pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Amendment, Major**	Application No.	**PA0024058**
Facility Type	**Municipal**	APS ID	**1005294**
Major / Minor	**Major**	Authorization ID	**1294697**

Applicant and Facility Information

Applicant Name	**Kennett Square Borough Chester County**	Facility Name	**Kennett Square Borough WWTP**
Applicant Address	120 Marshall Street	Facility Address	650 W South Street
	Kennett Square, PA 19348-3108		Kennett Square, PA 19348-2442
Applicant Contact	Joseph Scalise	Facility Contact	Randy Behmke
Applicant Phone	(610) 444-6020	Facility Phone	(610) 444-6020
Client ID	65288	Site ID	451897
Ch 94 Load Status	Existing Organic Overload	Municipality	Kennett Square Borough
Connection Status	Self Imposed Connection Prohibition	County	Chester
Date Application Received	October 21, 2019	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility

Purpose of Application: See details in description of GIF form.

Summary of Review

The applicant has submitted an amendment for their NPDES permit to discharge treated sewage to West Branch Red Clay Creek.

Their current permit has a Total Nitrogen (TN) limits effective November 1, 2019 (ave. mo. 91.8 lbs/day). Applicant requests revision of the TN compliance date to end of May of 2020 due to construction delays. The on-site construction began in April 1, 2019. The anticipated construction activities associated with this project include retrofitting existing unused primary clarifier tanks into anoxic treatment tanks, upgrading the oxidation ditches with new aeration impellers and internal mixed Liquor Recycling Pumps, VFDs, valves, flow meters, probs, analyzers and other appurtenances along with the rerouting of piping within the plant to meet the new effluent requirements for Total Nitrogen by Biological Nutrient Removal.

Act 14 Notifications: Chester County Planning Commission was notified about this amendment submittal on 10/02/19.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		Begay Omuralieva / Environmental Engineering Specialist /s/	November 12, 2019
X		Pravin C. Patel, P.E. / Environmental Engineer Manager /s/	November 12, 2019

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.1
Latitude	39º 50' 6.15"	Longitude	-75º 43' 29.36"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent from Borough of Kenneth Square WWTP		
Receiving Waters	West Branch Red Clay Creek (TSF, MF)	Stream Code	00391
NHD Com ID	26092318	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-I	Chapter 93 Class.	TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	ORGANIC ENRICHMENT, POLYCHLORINATED BIPHENYLS (PCBS), SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, SOURCE UNKNOWN		
TMDL Status	Final	Name	Christina River Basin,Red Clay Creek Watershed

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance:

Other Comments:

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002		
Latitude	39Âº 50' 16.14"	Longitude	-75Âº 43' 27.02"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary to West Branch Red Clay Creek (TSF, MF)	Stream Code	
NHD Com ID	26092290	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	3-I	Chapter 93 Class.	TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	ORGANIC ENRICHMENT, POLYCHLORINATED BIPHENYLS (PCBS), SILTATION		
Source(s) of Impairment	AGRICULTURE, AGRICULTURE, SOURCE UNKNOWN		
TMDL Status	Final, Final	Name	Christina River Basin,Red Clay Creek Watershed

Changes Since Last Permit Issuance: none

Treatment Facility Summary

Treatment Facility Name: Kennett Square Borough WWTP

WQM Permit No.	Issuance Date
1518403	08/29/2018
1503415	08/21/2003
1599403	09/02/1999

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Oxidation Ditch	Ultraviolet	1.1

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.4	3500	Existing Organic Overload	Aerobic Digestion	Landfill

Changes Since Last Permit Issuance: none

Permit No. PA0024058

Compliance History

DMR Data for Outfall 001 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	0.665	0.702	0.793	0.862	0.882	0.799	0.944	0.915	0.949	0.961	0.960	0.801
Flow (MGD) Daily Maximum	1.120	0.847	1.128	1.171	1.075	0.969	1.447	1.306	1.561	1.558	1.552	1.017
pH (S.U.) Instantaneous Minimum	7.08	7.32	7.27	7.05	7.22	6.92	6.98	7.17	7.15	7.11	7.13	7.17
pH (S.U.) Instantaneous Maximum	7.69	7.64	7.61	7.48	7.42	7.48	7.4	7.39	7.47	7.4	7.41	7.43
DO (mg/L) Instantaneous Minimum	8.0	7.93	7.93	8.4	8.7	9.27	10.14	10.63	10.32	10.08	9.18	8.11
CBOD5 (lbs/day) Average Monthly	< 22	< 18	< 20	< 23	< 23	< 23	< 27	< 29	< 24	< 27	< 26	< 22
CBOD5 (lbs/day) Weekly Average	< 21	< 19	< 22	< 26	< 30	< 29	< 37	44	< 31	< 40	< 34	< 24
CBOD5 (mg/L) Average Monthly	< 4	3	< 3	< 3	< 3	< 3	< 4	< 4	< 3	< 3	< 3	< 3
CBOD5 (mg/L) Weekly Average	< 3.9	< 3.1	< 3	< 3.8	< 3	< 4	< 5	6	< 3	< 4	< 4	< 3
BOD5 (lbs/day) Influent Average Monthly	1780	1546	1560	1858	2043	1882	2401	1670	1927	2579	2669	2290
BOD5 (lbs/day) Influent Weekly Average	2596	2070	1849	2381	2957	2721	2717	2331	2663	3246	2814	2576
BOD5 (mg/L) Influent Average Monthly	298	266	240	259	260	286	309	210	246	329	330	333
BOD5 (mg/L) Influent Weekly Average	347	344	260	354	291	430	350	290	285	337	343	439
TSS (lbs/day) Average Monthly	< 36	< 32	< 37	< 58	< 45	< 42	< 47	< 49	< 49	< 42	< 46	50

TSS (lbs/day) Influent Average Monthly	1158	1152	1317	1375	1823	1521	2201	1799	1947	2623	2136	1494
TSS (lbs/day) Influent Weekly Average	1423	1404	1538	1844	2776	1760	3103	2799	3133	3097	2492	2010
TSS (lbs/day) Weekly Average	53	35	47	74	53	61	< 61	59	77	< 54	59	67
TSS (mg/L) Average Monthly	< 6	< 6	< 6	< 8	< 6	< 6	< 6	< 6	< 6	< 5	< 6	< 7
TSS (mg/L) Influent Average Monthly	203	199	202	192	235	228	278	225	241	331	257	216
TSS (mg/L) Influent Weekly Average	216	248	229	256	344	267	353	348	345	358	278	268
TSS (mg/L) Weekly Average	7.7	6.2	6.2	10.7	7.4	9	< 7	8	< 7	< 6	7	10
Fecal Coliform (CFU/100 ml) Geometric Mean	35	< 23	31	< 20	< 8	< 7	< 2	< 7	< 7	< 2	< 3	< 15
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	120	54	51	41	52	36	15.5	44	56	80	29	34
Total Nitrogen (lbs/day) Average Monthly	100	98	105	124	131	129	144	136	124	139	156	178
Total Nitrogen (mg/L) Average Monthly	19.08	17.07	16.53	17.57	19.61	19.01	16.61	16.9	17.06	19.31	23.35	22
Ammonia (lbs/day) Average Monthly	< 6	< 0.09	< 0.9	< 2	< 1	2	< 2	< 2	< 1	< 0.8	< 0.8	< 1
Ammonia (mg/L) Average Monthly	< 1.09	< 0.16	< 0.15	< 0.21	< 0.14	0.29	< 0.23	< 0.28	< 0.15	< 0.10	< 0.15	0.20
Total Phosphorus (lbs/day) Average Monthly	3	4	5	5	7	4	10	16	10	8	5	6
Total Phosphorus (mg/L) Average Monthly	0.59	0.77	0.7	0.65	0.84	0.61	1.21	1.97	1.29	1.0	0.6	0.9
Total Cadmium (mg/L) Average Monthly	< 0.001	< 0.005	< 0.005	< 0.005	< 0.001	< 0.005	< 0.001	< 0.001	< 0.001	< 0.005	< 0.0010	< 0.005
Total Copper (mg/L) Average Monthly	0.007	0.018	0.024	0.022	0.006	0.02	0.006	0.008	0.009	0.015	< 0.014	0.012

Total Phenolics (lbs/day) Average Monthly	< 0.05	< 0.06	< 0.06	< 0.07	< 0.07	< 0.07	< 0.09	< 0.09	< 0.07	< 0.07	< 0.07	< 0.08
Total Phenolics (lbs/day) Daily Maximum	< 0.05	< 0.06	< 0.07	< 0.07	< 0.07	0.07	< 0.09	0.10	< 0.08	< 0.08	< 0.07	< 0.08
Total Phenolics (mg/L) Average Monthly	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010
Total Phenolics (mg/L) Daily Maximum	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.010	0.012	< 0.010	< 0.010	< 0.010	< 0.010
Chronic WET - Pimephales Survival (TUc) Daily Maximum	2.2			2.2			2.2			2.2		
Chronic WET - Pimephales Growth (TUc) Daily Maximum	2.2			2.2			2.2			2.2		

DMR Data for Outfall 002 (from October 1, 2018 to September 30, 2019)

Parameter	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
pH (S.U.) Annual Average										7.17		
CBOD5 (mg/L) Annual Average										26		
COD (mg/L) Annual Average										< 2		
TSS (mg/L) Annual Average										6.8		
Oil and Grease (mg/L) Annual Average										< 5		
TKN (mg/L) Annual Average										1.2		
Total Phosphorus (mg/L) Annual Average										0.88		
Dissolved Iron (mg/L) Annual Average										0.67		

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: June 1, 2020 through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Nitrogen	91.8	XXX	XXX	10.0	XXX	20.0	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 001.

Proposed Effluent Limitations and Monitoring Requirements

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Outfall 001, Effective Period: Permit Effective Date through May 31, 2020.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite

Compliance Sampling Location: Outfall 001

Proposed Effluent Limitations and Monitoring Requirements

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Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	230	365	XXX	25	40	50	2/week	24-Hr Composite
CBOD5 May 1 - Oct 31	152	228	XXX	17	25	33	2/week	24-Hr Composite
BOD5 Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
TSS Influent	Report	Report	XXX	Report	Report	XXX	2/week	24-Hr Composite
TSS	275	412	XXX	30	45	60	2/week	24-Hr Composite
Fecal Coliform (#/100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
Ammonia Nov 1 - Apr 30	55	XXX	XXX	6.0	XXX	12	2/week	24-Hr Composite
Ammonia May 1 - Oct 31	18	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus Nov 1 - Mar 31	18	XXX	XXX	2.0	XXX	4	2/week	24-Hr Composite
Total Phosphorus Apr 1 - Oct 31	12	XXX	XXX	1.3	XXX	2.6	2/week	24-Hr Composite
Total Cadmium	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Copper	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phenolics	0.21	0.42 Daily Max	XXX	0.023	0.046 Daily Max	0.058	2/month	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	2.2 Daily Max	XXX	XXX	1/quarter	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	2.2 Daily Max	XXX	XXX	1/quarter	24-Hr Composite

Compliance Sampling Location: Outfall 001

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

Compliance Sampling Location: Outfall 002