper disposal at an approved facility. At first we had some non-compliance but after a-while everyone complied, which significantly reduced the load of grease to the treatment plant.

Plant Discharge Limits

WCCD discharges into White Lick Creek in Hendricks County and is regulated through an IDEM issued NPDES permit. The discharge limits specify the limits for our effluent water going to the creek, and are shown in the table below. □



PARAMETER	MONTHLY AVG.	WEEKLY AVG.	FREQUENCY	SAMPLE TYPE
FLOW	REPORT	REPORT	DAILY	24-Hr. Total
CBOD 5 Summer	10 mg/L	15 mg/L	DAILY	24-Hr. Composite
CBOD 5 Winter	20 mg/L	30 mg/L	DAILY	24-Hr. Composite
TSS Summer	12 mg/L	18 mg/L	DAILY	24-Hr. Composite
TSS Winter	24 mg/L	36 mg/L	DAILY	24-Hr. Composite
NH3 Summer	1.3 mg/L	1.9 mg/L	DAILY	24-Hr. Composite
NH3 Winter	2.4 mg/L	3.6 mg/L	DAILY	24-Hr. Composite
PARAMETER	DAILY MINIMUM	DAILY MAXIMUM	FREQUENCY	SAMPLE TYPE
pH	6 s.u.	9 s.u.	DAILY	Grab
D.O. Summer	6 mg/L	N/A	DAILY	6 Grabs/ 24-Hrs.
D.O. Winter	5 mg/L	N/A	DAILY	6 Grabs/ 24-Hrs.
E. Coli	Monthly Avg. 125 per 100 mL	235 per 100 mL	DAILY	Grab
Influent Mercury (7)	N/A	REPORT ng/L	6 x Annually	Grab
Effluent Mercury (7)	N/A	REPORT ng/L	6 x Annually	Grab