



United States Environmental Protection Agency
Office of Enforcement and Compliance Assurance
Office of Criminal Enforcement, Forensics and Training

National Enforcement Investigations Center

NEIC

NEICVP1563E01

NEIC CIVIL INVESTIGATION REPORT

West Hickman WWTP

Nicholasville, Kentucky

Investigation Dates:

January 8-11, 2024

MICHAEL
LUKOWICH

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Mike Lukowich, P.E., Project Manager, NEIC

Authorized for Release by:

Linda TeKrony

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Report Prepared for:

Region 4

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APPENDICES (*NEIC-created)

A	West Hickman WWTP KPDES Permit No KY0021504 (31 pages)
B	West Hickman WWTP Site Plan (1 page)
C	West Hickman WWTP Liquid and Solids Flow Schematic (2 pages)
D*	Photo Log - West Hickman WWTP (7 pages)
E	West Hickman WWTP Special Project Narrative (10 pages)
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and provides a clear indication of the end of this report.**

INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

U.S. Environmental Protection Agency (EPA) Region 4 (Region) requested EPA's National Enforcement Investigations Center (NEIC) to conduct a Clean Water Act (CWA) compliance investigation of the West Hickman Wastewater Treatment Plant (facility, WWTP) which is a publicly owned treatment works (POTW) located at 645 West Hickman Plant Road, in Nicholasville, Kentucky. The investigation assessed the POTW's compliance with federal environmental statutes and permit requirements.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Mike Lukowich P.E.	NEIC	Project manager
Jeremy Deyoe	NEIC	Field team member
REGIONAL AND OTHER CONTACTS		
Dennis Sayre	EPA Region 4	Regional field team member

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Charles H. Martin, Director, Water Quality	859-425-2455	chmartin@lexingtonky.gov
Thomas Hilbrand, Chief Plant Operations Manager, Water Quality	859-425-2414	thilbrand@lexingtonky.gov
Matthew Chancellor, Plant Operations Supervisor Sr., Water Quality	859-280-8651	mchancellor@lexingtonky.gov

FACILITY OVERVIEW

West Hickman WWTP is authorized to discharge treated wastewater in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in the Kentucky Pollutant Discharge Elimination System (KPDES) Permit No. KY0021504 (**Appendix A**). The KPDES permit was issued to Lexington-Fayette Urban County Government (LFUCG) on November 19, 2001, became effective on January 1, 2002, and expired on December 31, 2006. The KPDES permit has been administratively extended since 2006 until the renewal permit is issued by the Kentucky Department for Environmental Protection (KDEP).

The facility receives sanitary/commercial/industrial wastewater for treatment and is authorized to discharge from outfall 001 to West Hickman Creek (mile point 28.0) under KPDES permit No. KY0021504. A site plan for the facility is in **Appendix B**. Outfall 001 is subject to effluent

limitations and self-monitoring requirements set forth in the permit. The facility is also required to have and implement a pretreatment program for its industrial users. The pretreatment program was not evaluated as part of the inspection.

Lexington-Fayette Urban County Government is under a consent decree (Civil Action No. 5:06-cv-386-KSF, entered (effective) on January 3, 2011) with Region 4 for sanitary sewer overflows.

According to EPA's Enforcement Compliance History Online (ECHO) website, the facility was last inspected for CWA requirements on January 6, 2023, and listed as a state inspection base program – reconnaissance without sampling. Since September of 2021, the facility has received five Notices of Violation (NOVs) and one Letter of Violation/Warning Letter from the KDEP.

According to the EPA ECHO website, West Hickman WWTP (EPA FRS number 110045063346) has the following North American Industry Classification System (NAICS) code (**Table 3**):

Table 3. APPLICABLE NAICS CODES	
NAICS Code	Description
221320	Sewage treatment facilities

FACILITY OPERATIONS SUMMARY

West Hickman WWTP collects sanitary wastewater through a sewage collection/transmission system located throughout the city and neighboring communities. The sewer system is composed of gravity sewer lines as well as lift stations and force mains that ultimately transport the wastewater from residents and businesses to the WWTP. The collection system was not evaluated under this project.

According to documents submitted by the permittee and inspection of the facility, West Hickman WWTP is a two-stage aeration activated sludge treatment facility with final clarification and chlorine disinfection. Solids are handled using gravity thickeners and aerated sludge holding tanks prior to dewatering via centrifuges. The WWTP is currently rated at 33.87 million gallons per day (MGD) with a peak flow rate of 64 MGD. The West Hickman WWTP liquid and solids flow schematic diagrams are in **Appendix C**.

All influent flow enters the West Hickman WWTP through a 72-inch line at the northeast quadrant of the property. Flow enters the headworks building and travels through four static screens each rated at 50 MGD. After screening, the influent travels into one of two wet wells. During standard operations (dry weather), wastewater flows into the influent pump station containing four submersible pumps rated at 23.4 MGD each and four "low flow" pumps rated at 2,000 gallons per minute (GPM) each.

During wet weather, some flow is diverted into the “wet weather” pump station containing 5 submersible pumps rated at 20 MGD each. The wet weather pumps send influent to 2 wet weather storage tanks with a capacity of 22 million gallons (MG) and 18 MG to equalize flow. When flows return to normal, the tanks drain into the influent pump station to be pumped into the plant for treatment.

Flow from the influent pump station is pumped into 2 grit removal systems rated at 35 MGD each. Grit settles in the bottom of these chambers and is pumped back to grit washers for final removal into a dumpster for landfill disposal. Wastewater leaving the grit chambers then flows into one of two channels with a 6-foot parshall flume for monitoring flow. Channel number 1 flows by gravity to the first stage and beginning of the biological treatment process where it is mixed with the return activated sludge (RAS) from the final clarifiers. Flow from channel number 2 diverts from the beginning of the treatment train into the second stage of aeration should flow be too high for the initial aeration basin.

The first stage of treatment is biological phosphorus removal (BPR) which consists of 7 basins, 1.655 MG total volume. These basins take flow from the headworks and the RAS to create an anaerobic mixing zone for the release of phosphorus to be biologically removed later in the process. Wastewater from the BPR basins flows into Zone 1 aeration.

Zone 1 aeration consists of 8 basins with a total volume of 2.162 MG. These basins are fitted with fine bubble diffusers and a turbo blower for aeration and mixing. The goal of the first stage of aeration is to remove the biological oxygen demand (BOD) coming into the plant.

Operational goals are to maintain a dissolved oxygen (DO) above 1.0 milligrams per liter (mg/L) and a mixed liquor suspended solids (MLSS) around 2500-3500 mg/L. Flow then travels to Zone 2 aeration.

Zone 2 aeration consists of 6 basins with a total volume of 5.46 MG. These basins also have fine bubble diffusers with a turbo blower for aeration and mixing. The goal of the second stage of aeration is to remove ammonia or nitrification. Similar operational goals to zone 1 are set for Zone 2 with a DO of 1-3 mg/L and MLSS between 2,500-3,500mg/L depending on seasonal changes. Zone 2 influent is also the location of the channel diversion from the grit removal at the headworks to maintain solids in the BPR basins along with the RAS.

After Zone 2 aeration, the flow continues into 8 final circular clarifiers with a volume of 8.496 MG and sidewall depth of 12.5 feet. Normal operations maintain a sludge blanket depth of 2 feet or less to ensure denitrification does not occur in the clarifiers. Sludge is pulled from the bottom of the clarifiers using one of five RAS centrifugal pumps rated at 9,000 GPM each. The facility also can add chemicals at this point to precipitate phosphorous and remove with the solids. Waste activated sludge (WAS) is pulled from the same location at a concentration of

7,500-9,500 mg/L using one of two waste pumps rated at 370 GPM each. Clarifiers and pumps are rotated on a regular basis for maintenance as weather and flow allows.

From the weirs of the clarifiers, the treated water flows into a common collection box for chlorine disinfection. Chlorine is added using one ton cylinder gaseous chlorine with recycled plant water as the carrier water. The flow then enters one of four chlorine contact basins with a total volume of 0.7416 MG. The basins are equipped with fine bubble diffusers for added dissolved oxygen (DO) as well as an aeration ladder prior to final discharge.

After the aeration ladder, the treated wastewater enters another box for de-chlorination using sulfur dioxide. After de-chlorination, the effluent flows into a 60-inch pipe to the final outfall which discharges into West Hickman Creek.

WAS is pumped from the final clarifiers into one of two gravity thickeners with a volume of 0.321 MG. Recycled plant water is also added to the thickeners at a constant rate to promote settling and thickening of sludge as well as to minimize odors.

The sludge is pumped from the bottom of the thickeners into one of two aerated sludge holding (ASH) tanks. Pumps are controlled by timers to maintain a blanket of 3-6 feet in the thickeners. The ASH tanks have a volume of 2.876 MG and are aerated and mixed using rotary lobe blowers and course bubble diffusers. The thickened and homogenous sludge, with approximately a concentration of 2.5% solids, is then pumped to one of two centrifuges rated at 5,000 dry pounds/hour each. The final product of dewatered sludge is deposited into trailers for final disposal in a municipal landfill. The average disposal from the WWTP is 1,400 wet tons per month.

FIELD ACTIVITIES SUMMARY

NEIC conducted the field inspection from January 8-11, 2024. NEIC inspectors, along with a regional EPA inspector, arrived at the facility at approximately 9 a.m. on January 8, 2024, at which time credentials were presented to facility contacts listed in **Table 2** of this report. NEIC conducted an opening conference that explained the purpose and scope of the inspection.

During the inspection, NEIC inspectors reviewed discharge monitoring reports (DMRs), laboratory data, process flow diagrams, and self-reported noncompliance notifications. Inspectors also interviewed personnel at the facility.

In addition, NEIC inspectors conducted a walk-through inspection of the facility and observed the treatment system, along with the designated outfall 001. NEIC took photographs of the treatment works and outfall. A photo log is contained in **Appendix D**. After completing the inspection, on January 11, 2024, NEIC inspectors, the regional EPA inspector, and facility

representatives had a closing conference and discussed initial observations. NEIC inspectors departed the closing conference at approximately 10 a.m. on January 11, 2024.

INVESTIGATION OBSERVATIONS

NEIC identified the following observations during the CWA compliance evaluation inspection. NEIC field team members discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. EPA Region 4 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

Observation: 1

Observation Summary: West Hickman experienced a loss of solids from the wastewater treatment plant which was discharged through outfall 001 on or about December 28, 2022.

Citation: NPDES Permit No. KY0021504, Part II, Page II-1

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 Kentucky Administrative Regulations (KAR) 5:065, Section 1 will apply to all discharges authorized by this permit.

KAR 5:065

Section 1. Definitions. Definitions established in 40 Code of Federal Regulations (C.F.R.) § 122.2 shall apply for the interpretation of federal regulations that are cited within this administrative regulation.

Section 2. Federal Regulations. A KPDES permit limitation, standard, or condition shall be as established in:

- (1) 40 C.F.R. § 122.41;*
- (2) 40 C.F.R. § 122.42;*
- (3) 40 C.F.R. § 122.43;*
- (4) 40 C.F.R. § 122.44;*
- (5) 40 C.F.R. § 122.45;*
- (6) 40 C.F.R. § 122, Appendix A;*
- (7) 40 C.F.R. § 129;*
- (8) 40 C.F.R. § 136;*
- (9) 40 C.F.R. § 401 through 471; and*
- (10) 40 C.F.R. § 503.*

40 C.F.R. § 122.41(d)

(d) Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

40 C.F.R. § 122.41(e)

(e) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this

Observation: 1

permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

Evidence:

Appendix A – West Hickman WWTP KPDES Permit No KY0021504

Appendix E – West Hickman Special Project

Appendix F – Correspondence from West Hickman to KDEP concerning December 2022 solids washout

Appendix G – KDEP Inspection Report from January 6, 2023, Inspection

Description of Observation: The West Hickman WWTP is authorized to discharge from outfall 001 to West Hickman Creek under KPDES permit No. KY0021504 (**Appendix A**). Outfall 001 is subject to effluent limitations and monitoring requirements.

On or about December 28, 2022, West Hickman WWTP staff observed solids leaving the plant through outfall 001. The loss of solids was investigated by the permittee. According to the permittee:

“The superintendent offered that the loss was caused by cold weather which inhibited his ability to dewater sludge because they were replacing their belt presses with centrifuges and the solids were being frozen on the temporary belt presses that were being used outside during the installation of the centrifuges. He said he had to shut down dewatering processes until the weather warmed enough to run the belt presses. Our state inspector, Deborah Singleton, came to the plant and was given the same scenario. Within two days the belt presses were running again, and the solids were no longer exiting the plant so it was assumed that the problem had been corrected.”

A complete narrative and explanation of the events is contained in **Appendix E**. Correspondence from West Hickman WWTP to KDEP concerning the washout of solids from the plant is in **Appendix F**.

KDEP conducted an inspection of the West Hickman WWTP on January 6, 2023 (**Appendix G**). It was observed by the KDEP inspector that the facility was no longer discharging solids through outfall 001.

Observation: 2

Observation Summary: West Hickman WWTP experienced a loss of solids from the wastewater treatment plant, which was discharged through outfall 001, with the presence of foam, on March 27-28, 2023, and April 18, 2023.

Citation: NPDES Permit No. KY0021504, Part II, Page II-1

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

KAR 5:065

Observation: 2

Section 1. Definitions. Definitions established in 40 C.F.R. § 122.2 shall apply for the interpretation of federal regulations that are cited within this administrative regulation.

Section 2. Federal Regulations. A KPDES permit limitation, standard, or condition shall be as established in:

- (1) 40 C.F.R. § 122.41;
- (2) 40 C.F.R. § 122.42;
- (3) 40 C.F.R. § 122.43;
- (4) 40 C.F.R. § 122.44;
- (5) 40 C.F.R. § 122.45;
- (6) 40 C.F.R. § 122, Appendix A;
- (7) 40 C.F.R. § 129;
- (8) 40 C.F.R. § 136;
- (9) 40 C.F.R. § 401 through 471; and
- (10) 40 C.F.R. § 503.

40 C.F.R. § 122.41(d)

(d) Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

40 C.F.R. § 122.41(e)

(e) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

Evidence:

Appendix A – West Hickman WWTP KPDES Permit No KY0021504

Appendix H – KDEP Notice of Violation April 26, 2023

Appendix I – West Hickman Response to Notice of Violation May 16, 2023

Appendix E – West Hickman Special project

Description of Observation: The West Hickman WWTP is authorized to discharge from outfall 001 to West Hickman Creek under KPDES permit No. KY0021504 (**Appendix A**). Outfall 001 is subject to effluent limitations and monitoring requirements.

On March 27-28 and April 18, 2023, West Hickman WWTP staff observed solids and foam leaving the plant through outfall 001. The loss of solids was investigated by the permittee.

According to the permittee:

“In the weeks following the March 25, 2023, solids bypass, LFUCG has identified the following operational deficiencies that contributed to the non-compliance associated with this Notice of Violation.

Observation: 2

1. *The temporary belt presses used between October 2022 and February 2023 could not process the volume of waste necessary to prevent an excess solids build up in the plant.*
2. *The output of the new centrifuges was hindered during start-up because the plant was not operating the thickeners and ASH tanks as dictated by the 1999-2001 process change. This lower output further contributed to the excess solids build up in the plant.*
3. *The visible foam being discharged was most likely the result of "young" sludge rather than what was originally believed to be excess polymer that resulted from the centrifuge start up (testing with various polymers and dosages)."*

A notice of violation was issued by KDEP to West Hickman on April 26, 2023 (**Appendix H**). West Hickman WWTP responded to the notice of violation dated May 16, 2023 (**Appendix I**). Further information regarding the cleanup of solids in the WWTP and corrective measures are out lined in the West Hickman Special Project narrative (**Appendix E**).

Observation: 3

Observation Summary: West Hickman WWTP staff may have diluted samples from required self-monitoring to be in compliance with discharge effluent limits in the KPDES permit.

Citation: NPDES Permit No. KY0021504, Part II, Page II-1

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

KAR 5:065

Section 1. Definitions. Definitions established in 40 C.F.R. § 122.2 shall apply for the interpretation of federal regulations that are cited within this administrative regulation.

Section 2. Federal Regulations. A KPDES permit limitation, standard, or condition shall be as established in:

- (1) 40 C.F.R. § 122.41;
- (2) 40 C.F.R. § 122.42;
- (3) 40 C.F.R. § 122.43;
- (4) 40 C.F.R. § 122.44;
- (5) 40 C.F.R. § 122.45;
- (6) 40 C.F.R. § 122, Appendix A;
- (7) 40 C.F.R. § 129;
- (8) 40 C.F.R. § 136;
- (9) 40 C.F.R. § 401 through 471; and
- (10) 40 C.F.R. § 503.

40 C.F.R. § 122.41(j)(1)

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

Evidence

Appendix A – West Hickman WWTP KPDES Permit No KY0021504

Appendix E – West Hickman Special Project

Observation: 3

Description of Observation: The West Hickman WWTP effluent is authorized to discharge from outfall 001 to West Hickman Creek under KPDES permit No. KY0021504 (**Appendix A**). Outfall 001 is subject to effluent limitations and monitoring requirements.

West Hickman management became aware of the possibility of staff diluting samples in April 2023. According to West Hickman:

"In the first couple of weeks following the March 2023 upset, all emphasis was on ceasing solids release and getting sludge production increased to start cleaning up the plant. In April 2023, Charlie Martin received an LFUCG Tip Line report that alleged 'rigging' of samples at West Hickman under the full knowledge of the plant superintendent and the solids process supervisor. The Tip Line report, submitted anonymously, implied that the superintendent was complicit with diluting compliance samples. The Kentucky Division of Water was immediately notified and within days Lexington was submitting a plan to implement a parallel sampling plan to 1) verify sample results being collected by plant staff and 2) establish a clear deterrent to any future behavior that might undermine the integrity of the daily monitoring results. The plan (Special Project) assigned staff from Lexington's Compliance and Monitoring Section to install an ISCO sampler in the plant effluent channel and run a 24-hour composite next to the plant's sampler. The two samples would then be sent to the lab and analyzed together with a spreadsheet generated to compare the two sets of results.

Analysis of the samples collected during the special project revealed negligible differences between the two sets. The overall quality of the effluent improved rapidly with the removal of solids from the plant. The special project was gradually reduced in frequency until it was discontinued at the end of September 2023."

The complete West Hickman Special Project narrative outlines further corrective actions and provides the parallel sampling data performed by West Hickman (**Appendix E**). The sampling data derived from the special project was not reviewed and is beyond the scope of this inspection.

Observation: 4

Observation Summary: Storm water associated with industrial activity discharges from the West Hickman WWTP site from two outfalls into West Hickman Creek that are not authorized under the KPDES permit (unauthorized discharge).

Citation: *Clean Water Act Section § 301(a): except as in compliance with this section and sections 302, 306, 307, 318, 402 and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.*

40 C.F.R. § 122.1(b)(1): The NPDES program requires permits for the discharge of "pollutants" from any "point source" into "waters of the United States."

40 C.F.R. § 122.2: Pollutant: means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand,

Observation: 4

cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean: (a) Sewage from vessels; or (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

40 C.F.R. § 122.2: Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

40 C.F.R. § 120.2: Waters of the United States means: (1) Jurisdictional waters. For purposes of the Clean Water Act, 33 U.S.C. 1251 et seq. and its implementing regulations, subject to the exclusions in paragraph (2) of this section, the term "waters of the United States" means: (i) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; (ii) Tributaries; (iii) Lakes and ponds, and impoundments of jurisdictional waters; and (iv) Adjacent wetlands.

Clean Water Act Section § 402(p): Municipal and Industrial Storm water Discharges. —

(1) General Rule. --Prior to October 1, 1994, the Administrator or the State (in the case of a permit program approved under section 402 of this Act) shall not require a permit under this section for discharges composed entirely of storm water.

(2) Exceptions. --Paragraph (1) shall not apply with respect to the following storm water discharges: (A) A discharge with respect to which a permit has been issued under this section before the date of the enactment of this subsection. (B) A discharge associated with industrial activity.

40 C.F.R. § 122.26(b)(14): Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part 122. For the categories of industries identified in this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and

Observation: 4

unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (b)(14)(i) through (xi) of this section) include those facilities designated under the provisions of paragraph (a)(1)(v) of this section. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14):

40 C.F.R. § 122.26(b)(14)(ix): Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under [40 CFR part 403](#). Not included are farmlands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA

Evidence:

Appendix J – West Hickman WWTP Drainage Map

Appendix K – KDEP MS4 Inspection Reports

Description of Observation:

The facility provided a drainage map that displays two storm water outfalls (**Appendix J**). Stormwater outfall WH-6 is in the northern portion of the facility and discharges directly into West Hickman Creek. A second unnamed stormwater outfall is identified on the map in the southern portion of the site adjacent to outfall 001. The unnamed stormwater outfall also discharges directly into West Hickman Creek.

The KPDES permit does not authorize discharge of stormwater associated with industrial activity from the site. The facility does not hold a general permit to authorize the discharge. Lexington-Fayette Urban County Government staff stated that the industrial stormwater is authorized to discharge under the county's municipal separate storm sewer system (MS4) permit No. KYS000002. A copy of the latest KDEP facility and MS4 stormwater inspections are attached to this report (**Appendix K**). NEIC inspectors did not evaluate the MS4 permit during the inspection.

Observation: 5

Observation Summary: A DMR Integrity Report for the West Hickman WWTP was generated in ECHO and the facility was identified for limit crowding.

Citation: NPDES Permit No. KY0021504, Part II, Page II-1

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

Observation: 5

KAR 5:065

Section 1. Definitions. Definitions established in 40 C.F.R. § 122.2 shall apply for the interpretation of federal regulations that are cited within this administrative regulation.

Section 2. Federal Regulations. A KPDES permit limitation, standard, or condition shall be as established in:

- (1) 40 C.F.R. § 122.41;
- (2) 40 C.F.R. § 122.42;
- (3) 40 C.F.R. § 122.43;
- (4) 40 C.F.R. § 122.44;
- (5) 40 C.F.R. § 122.45;
- (6) 40 C.F.R. § 122, Appendix A;
- (7) 40 C.F.R. § 129;
- (8) 40 C.F.R. § 136;
- (9) 40 C.F.R. § 401 through 471; and
- (10) 40 C.F.R. § 503.

40 C.F.R. § 122.41(j)(1)

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

Evidence:

Appendix A – West Hickman WWTP KPDES Permit No KY0021504

Appendix L – West Hickman DMR Integrity Report

Appendix M – Effluent Exceedances West Hickman WWTP Jan 2021 to January 2024

Appendix N – West Hickman DMR and Lab Sheets August 2023

Description of Observation: West Hickman WWTP is authorized to discharge treated wastewater in accordance with the effluent limitations, monitoring requirements and other conditions set forth in the Kentucky Pollutant Discharge Elimination System (KPDES) permit No. KY0021504 (**Appendix A**). The facility reports self-monitoring of the effluent every month on a discharge monitoring report (DMR).

A DMR integrity report (**Appendix L**) was run in ECHO by NEIC for the West Hickman WWTP. The report identified limit crowding as a priority screening. According to the report, “the limit crowding test finds values reported on the DMR that “crowd” close to the permit limit, in a statistically detectable way. Limit crowding could be the result of careful process control, or it could occur if the permittee “changed” an effluent value that exceeded the permit limit to a value just inside the limit.” The limit crowding test identified a priority screen hit for dissolved oxygen. West Hickman WWTP is subject to the following effluent limitation for dissolved oxygen (DO):

Effluent limit - Dissolved Oxygen shall not be less than 7 mg/L

Frequency – 1/day

Sample Type – Grab

Sampling location – Effluent (outfall 001)

West Hickman WWTP had one reported non-compliance result for DO between January 2021 and January 2024. The reported value was 6.8 mg/L in May of 2021. An effluent exceedances

Observation: 5

report, obtained from ECHO, for the January 2021 to January 2024 time frame is attached to this report (**Appendix M**).

NEIC reviewed DMRs and corresponding lab sheets for the summer of 2022 and 2023. Summer is the hottest time of the year and the time when dissolved oxygen in the effluent would be expected to be at the lowest concentration. A copy of the DMR and lab sheets for August 2023 (**Appendix N**) is attached to this report.

This observation was not discussed with facility staff at the closing conference.

Observation: 6

Observation Summary: The West Hickman WWTP experienced effluent exceedances for the period between January 2021 and January 2024.

Citation: NPDES Permit No. KY0021504, Part II, Page II-1

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

KAR 5:065

Section 1. Definitions. Definitions established in 40 C.F.R. § 122.2 shall apply for the interpretation of federal regulations that are cited within this administrative regulation.

Section 2. Federal Regulations. A KPDES permit limitation, standard, or condition shall be as established in:

- (1) 40 C.F.R. § 122.41;
- (2) 40 C.F.R. § 122.42;
- (3) 40 C.F.R. § 122.43;
- (4) 40 C.F.R. § 122.44;
- (5) 40 C.F.R. § 122.45;
- (6) 40 C.F.R. § 122, Appendix A;
- (7) 40 C.F.R. § 129;
- (8) 40 C.F.R. § 136;
- (9) 40 C.F.R. § 401 through 471; and
- (10) 40 C.F.R. § 503.

40 C.F.R. § 122.41(e)

(e) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

Evidence:

Appendix A – NPDES Permit

Appendix M – Effluent Exceedances West Hickman WWTP Jan 2021 to January 2024

Description of Observation:

Observation: 6

West Hickman WWTP is authorized to discharge treated wastewater in accordance with the effluent limitations, monitoring requirements and other conditions set forth in the Kentucky Pollutant Discharge Elimination System (KPDES) permit No. KY0021504 (**Appendix A**). The facility reports self-monitoring of the effluent every month on a discharge monitoring report (DMR).

An effluent exceedances report, obtained from ECHO, for the January 2021 to January 2024 time frame is attached to this report (**Appendix M**). The report shows the facility had exceedances for total phosphorus, either as a daily max or a monthly average for the following months:

- July 2022
- June 2023
- August 2023
- September 2023
- October 2023

Please note that the limits for total phosphorus only apply from May 1 through October 31 in the calendar year.

West Hickman reported the cause for the exceedances as the BPR was not effective and chemical addition was out of service (**Appendix M**).