This document provides pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.040 MGD wastewater treatment plant with an expansion design flow tier of 0.070 MGD. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1.	Facility Name and Mailing Address:	Eheart Subdivision STP 79 Garrett Street Warrenton, VA 20186	SIC Code:	4952 WWTP
	Facility Location:	Rt. 670 & Rt. 607 Barboursville, VA 22923	County:	Orange
	Facility Contact Name:	Robert Springer	Telephone Number:	(540) 272-1009
	Facility Email Address:	springer351@gmail.com		
2.	Permit No.:	VA0080781	Expiration Date:	10/2/2016
	Other VPDES Permits:	VAN040143		
	Other Permits:	Not Applicable (NA)		
	E2/E3/E4 Status:	NA		
3.	Owner Name:	Garrett Street LLC		
	Owner Contact / Title:	Robert Springer, Managing Member	Telephone Number:	(5401) 272-1009
	Owner Email Address:	springer351@gmail.com		
4.	Application Complete Date:	3/3/2016		
	Permit Drafted By:	Alison Thompson	Date Drafted:	7/19/2016
	Draft Permit Reviewed By:	Caitlin Shipman	Date Reviewed:	7/28/2016
	Public Comment Period :	Start Date:	End Date:	
5.	Receiving Waters Information:	See Attachment 1 for the Flow Frequency Determination.		
	Receiving Stream Name:	Preddy Creek, UT	Stream Code:	2BXAG
	Drainage Area at Outfall:	12.6 sq.mi.	River Mile:	0.66
	Stream Basin:	James River (Middle)	Subbasin:	None
	Section:	10	Stream Class:	III
	Special Standards:	None	Waterbody ID:	VAV-H27R; JR12
	7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
	1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
	30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
	Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

X	State Water Control Law	**X**	EPA Guidelines
X	Clean Water Act	**X**	Water Quality Standards
X	VPDES Permit Regulation		Other (PES, Occoquan Policy, Dulles)
X	EPA NPDES Regulation		(GP – note regulation and title)

7. **Licensed Operator Requirements:** Class III

8. Reliability Class: Class II

9. Facility / Permit Characterization:

X	Private	X	Effluent Limited		Possible Interstate Effect
	Federal	X	Water Quality Limited		Compliance Schedule
	State		Whole Effluent Toxicity Program		Interim Limits in Permit
	POTW		Pretreatment Program		Interim Limits in Other Document
X	eDMR Participant	X	Total Maximum Daily Load (TMDL)		

10. Wastewater Sources and Treatment Description:

The wastewater treatment plant has not been built at this time. Initial plans are for the 0.040 MGD facility to be built with a possible future expansion to 0.070 MGD.

The proposed system will be a privately owned sewage treatment plant which will serve a small residential community with approximately 114 homes. At this time, the proposed treatment system will consist of an extended aeration plant with activated sludge followed by sand filtration and disinfection. Effluent will flow into an aeration basin where primary treatment will be provided via activated sludge with extended aeration and secondary clarifier. Following the activated sludge process, additional treatment will be provided by sand filtration. Chlorine disinfection followed dechlorination and post aeration will occur prior to discharging treated effluent to an unnamed tributary to Preddy Creek.

See Attachment 2 for the site plan and plant process schematic for the proposed facility.

TABLE 1
OUTFALL DESCRIPTION

Number	Discharge Sources	Treatment	Design Flows	Latitude / Longitude
001	Domestic Wastewater	See Section 10	0.04 and 0.07 MGD	38° 11′ 30″ N 78° 21′ 18″ W
See Attachment 3 for (Barboursville, DEQ #173A) topographic map.				

11. Sludge Treatment and Disposal Methods:

Since this facility has not been built yet, the sludge disposal contractor has not been selected. It is the permittee's plan to hire a contractor to handle the sludge disposal properly.

12. Other Permitted Discharges and Monitoring Stations Located Within Waterbody VAV-H27R:

TABLE 2
LOCATED WITHIN WATERBODY VAV-H27R

ID / Permit Number	Name	Type	Receiving Stream
2-PRD006.35	DEQ Monitoring Stations	Biomonitoring	Preddy Creek
2-PRD004.42		Ambient	Preddy Creek North Branch

13. Material Storage:

The facility has not been built yet so there is not material storage on site.

14. Site Inspection:

The facility has not been built so no site inspection was made for this permit reissuance.

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

This facility discharges to an unnamed tributary to Preddy Creek within the Preddy Creek North Branch assessment unit; this unnamed tributary flows to another unnamed tributary, which flows into Preddy Creek. DEQ ambient monitoring station 2-PRD004.42 is located within the Preddy Creek North Branch assessment unit on Preddy Creek at Route 641, approximately 1.8 miles downstream from this facility. The following is the water quality summary for the Preddy Creek North Branch assessment unit, as taken from the Final 2014 Integrated Assessment:

Class III - Piedmont Zones Waters; Section 10

DEQ monitoring stations located in the Preddy Creek North Branch assessment unit:
- 2-PRD004.42 (1 violation of 1 sample for *E. coli* in 2014, impaired for VSCI, no new data, remains impaired)
- 2-PRD006.35 (Impaired for VSCI)

This assessment unit is fully supporting the wildlife use. The aquatic life use is not supporting due to the impaired for VSCI benthic surveys. Recreational use is not supporting due to violations of the *E. coli* WQS. This assessment unit was added to the existing recreational impairment downstream. This impairment has been addressed in the Preddy Creek TMDL for bacteria. (Federal TMDL ID # 35770) Fish consumption use was not assessed.

Initial Listing Date: 2006 (bacteria) (This AU added in 2010) 2010 Benthics
Total Impaired Area: 105.85 Miles (bacteria) 36.09 Miles (Benthics)

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 3
303(d) IMPAIRMENT AND TMDL INFORMATION FOR THE RECEIVING STREAM

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA
Preddy Creek North Branch	Aquatic Life	Benthic Macroinvertebrates	---	---	---
	Recreation	*E. coli*	Rivanna River Bacteria TMDL 01/05/2009	1.22E+11 cfu/year *E. coli*	126 cfu/100 ml *E. coli* --- 0.07 MGD

TABLE 4 INFORMATION ON DOWNSTREAM 303(D) IMPAIRMENTS AND TMDLS							
Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2014 Integrated Report							
Rivanna River	Aquatic Life	Benthic Macroinvertebrates	13 miles	Rivanna River Sediment TMDL 06/11/2008	3.20E+03 lbs/year sediment	Max permitted design flow (0.07 MGD) and permitted average TSS concentration (15 mg/L)	---

This facility discharges to an unnamed tributary of the Beaverdam Creek within the Chesapeake Bay watershed. The receiving stream has been identified in the Chesapeake Bay TMDL; approved by the Environmental Protection Agency (EPA) on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tributaries by establishing nonpoint source load allocations (LAs) and point source wasteload allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185.

Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP); approved by EPA on December 29, 2010. The approved WIP recognizes the *General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia* (9VAC25-820 et seq.) as controlling the nutrient allocations for non-significant Chesapeake Bay dischargers. The approved WIP states that for non-significant municipal facilities, nutrient WLAs are to be consistent with Code of Virginia procedures, which set baseline WLAs at 2005 permitted design capacity nutrient load levels. In accordance with the WIP, TN and TP WLAs for non-significant facilities are considered aggregate allocations and will not be included in individual permits. The WIP also considers TSS WLAs for non-significant facilities to be aggregate allocations; however, TSS limits are to be included in individual VPDES permits in conformance with the technology-based requirements found in the Clean Water Act. Furthermore, the WIP recognizes that so long as the aggregated TSS permitted loads for all dischargers is less than the aggregated TSS load in the WIP, the individual permit will be consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. This facility is classified as a non-significant Chesapeake Bay discharger and has not made application for a new or expanded discharge since 2005. It is therefore covered by rule under the 9VAC25-820 regulation. In accordance with the WIP, TN and TP load limits are not included in this individual permit, but are consistent with the TMDL because the current nutrient loads are in conformance with the facility's 2005 permitted design capacity loads. This individual permit includes weekly average TSS limits of 30 mg/L that are in conformance with technology-based requirements and, in turn, are consistent with the Chesapeake Bay TMDL.

In addition, this individual permit contains limits for ammonia, BOD_5 and dissolved oxygen which provide protection of instream DO concentrations of at least 5.0 mg/L. Furthermore, implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient conditions such that the proposed effluent limits found within this individual permit are consistent with the Chesapeake Bay TMDL and will not cause an impairment or observed violation of the standards for DO, chlorophyll a or SAV as required by 9VAC25-260-185.

The planning statement is found in Attachment 4.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, an unnamed tributary to Preddy Creek, is located within Section 10 of the James River (Middle) Basin and classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32° C and maintain a pH of 6.0 – 9.0 standard units (S.U.).

The Freshwater Water Quality/Wasteload Allocation Analysis located in Attachment 5 details other water quality criteria applicable to the receiving stream.

Some Water Quality Criteria are dependent on the pH, temperature and total hardness of the receiving stream and/or final effluent.

pH and Temperature for Ammonia Criteria

The fresh water, aquatic life Water Quality Criteria for ammonia is dependent on the instream pH and temperature. Since the effluent may have an impact on the instream values, the pH and temperature values of the effluent must also be considered when determining the ammonia criteria for the receiving stream. The 90th percentile pH and temperature values are utilized because they best represent the critical conditions of the receiving stream.

The critical 30Q10 and 1Q10 flows of the receiving stream have been determined to be 0.0 MGD. In cases such as this, effluent pH and temperature data are typically utilized to establish the ammonia water quality criteria. But, since the facility is not constructed, default values shall be used to establish the ammonia criteria.

The default annual temperature value of 25ºC, 15°C wet season temperature value, a 90th percentile pH value of 8.0 S.U., and a 10th percentile pH value of 7.5 S.U. were used to calculate the ammonia water quality standards because no stream or effluent data was available.

Hardness Dependent Metals Criteria

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). There is no hardness data for this facility or the receiving stream. Staff guidance suggests using a default hardness value of 50 mg/L $CaCO_3$ for streams east of the Blue Ridge. The hardness-dependent metals criteria in Attachment 5 are based on this default value.

Bacteria Criteria

The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli per 100 mL of water shall not exceed the following:

	Geometric Mean[1]
Freshwater *E. coli* (N/100 mL)	126

[1]For a minimum of four weekly samples taken during any calendar month

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, unnamed tributary to Preddy Creek, is located within Section 10 of the James River (Middle) Basin. This section has not been designated with a special standard.

e. Threatened or Endangered Species

The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect threatened and endangered species found near the discharge. DCR, FWS, and DGIF did not request coordination on this permit.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

It is staff's professional judgement that the receiving stream be classified as Tier 1 based on the following: (1) the stream critical flows have been determined to be zero; and (2) at times the stream flow may be comprised of only effluent once the facility is constructed.

The proposed permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical 7Q10, 1Q10 and 30Q10 flows have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening

Since the facility has not been built, there is no effluent data to review. Since the facility will be treating domestic sewage, it can be assumed that the following pollutants require a wasteload allocation analysis*:* Total Residual Chlorine and Ammonia as N.

b. Mixing Zones and Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C_o	=	In-stream water quality criteria
Q_e	=	Design flow
Q_s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C_s	=	Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 has been determined to have critical 7Q10, 1Q10 and 30Q10 flows of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c. Effluent Limitations, Outfall 001 – Toxic Pollutants

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N

Due to staff having no stream or effluent data, the default pH and temperature values were used to derive ammonia criteria. The ammonia limits derivations can be found in Attachment 6. DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage. The ammonia limits derived are as follows; Flow tier 0.040 MGD Ammonia monthly and weekly average concentrations = 2.4 mg/L and Flow tier 0.070 MGD Ammonia monthly average concentration = 1.6 mg/L; weekly average concentration = 2.4 mg/L.

Since the stream model dated December 21, 1988, required a year round TKN limit of 3.0 mg/L, the incorporation of the above ammonia effluent limitations in the permit will not be necessary. A TKN limit of 3.0 mg/L assumes that the remaining nitrogen is in the form of refractory organic compounds that will not be easily oxidized and that ammonia is removed when this TKN limit is met. The weekly average concentration will be 4.5 mg/L based on a multiplier of 1.5 times the monthly average concentration.

Quarterly ammonia as N monitoring will be added for both flow tiers with this reissuance. DEQ Planning Staff requested this monitoring since the proposed discharge is located within a five mile distance upstream of a benthic impairment.

The Environmental Protection Agency (EPA) finalized new, more stringent ammonia criteria in August 2013; possibly resulting in significant reductions in ammonia effluent limitations. It is staff's professional judgment that the incorporation of those criteria into the Virginia Water Quality Standards is forthcoming. This and many other facilities may be required to comply with these new criteria during their next respective permit terms. The ammonia criteria will be revisited during the next reissuance.

2) Total Residual Chlorine

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average concentration of 0.008 mg/L and a weekly average concentration of 0.010 mg/L are proposed for this discharge at the design flow of 0.040 MGD. A monthly average concentration of 0.007 mg/L and a weekly average concentration of 0.008 mg/L are proposed for this discharge at the design flow of 0.070 MGD (See Attachment 6).

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), carbonaceous biochemical oxygen demand-5 day ($cBOD_5$), total suspended solids (TSS), Total Kjeldahl Nitrogen (TKN), and pH limitations are proposed.

Dissolved Oxygen, $cBOD_5$, and TKN limitations are based on the stream modeling conducted in December 21, 1988 (Attachment 7) and are set to meet the water quality criteria for D.O. in the receiving stream. The stream model shows that the receiving stream dissolved oxygen will be maintained at 5.0 mg/L thus ensuring that the Virginia Water Quality Standards are maintained. This stream model was run using a design flow of 0.070 MGD so the effluent limitations established are approved for any design flows up to 0.070 MGD.

It is staff's practice to equate the Total Suspended Solids limits with the $cBOD_5$ limits. TSS limits are established to equal $cBOD_5$ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 – *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of ≥ 0.04 MGD to treat for TN and TP to either BNR (Biological Nutrient Removal) levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA (State of the Art) levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

Pursuant to § 62.1-44.19:15.A.5, this facility has zero allocation for Total Nitrogen and/or Total Phosphorus loadings and is not authorized to discharge until the permittee demonstrates to the DEQ that he has acquired waste load allocations sufficient to offset his delivered Total Nitrogen and delivered Total Phosphorus loads. Therefore, this permit reissuance does not contain Total Nitrogen and/or Total Phosphorus effluent concentrations for either design flow tiers.

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. This facility has coverage under this General Permit; the permit number is VAN040143. Because this facility has zero allocation for Total Nitrogen and/or Total Phosphorus loadings, an offset plan shall be provided to DEQ prior to or with the Certificate to Construct (CTC) application and shall be included in the General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation For Total Nitrogen And Total Phosphorus Discharges And Nutrient Trading In The Chesapeake Bay Watershed. The offset plan shall be subject to a DEQ-approved trading contract prepared in accordance with 62.1-44.19:12 - :19 of the Law and 9VAC25-820-10 et seq., and which includes, but not limited to, the following: Discussion of the source of the acquired allocations, Discussion of other permitted facilities involved in the trade, and Discussion of any non-point source allocations acquired.

Quarterly monitoring for Nitrates + Nitrites, Total Nitrogen, and Total Phosphorus are included in this permit. The monitoring is needed to protect the Chesapeake Bay Water Quality Standards and verify assumptions made while developing the Watershed Implementation Plan (WIP) for the Chesapeake Bay TMDL. Typically this monitoring is annual, but DEQ Planning Staff requested quarterly monitoring since the proposed discharge is located within a five mile distance upstream of a benthic impairment.

f. Effluent Limitations and Monitoring Summary

The effluent limitations are presented in Section 19. Limits were established for Carbonaceous Biochemical Oxygen Demand-5 day ($CBOD_5$), Total Suspended Solids (TSS), Total Kjeldahl Nitrogen (TKN), pH, Dissolved Oxygen (D.O.), and Total Residual Chlorine. Monitoring is included for Flow, Ammonia as N, Nitrates+Nitrites, Total Nitrogen, and Total Phosphorus.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and then a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.040 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the issuance of the CTO for the 0.07 MGD flow tier or the expiration date, whichever occurs first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/D	Estimate
pH	1	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
$CBOD_5$	1,3	15 mg/L 2.3 kg/day	23 mg/L 3.5 kg/day	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	15 mg/L 2.3 kg/day	23 mg/L 3.5 kg/day	NA	NA	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	3,5	3.0 mg/L 0.45 kg/day	4.5 mg/L 0.68 kg/day	NA	NA	1/M	Grab
Dissolved Oxygen (DO)	1,3	NA	NA	7.0 mg/L	NA	1/D	Grab
E. coli (Geometric Mean) [a.]	1,6	126 n/100mL	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	7	NA	NA	1.0 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	1	0.008 mg/L	0.010 mg/L	NA	NA	1/D	Grab
Ammonia, as N	4,5	NL mg/L	NA	NA	NA	1/3M	Grab
Nitrate+Nitrite, as N	4,5	NL mg/L	NA	NA	NA	1/3M	Grab
Total Nitrogen [b.]	4,5	NL mg/L	NA	NA	NA	1/3M	Calculated
Total Phosphorus	4,5	NL mg/L	NA	NA	NA	1/3M	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Professional Judgement
3. Stream Model – Attachment 9
4. GM 14-2011
5. Chesapeake Bay TMDL/WIP
6. Rivanna River Bacteria TMDL
7. DEQ Disinfection Guidance

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.

1/D = Once every day.
1/W = Once per week.
1/M = Once every month.
1/3M = Once every calendar quarter.

Grab = An individual sample collected over a period of time not to exceed 15 minutes.
Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

a. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

b. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.070 MGD.
Effective Dates: During the period beginning with the issuance of the CTO for the 0.07 MGD flow tier and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	1	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
$CBOD_5$	1,3	15 mg/L 4.0 kg/day	23 mg/L 6.0 kg/day	NA	NA	1/W	4 HC
Total Suspended Solids (TSS)	2	15 mg/L 4.0 kg/day	23 mg/L 6.0 kg/day	NA	NA	1/W	4 HC
Total Kjeldahl Nitrogen (TKN)	3,5	3.0 mg/L 0.45 kg/day	4.5 mg/L 0.68 kg/day	NA	NA	1/W	4 HC
Dissolved Oxygen (DO)	1,3	NA	NA	7.0 mg/L	NA	1/D	Grab
E. coli (Geometric Mean) [a.]	1,6	126 n/100mL	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	7	NA	NA	1.0 mg/L	NA	3/D at 4 hr intervals	Grab
Total Residual Chlorine (after dechlorination)	1	0.007 mg/L	0.008 mg/L	NA	NA	3/D at 4 hr intervals	Grab
Ammonia, as N	4,5	NL mg/L	NA	NA	NA	1/3M	Grab
Nitrate+Nitrite, as N	4,5	NL mg/L	NA	NA	NA	1/3M	Grab
Total Nitrogen [b.]	4,5	NL mg/L	NA	NA	NA	1/3M	Calculated
Total Phosphorus	4,5	NL mg/L	NA	NA	NA	1/3M	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Professional Judgement
3. Stream Model – Attachment 9
4. GM 14-2011
5. Chesapeake Bay TMDL/WIP
6. Rivanna River Bacteria TMDL
7. DEQ Disinfection Guidance

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
3/D = Three times per day at 4 hour intervals.
1/W = Once per week.
1/M = Once every month.
1/3M = Once every calendar quarter.

Grab = An individual sample collected over a period of time not to exceed 15 minutes.

4 HC = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum of four (4) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

a. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

b. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite.

20. Other Permit Requirements:

a. Part I.B. of the Permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-70 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an instream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a. 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a PVOTW.

b. Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200.B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d. CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct (CTC) prior to commencing construction and to obtain a Certificate to Operate (CTO) prior to commencing operation of the treatment works.

e. Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200.C., and by the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

f. Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of II.

g. Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220.D requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

h. Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

i. Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720 and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

j. Treatment Works Closure Plan. This condition establishes the requirement to submit a closure plan for the treatment works if the treatment facility is being replaced or is expected to close. This is necessary to ensure treatment works are properly closed so that the risk of untreated waste water discharge, spills, leaks and exposure to raw materials is eliminated and water quality maintained. Section §62.1-44.21 requires every owner to furnish when requested plans, specification, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purpose of the State Water Control Law.

k. Nutrient Reopener. 9VAC25-40-70.A. authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390.A. authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

l. Nutrient Offsets. The Virginia General Assembly, in their 2005 session, enacted a new Article 4.02 (Chesapeake Bay Watershed Nutrient Credit Exchange Program) to the Code of Virginia to address nutrient loads to the Bay. Section 62.1-44.19:15 sets forth the requirements for new and expanded dischargers, which are captured by the requirements of the law, including the requirement that non-point load reductions acquired for the purpose of offsetting nutrient discharges be enforced through the individual VPDES permit.

m. Total Maximum Daily Load (TMDL) Reopener. Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream.

n. Discharge Monitoring Report Submittal. This special condition delays the monthly DMR submittals until such time that the Certificate to Operate for either the 0.040 or 0.070 MGD facility has been issued. The permittee is required to apply for e-DMR concurrent with the submittal of the Certificate to Operate application. Once the Certificate to Operate has been issued, the permittee is required to submit monthly e-DMRs to the DEQ.

22. Permit Section Part II.

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:
   1) A special condition for Indirect Dischargers was added to the draft permit.
   2) The Water Quality Criteria Reopener was added to the draft permit.

b. Monitoring and Effluent Limitations:
   1) Quarterly monitoring for Total Nitrogen, Total Phosphorus, Nitrates+Nitrites, and Ammonia as N were added to the effluent monitoring.

24. Variances/Alternate Limits or Conditions:

Not applicable.

25. Public Notice Information:

First Public Notice Date: Second Public Notice Date:

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office; 13901 Crown Court; Woodbridge, VA 22193; Telephone No. 703-583-3834, alison.thompson@deq.virginia.gov. See Attachment 8 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

Previous Board Action(s): There have been no recent board actions.

Staff Comments: No comments.

State/Federal Agency Comments: No comments.

Public Comments:

Owner Comments:

Attachments to the VA0080781 Fact Sheet

Attachment 1	Flow Frequency Determination
Attachment 2	Facility Schematic
Attachment 3	Topographic Map
Attachment 4	Planning Statement
Attachment 5	Water Quality Criteria and Wasteload Allocation Determinations
Attachment 6	Limit Evaluations
Attachment 7	Dissolved Oxygen Model
Attachment 8	Public Notice

Attachment 1

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
Eheart Subdivision – #VA0080781

TO: Tom Faha, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: December 30, 1998

COPIES: Ron Gregory, Charles Martin, File

RECEIVED
JAN 4 1999
Northern VA. Region
Dept. of Env. Quality

This memo supersedes my October 18, 1993 memo to Doug Stockman concerning the subject VPDES permit.

The Eheart Subdivision discharges to an unnamed tributary of the Preddy Creek near Eheart, Virginia. Flow frequencies are required at this site for use by the permit writer in developing the VPDES permit.

The flow frequencies for the discharge receiving stream were determined by inspection of the USGS Barboursville Quadrangle topographic map. The map depicts the stream as intermittent. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and harmonic mean. For modeling purposes, flow frequencies have been determined for the first perennial reach downstream of the discharge point.

The VDEQ operated a continuous record gage on the North Fork Rivanna River near Profitt, VA (#02032680) from 1970 to 1992. The gage was located at the Route 649 bridge , in Albemarle County, VA. The flow frequencies for the perennial point were determined using drainage area proportions and do not address any withdrawals, discharges, or springs which may lie upstream. The flow frequencies for the gage and the perennial point are presented below.:

N.F. Rivanna River near Profitt, VA (#02032680):

Drainage Area = 176 mi^2

1Q10 = 6.6 cfs	High Flow 1Q10 = 24 cfs
7Q10 = 8.3 cfs	High Flow 7Q10 = 29 cfs
30Q5 = 17 cfs	HM = 66 cfs

UT to Preddy Creek at perennial point:

Drainage Area = 2.23 mi^2

1Q10 = 0.08 cfs	High Flow 1Q10 = 0.30 cfs
7Q10 = 0.11 cfs	High Flow 7Q10 = 0.37 cfs
30Q5 = 0.22 cfs	HM = 0.84 cfs

The high flow months are December through June.

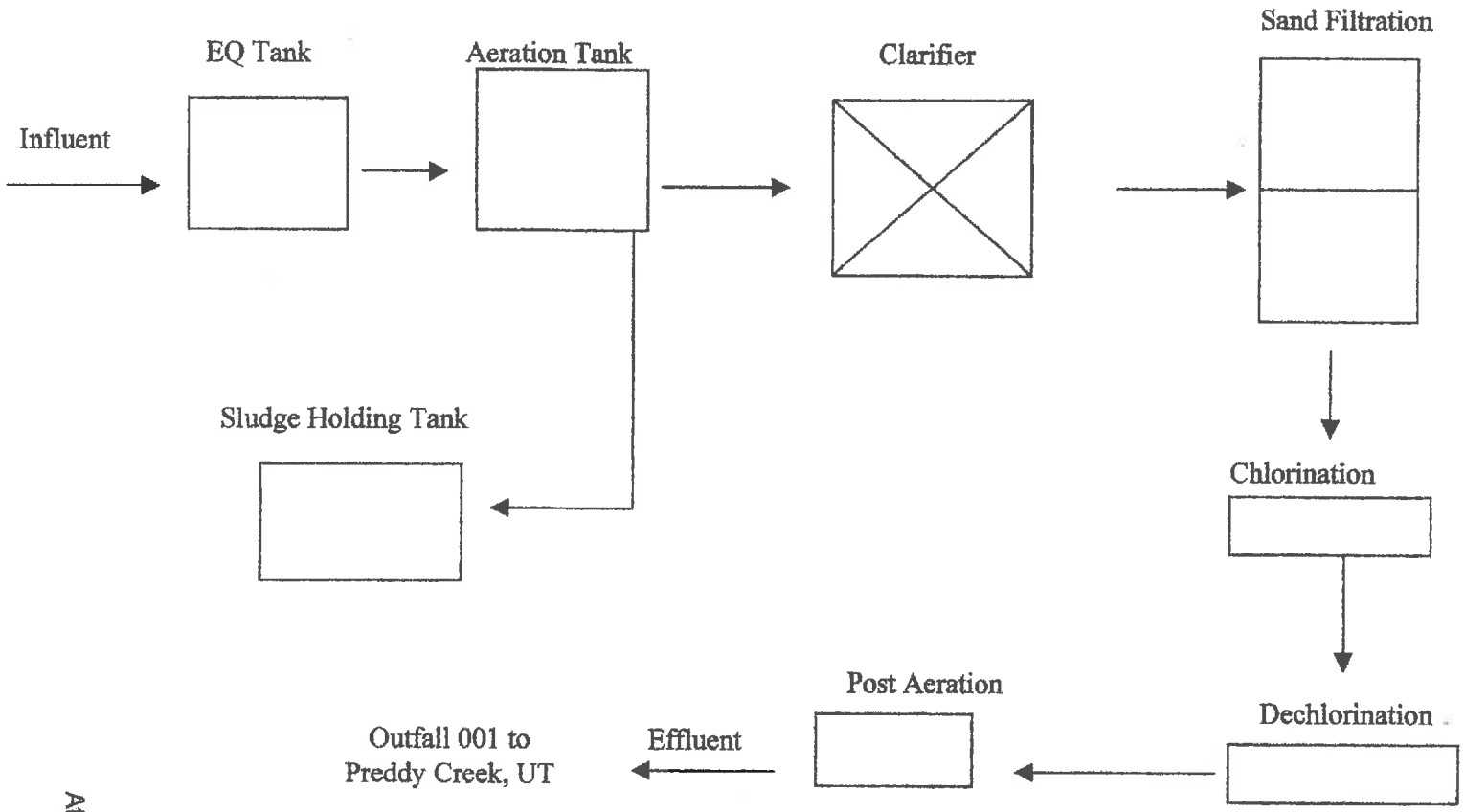
If you have any questions concerning this analysis, please let me know.

Attachment 1

Attachment 2

Eheart Subdivision

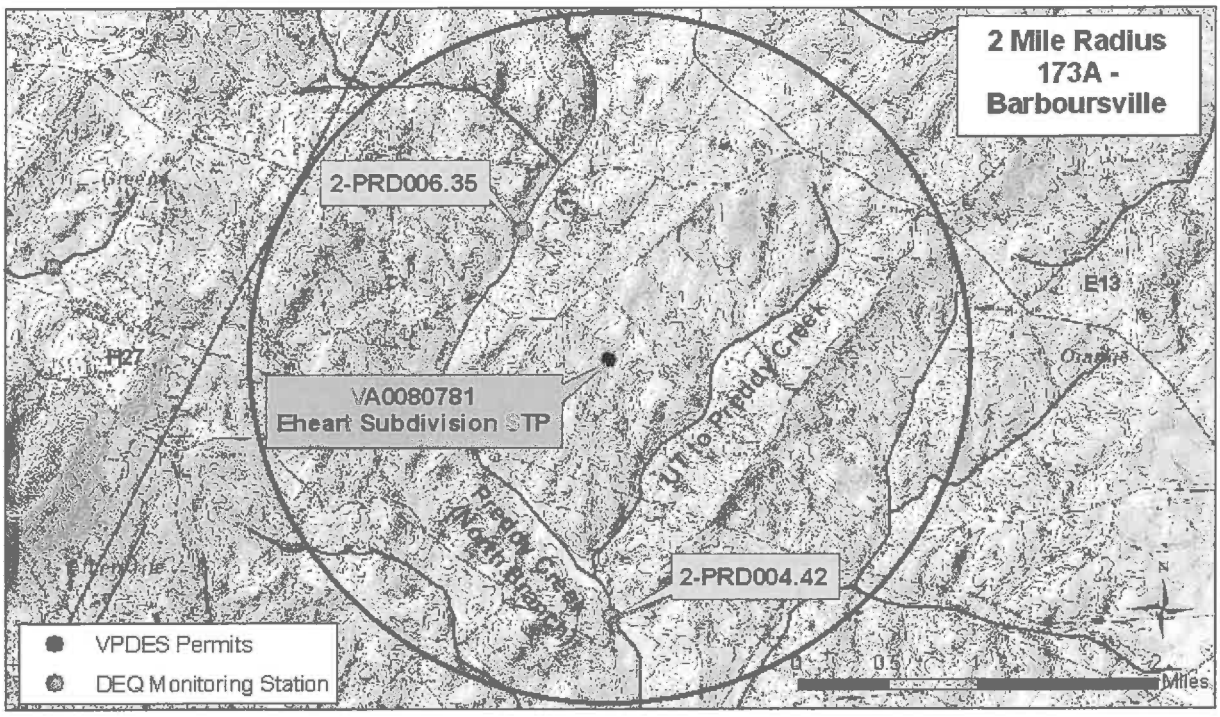
0.07 MGD Extended Aeration- Activated Sludge Package Treatment Plant Flow Diagram



Attachment 2

Attachment 2

Attachment 3


2 Mile Radius
173A -
Barboursville
2-PRD006.35
VA0080781
Eheart Subdivision STP
UT to Priddy Creek
Freeman Creek
North Branch
2-PRD004.42
E13
H27
VPDES Permits
DEQ Monitoring Station
0
0.5
1
2
Miles
N

Attachment 4

To:	Alison Thompson
From:	Rebecca Shoemaker
Date:	February 4, 2016
Subject:	Planning Statement for Eheart Subdivision STP
Permit Number:	VA0080781

Information for Outfall 001:

Discharge Type:	Municipal
Discharge Flow:	0.04 and 0.07 MGD flow tiers proposed
Receiving Stream:	Preddy Creek, UT
Latitude / Longitude:	38° 11' 30" N, 78° 21' 18" W
Rivermile:	0.66
Streamcode:	2BXAG
Waterbody:	VAN-H27R; JR12
Water Quality Standards:	James River (Middle), Class III, Section 10, No special standards
Drainage Area:	12.6 sq miles

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges to an unnamed tributary to Preddy Creek within the Preddy Creek North Branch assessment unit; this unnamed tributary flows to another unnamed tributary, which flows into Preddy Creek. DEQ ambient monitoring station 2-PRD004.42 is located within the Preddy Creek North Branch assessment unit on Preddy Creek at Route 641, approximately 1.8 miles downstream from this facility. The following is the water quality summary for the Preddy Creek North Branch assessment unit, as taken from the Final 2014 Integrated Assessment:

Class III - Piedmont Zones Waters; Section 10

DEQ monitoring stations located in the Preddy Creek North Branch assessment unit:

- *2-PRD004.42 (1 violations of 1 samples for e-coli in 2014, impaired for VSCI, no new data, remains impaired)*
- *2-PRD006.35 (Impaired for VSCI)*

This assessment unit is fully supporting the wildlife use. The aquatic life use is not supporting due to the impaired for VSCI benthic surveys. Recreational use is not supporting due to violations of the e-coli WQS. This assessment unit was added to the existing recreational impairment downstream. This impairment has been addressed in the Preddy Creek TMDL for bacteria. (Federal TMDL ID # 35770) Fish consumption use was not assessed.

Initial Listing Date: 2006 (bacteria) (This AU added in 2010) 2010 Benthics
Total Impaired Area: 105.85 Miles (bacteria) 36.09 Miles (Benthics)

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

Yes.

Table A. 303(d) Impairment and TMDL information for the receiving stream segment

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2014 Integrated Report						
Preddy Creek North Branch	Aquatic Life	Benthic Macroinvertebrates	---	---	---	2022
	Recreation	*E. coli*	Rivanna River Bacteria TMDL 01/05/2009	1.22E+11 cfu/year *E. coli*	126 cfu/100 ml *E. coli* --- 0.07 MGD	---

3. Are there any 303(d) listed impairments within 15 miles downstream that are relevant to this discharge? If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2014 Integrated Report							
Rivanna River	Aquatic Life	Benthic Macroinvertebrates	13 miles	Rivanna River Sediment TMDL 06/11/2008	3.20E+03 lbs/year sediment	Max permitted design flow (0.07 MGD) and permitted average TSS concentration (15 mg/L)	---

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

DEQ planning staff requests the facility perform quarterly nutrient monitoring, specifically total phosphorus, nitrate, nitrite, ammonia, and TKN. Nutrient monitoring is requested of facilities that are located within a five mile distance upstream of a benthic impairment.

The James River, which is located approximately 54 miles downstream of this facility, is listed with a PCB impairment. In support for the PCB TMDL that is scheduled for development by 2016 for the James River, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal discharger. Low-level PCB analysis uses EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. DEQ staff has concluded that low-level PCB monitoring is not warranted for this facility, as it is a small wastewater treatment facility located approximately 54 miles upstream from the PCB impairment. Based on this information, this facility will not be requested to monitor for low-level PCBs.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within five miles of this discharge.

Attachment 5

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Eheart Subdivision STP Permit No.: VA0080781

Receiving Stream: Preddy Creek, UT Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =		mg/L
90% Temperature (Annual) =		deg C
90% Temperature (Wet season) =		deg C
90% Maximum pH =		SU
10% Maximum pH =		SU
Tier Designation (1 or 2) =	1	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows

1Q10 (Annual) =	0	MGD
7Q10 (Annual) =	0	MGD
30Q10 (Annual) =	0	MGD
1Q10 (Wet season) =	0	MGD
30Q10 (Wet season)	0	MGD
30Q5 =	0	MGD
Harmonic Mean =	0	MGD

Mixing Information

Annual - 1Q10 Mix =	100	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	100	%
- 30Q10 Mix =	100	%

Effluent Information

Mean Hardness (as CaCO3) =	50	mg/L
90% Temp (Annual) =	25	deg C
90% Temp (Wet season) =	15	deg C
90% Maximum pH =	8	SU
10% Maximum pH =	7.5	SU
Discharge Flow =	0.07	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile[C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	1.24E+00	na	--	8.41E+00	1.24E+00	na	--	--	--	--	--	--	--	--	--	8.41E+00	1.24E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	2.36E+00	na	--	8.41E+00	2.36E+00	na	--	--	--	--	--	--	--	--	--	8.41E+00	2.36E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine[C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	1.4E+01	1.1E+01	na	3.0E+01	1.4E+01	1.1E+01	na	3.0E+01	--	--	--	--	--	--	--	--	1.4E+01	1.1E+01	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	2.6E+04

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Attachment 6

7/19/2016 7:49:15 AM

Facility = Eheart Subdivision 0.04 MGD
Chemical = Ammonia as N
Chronic averaging period = 30
WLAa = 8.4
WLAc = 1.2
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.42120411209957
Average Weekly limit = 2.42120411209957
Average Monthly LImit = 2.42120411209957

The data are:

9

7/19/2016 7:49:43 AM

Facility = Eheart Subdivision 0.07 MGD
Chemical = Ammonia as N
Chronic averaging period = 30
WLAa = 8.4
WLAc = 1.2
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.42120411209957
Average Weekly limit = 2.42120411209957
Average Monthly LImit = 1.65543952931398

The data are:

9

7/19/2016 7:51:19 AM

Facility = Eheart Subdivision 0.04 MGD
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 19
WLAc = 11
Q.L. = 100
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 16.0883226245855
Average Weekly limit = 9.59676626920107
Average Monthly LImit = 7.9737131838758

The data are:

200

7/19/2016 7:50:56 AM

Facility = Eheart Subdivision 0.07 MGD
Chemical = Total Residual Chlorine
Chronic averaging period = 4
WLAa = 19
WLAc = 11
Q.L. = 100
# samples/mo. = 90
# samples/wk. = 23

Summary of Statistics:

observations = 1
Expected Value = 200
Variance = 14400
C.V. = 0.6
97th percentile daily values = 486.683
97th percentile 4 day average = 332.758
97th percentile 30 day average= 241.210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 16.0883226245855
Average Weekly limit = 8.2932988083132
Average Monthly LImit = 7.39793639872119

The data are:

200

Attachment 7

M E M O R A N D U M

VIRGINIA STATE WATER CONTROL BOARD
Office of Water Resources Management
P.O. Box 11143
2111 N. Hamilton Street Richmond, Virginia 23230

Subject: Eheart Subdivision (Orange County)
To: Cindy Sale - NRO
From: Martin G. Ferguson, Jr. (via Fred Holt)
Date: January 20, 1989
Copies: B. R. Tuxford

We have reviewed the revised modeling for the Eheart Subdivision discharge to the tributary to Freddy Creek (James River Basin) dated 12/28/88.

The modeling is acceptable and the model is approved for application. We have no problem with the proposed permit limits.

Please note that this model has <u>not</u> been checked for conformance with applicable areawide or 303(e) basinwide water quality management plans. This model <u>must</u> be in conformance with such plans, and it is the Regional Office's responsibility to insure such conformance.

RECEIVED
JAN 25 1989
BY
NORTHERN REGIONAL
OFFICE

1/24/89
Spoke w/ Burt Tuxford about Eheart stream model
He said it was approved + mailed out.
NRO has not received yet
Ray

Attachment 8

Attachment 10

****

REGIONAL MODELING SYSTEM VERSION 1.2

****

MODEL SIMULATION FOR THE EHEART SUBDIVISION STP DISCHARGE TO PREDDY CREEK

Model rerun per Burt Tuxford's suggestions of 12/21/88

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS

THE SIMULATION STARTS AT EHEART SUBDIVISION STP

LOW = .07 MGD cBOD5 = 15 Mg/L TKN = 3 Mg/l D.O. = 7 Mg/L

ESULTS WILL BE GIVEN AT .1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

HE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0 MGD
HE DISSOLVED OXYGEN OF THE STREAM IS 6.843 Mg/L
HE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
HE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
1.00	1.34	0.40	20.00	1.40	0.35	0.00	430.0	30.00	7.60
2.00	1.30	0.48	9.23	0.90	0.15	0.00	390.0	30.00	7.61

** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

********** RESPONSE FOR SEGMENT 1 **********

DISTANCE	DISSOLVED OXYGEN	cBOD	nBOD
0.00	7.00	37.50	0.00
0.10	6.17	36.27	0.00
0.20	5.63	35.07	0.00
0.30	5.30	33.92	0.00
0.40	5.11	32.80	0.00
0.50	5.01	31.72	0.00
0.60	4.97 ok	30.68	0.00
0.70	4.97	29.67	0.00
0.80	5.00	28.69	0.00
0.90	5.04	27.75	0.00
1.00	5.10	26.84	0.00
1.10	5.16	25.95	0.00
1.20	5.23	25.10	0.00
1.30	5.30	24.27	0.00
1.34	5.33	23.95	0.00

HE STANDARDS ARE VIOLATED IN THIS SEGMENT

HERE IS A TRIBUTARY AT THE END OF SEGMENT 1 WITH THE FOLLOWING:
LOW = .31 MGD cBOD5 = 3 Mg/L TKN = 0 Mg/L D.O. = 6.8 Mg/L

********** RESPONSE FOR SEGMENT 2 **********

DISTANCE	DISSOLVED OXYGEN	cBOD	nBOD
1.34	6.57	9.72	0.00
1.44	6.56	9.55	0.00
1.54	6.54	9.38	0.00
1.64	6.54	9.21	0.00
1.74	6.53	9.05	0.00
1.84	6.53	8.88	0.00
1.94	6.53	8.72	0.00
2.04	6.54	8.57	0.00
2.14	6.54	8.42	0.00
2.24	6.55	8.27	0.00
2.34	6.56	8.12	0.00
2.44	6.57	7.97	0.00
2.54	6.58	7.83	0.00
2.64	6.59	7.69	0.00

ANTIDEGRADATION IS VIOLATED IN THIS SEGMENT

ΔDO 6.843
ΔDO 6.53
.313

OK

THE NAME OF THE DATA FILE IS: C:jfeheart.MOD

HE STREAM NAME IS: PREDDY CREEK
HE RIVER BASIN IS: JAMES RIVER
HE CLASSIFICATION IS: III
HE SECTION # IS: 10

TANDARDS VIOLATED (Y/N) = N
TANDARDS APPROPRIATE (Y/N) = Y
ISCHARGE WITHIN 3 MILES (Y/N) = N
PSTREAM DISCHARGE FLOW = 0
OUNDARY BOD5 = 0
OUNDARY TKN = 0
OUNDARY D.O. = 0
NTIDEGRADATION APPLIES (Y/N) = Y - applies only to 2nd segment

HE DISCHARGE BEING MODELED IS EHEART SUBDIVISION STP

ROPOSED LIMITS ARE:
FLOW = .07
C BOD5 = 15
TKN = 3 (seasonal - April 1 - Oct 31)
D.O. = 7

IE NUMBER OF SEGMENTS TO BE MODELED = 2
IE GAUGE NAME IS NORTH FORK RIVANNA RIVER
Q10 WILL BE CALCULATED BY DRAINAGE AREA COMPARISION
AUGE DRAINAGE AREA = 176
JAGE 7Q10 = 5.3
AINAGE AREA AT DISCHARGE = .25
SERVED FLOW AT GUAGE = 0
SERVED FLOW AT DISCHARGE = 0
THE STREAM, AT THE DISCHARGE, A DRY DITCH?=Y

SEGMENT INFORMATION

```
#######    SEGMENT #  1      #######

GMENT ENDS BECAUSE  TRIBUTARY ENTERS

GMENT LENGTH =  1.34
GMENT WIDTH =  2
GMENT DEPTH =  .4
GMENT VELOCITY =  .15
STANCE OF UPSTREAM END FROM EHEART SUBDIVISION STP   0
AINAGE AREA AT START =  .25
AINAGE AREA AT END =  2.41
EVATION AT START =  460
EVATION AT END   =  400

OLS AND RIFFLES (Y\N) = N

OSS SECTION IS RECTANGLULAR
ANNEL CHARACTERISTIC = MODEST MEANDERS
TTOM TYPE = SILT
UDGE DEPOSITS ARE NONE
UATIC PLANTS ARE NONE
GAE OBSERVED = NONE
TER COLORED GREEN (Y/N) =N

 TRIBUTARY DATA
     FLOW =  .31
     BOD5 =  3
     TKN  =  0
     D.O. =  6.8
```

SEGMENT INFORMATION

####### SEGMENT # 2 #######

EGMENT ENDS BECAUSE TRIBUTARY ENTERS

EGMENT LENGTH = 1.3
EGMENT WIDTH = 3.6
EGMENT DEPTH = .9
EGMENT VELOCITY = .15
ISTANCE OF UPSTREAM END FROM EHEART SUBDIVISION STP 1.3
RAINAGE AREA AT START = 12.77
RAINAGE AREA AT END = 12.77
LEVATION AT START = 400
LEVATION AT END = 380

OOLS AND RIFFLES (Y\N) = N

ROSS SECTION IS RECTANGLULAR
HANNEL CHARACTERISTIC = STRAIGHT
OTTOM TYPE = SILT
LUDGE DEPOSITS ARE NONE
QUATIC PLANTS ARE NONE
LGAE OBSERVED = NONE
ATER COLORED GREEN (Y/N) =N

Attachment 8

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Orange County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2016 to XXX, 2016

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Garrett Street LLC, 79 Garrett Street, Warrenton, VA 20186, VA0080781

NAME AND ADDRESS OF FACILITY: Eheart Subdivision STP, Route 670 and Route 613, Barboursville, VA 22923

PROJECT DESCRIPTION: Garrett Street LLC has applied for a reissuance of a permit for the private Eheart Subdivision STP. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.04 or 0.07 million gallons per day into a water body. The facility proposes to release the treated sewage wastewaters in the unnamed tributary to Preddy Creek in Orange County in the James River (Middle) watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, CBOD, Total Suspended Solids, Total Kjeldahl Nitrogen, Total Residual Chlorine, *E. coli,* and Dissolved Oxygen. The facility shall monitor without limitation the following parameters: Total Nitrogen, Ammonia as N, Nitrate+Nitrite, Total Phosphorus, and Flow.

This facility is subject to the requirements of 9VAC25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Alison Thompson
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3834 E-mail: Alison.Thompson@deq.virginia.gov