ATTACHMENT A

Flow Frequency Analysis Memo

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Kilmarnock WWTP – VA0020788

TO: Laura Galli

FROM: Jennifer Palmore, P.G.

DATE: May 2, 2016
REVISED: July 22, 2016

COPIES: File

The Town of Kilmarnock's wastewater treatment plant discharges to an unnamed tributary of Indian Creek in Lancaster County. The outfall is located at rivermile 7-XDD000.13. Flow frequencies have been requested for use in developing effluent limitations for the VPDES permit.

At the discharge point, the receiving stream is shown as an intermittent stream on the USGS Fleets Bay 7-½' Quadrangle topographic map. The flow frequencies for intermittent streams are listed below:

Indian Creek, UT at Outfall 001:

1Q30 = 0.0 MGD	High Flow 1Q10 = 0.0 MGD
1Q10 = 0.0 MGD	High Flow 7Q10 = 0.0 MGD
7Q10 = 0.0 MGD	High Flow 30Q10 = 0.0 MGD
30Q10 = 0.0 MGD	HM = 0.0 MGD
30Q5 = 0.0 MGD	

Due to its intermittent nature, the receiving stream is considered a Tier 1 water. Effluent data should be used to characterize the stream during low flow conditions.

The unnamed tributary was not assessed for any designated uses in the 2014 305(b)/303(d) Water Quality Assessment Integrated Report; therefore, the stream is considered a Category 3A water ("No data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.")

The facility was addressed in the Indian, Tabbs, Dymer, and Antipoison Creeks Bacterial TMDL, which was approved by the EPA on 4/8/2009 and by the SWCB on 7/27/2009. The TMDL was subsequently modified on 4/12/2011. The WWTP received a fecal coliform wasteload allocation of 3.79E+09 MPN/day based on an effluent concentration of 200 MPN/100mL and a design flow of 0.5 MGD. In addition, it was assigned an enterococci wasteload allocation of 6.62E+08 cfu/day based on the geometric mean water quality standard of 35 cfu/100 ml and a design flow of 0.5 MGD.

The Chesapeake Bay TMDL, which was approved by the EPA on 12/29/2010, allocates loads for total nitrogen, total phosphorus, and total suspended solids to protect the dissolved oxygen and submerged aquatic vegetation acreage criteria in the Chesapeake Bay and its tidal tributaries. The Kilmarnock WWTP is considered a significant nutrient discharger in the Chesapeake Bay mesohaline estuary (CB5MH) and received the following wasteload allocations:

- 6,091 lbs/year of total nitrogen
- 457 lbs/year of total phosphorus
- 45,683.4 lbs/year of total suspended solids

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

ATTACHMENT B

Facility Flow Diagram

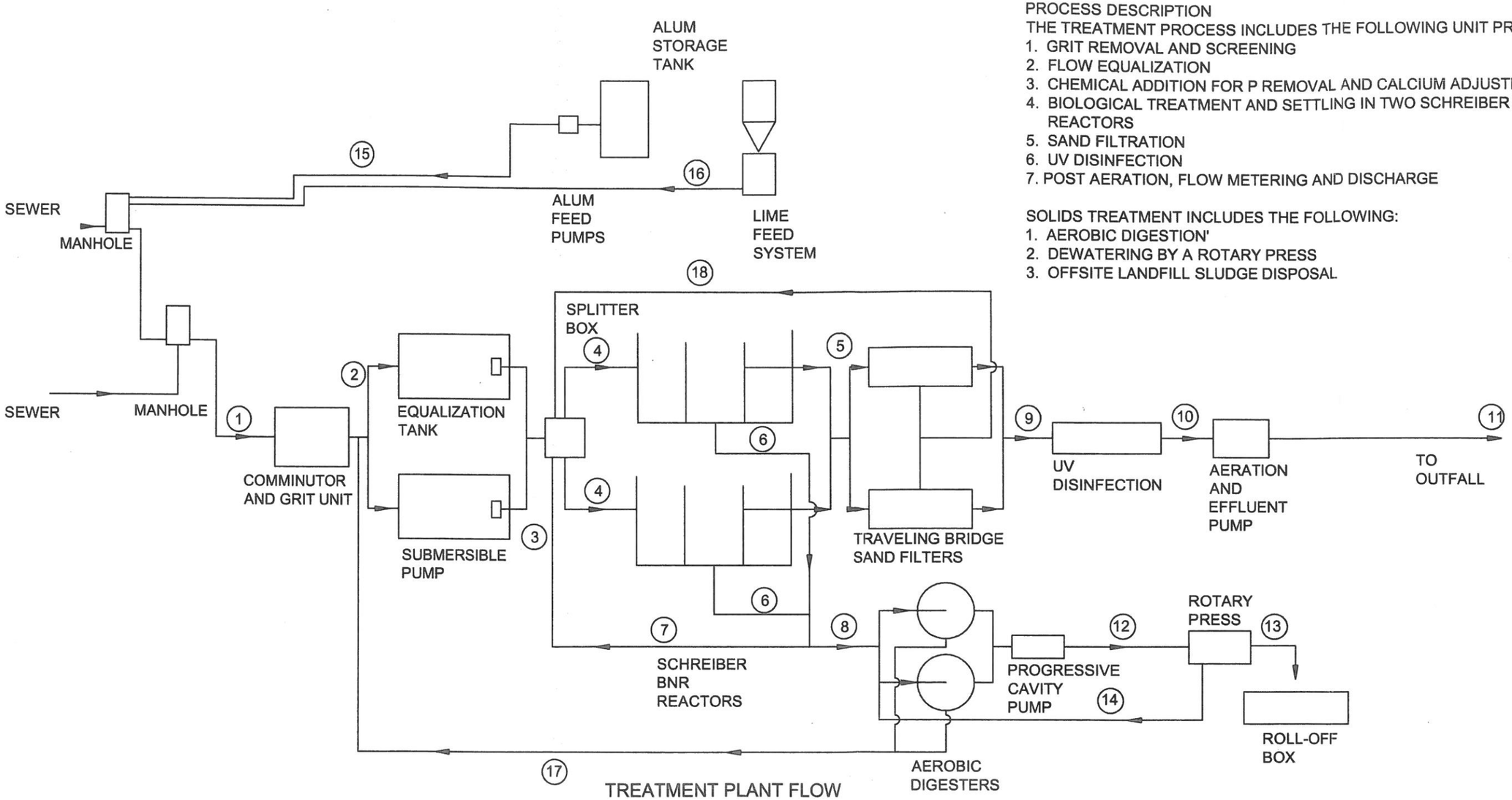
PROCESS DESCRIPTION

THE TREATMENT PROCESS INCLUDES THE FOLLOWING UNIT PROCESSES:

1. GRIT REMOVAL AND SCREENING
2. FLOW EQUALIZATION
3. CHEMICAL ADDITION FOR P REMOVAL AND CALCIUM ADJUSTMENT
4. BIOLOGICAL TREATMENT AND SETTLING IN TWO SCHREIBER BNR REACTORS
5. SAND FILTRATION
6. UV DISINFECTION
7. POST AERATION, FLOW METERING AND DISCHARGE

SOLIDS TREATMENT INCLUDES THE FOLLOWING:

1. AEROBIC DIGESTION'
2. DEWATERING BY A ROTARY PRESS
3. OFFSITE LANDFILL SLUDGE DISPOSAL



TREATMENT PLANT FLOW SCHEMATIC

STREAM NUMBER	1	2	3	4	5	6	7	8	9	10	11
DESCRIPTION	PLANT INFLUENT	EQ TANK INFLUENT	EQ TANK DISCHARGE	REACTOR FEED	FILTER FEED	UNDERFLOW	RECYCLE	SLUDGE WASTE	UV FEED	UV EFFLUENT	DISCHARGE
UNITS	MGD	MGD	MGD	MGD	MGD	MGD	MGD	GPM	MGD	MGD	MGD
FLOW	0.237	0.257	0.257	0.162	0.237	0.043	0.064	21200	0.237	0.237	0.237

STREAM NUMBER	12	13	14	15	16	17	18
DESCRIPTION	PRESS FEED	CAKE	FILTRATE	ALUM	LIME SOLUTION	AEROBIC DIGESTER DECANT	FILTER BACKWASH
UNITS	GPD	GPD	GPD	GPD	GPM	GPD	GPD
FLOW	5300	800	4500	10	20	20400	2000

WATER BALANCE
BASED ON MOST RECENT
YEAR OPERATING DATA

PROGRESS ENGINEERS, P.C.
868 GLOUCESTER ROAD, P.O. BOX 518
SALUDA, VIRGINIA 23149
804-758-4577
www.ProgressEngineers.com

KILMARNOCK WASTEWATER TREATMENT PLANT
VPDES PERMIT RENEWAL

TOWN OF KILMARNOCK
LANCASTER COUNTY, VIRGINIA

PROCESS SCEHMATIC

REVISIONS

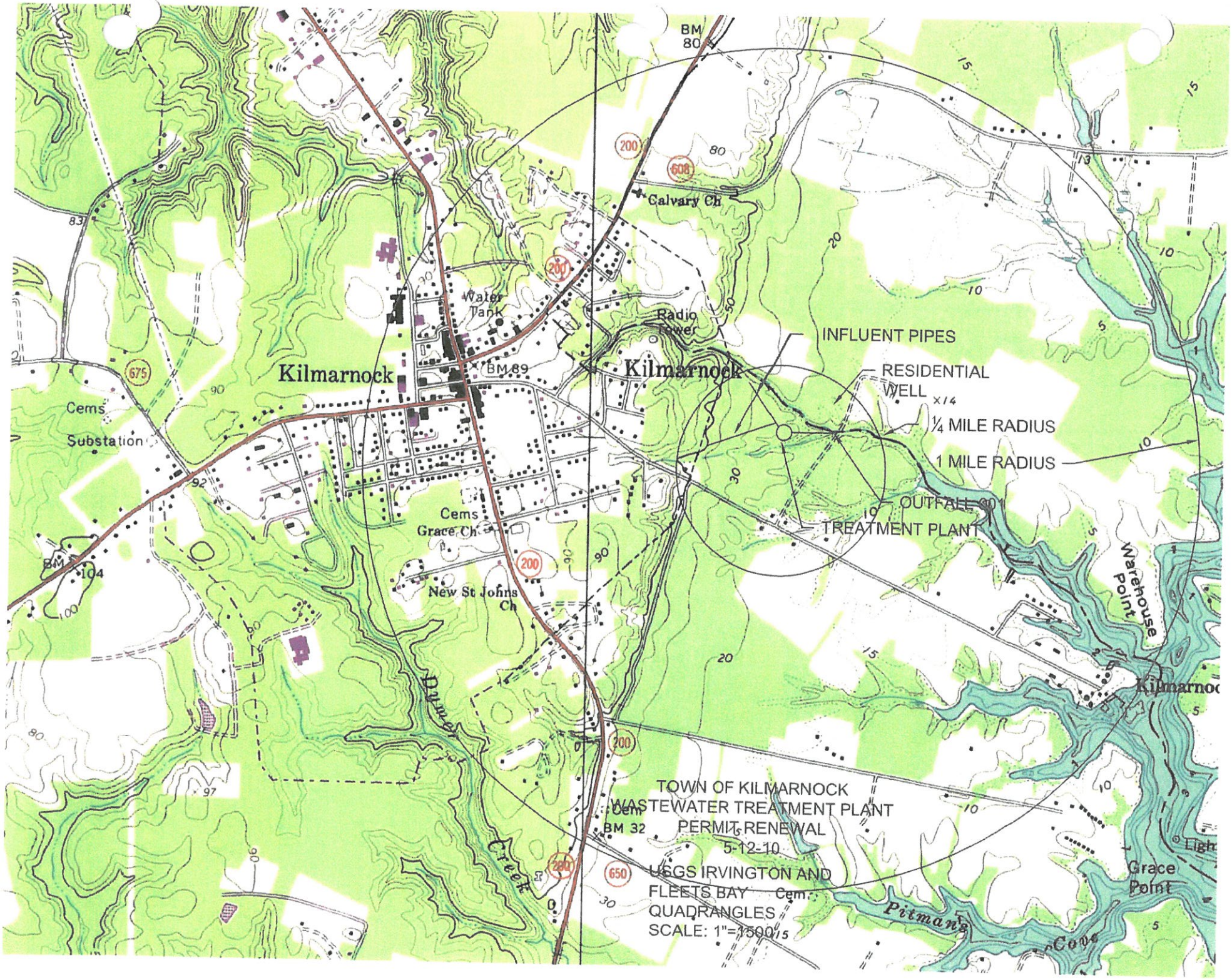
ENGINEER:	WER
DRAWN BY:	BLK
CHECKED BY:	WER
SCALE:	AS NOTED
DATE:	05/18/10
PROJECT:	2001-14
SHEET:	1 OF 1

BAR = 1" AT PLOT SCALE

STD: 0100-11

ATTACHMENT C

Topographic Map


INFLUENT PIPES
RESIDENTIAL WELL
¼ MILE RADIUS
1 MILE RADIUS
OUTFALL 001
TREATMENT PLANT
Kilmarnock
Kilmarnock
Calvary Ch
Water Tank
Radio Tower
BM 89
Cems
Substation
Cems
Grace Ch
New St Johns Ch
Warehouse Point
Grace Point
Pitmans Cove
Dumer Creek
BM 32
Cem
TOWN OF KILMARNOCK
WASTEWATER TREATMENT PLANT
PERMIT RENEWAL
5-12-10
USGS IRVINGTON AND
FLEETS BAY
QUADRANGLES
SCALE: 1"=1500'

ATTACHMENT D

Site Inspection Report

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
PIEDMONT REGIONAL OFFICE
4949-A Cox Road, Glen Allen, Virginia 23060
(804) 527-5020 Fax (804) 527-5106
www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Michael P. Murphy
Regional Director

May 16, 2016

Mr. Paul Jones
Superintendant of Utilities and Public Works
P.O. Box 1357
Kilmarnock, VA 22482

Transmitted electronically to: pjjones@kilmarnockva.com

RE: VA0020788 — VPDES Wastewater Discharge Permit - Kilmarnock WWTP - FY16 Inspection Reports

Dear Mr. Jones:

Enclosed is your copy of the technical, laboratory and recon reports for the inspections conducted at the above referenced facility on March 8, 2016 and December 9, 2015. General recommendations and Requests for Action Items are listed on page six of the technical report, pages 3-4 of the laboratory report and page two of the recon report. General recommendations do not require a response and are merely suggestions or comments. **Please respond in writing to the Requests for Action Items by June 16, 2016.**

I would like to thank you for the time and courtesy extended to us during the inspection. If you have any questions regarding these reports, please do not hesitate to contact me at azra.bilalagic@deq.virginia.gov or (804) 527-5011.

Sincerely,

Azra Bilalagic

Azra Bilalagic
Water Compliance Inspector

Attachments

Virginia Department of Environmental Quality

WASTEWATER FACILITY INSPECTION REPORT

FACILITY NAME and ADDRESS: Kilmarnock Wastewater Treatment Plant 817 Waverly Avenue Kilmarnock, VA 22482	**INSPECTION DATE:** 3/8/2016		
	INSPECTOR: Azra Bilalagic Azra Bilalagic, 3/22/16		
PERMIT No.: VA0020788	**REPORT DATE:** 5/16/2016		
TYPE OF FACILITY: ☑ Municipal ☑ Small Minor ☐ Industrial ☐ Federal	**TIME OF INSPECTION:**	Arrival 11:50 a.m.	Departure 2:05 p.m.
	TOTAL TIME SPENT (including prep & travel)	30 hours	
PHOTOGRAPHS: ☑ Yes ☐ No	**UNANNOUNCED INSPECTION?** ☐ Yes ☑ No		
REVIEWED BY / Date: Heather Weimer 3/28/2016; Heather A.H. Deihls; 5/13/16			
PRESENT DURING INSPECTION: Patrick Jones, Leonard Scott, Richard Lynn, Heather Weimer (DEQ)			

TECHNICAL INSPECTION

1. Has there been any new construction? • If so, were plans and specifications approved? Comments: 2010 – Installation of Mary Bell sewage pump station, associated gravity sewers and installation of discharge force main. 2011 – Digester aeration system replacement project consisted of removal of the existing aeration system and installation of diffused air distributors, three 240 cfs blowers and related equipment. The CTC and CTO were issued for both projects.	☑ Yes ☐ No
2. Is the Operations and Maintenance Manual approved and up-to-date? Comments: The O&M Manual was revised in November 2011.	☑ Yes ☐ No
3. Are the Permit and/or Operation and Maintenance Manual specified licensed operator being met? Comments: One Class II Licensed Operator required. The plant is staffed with one Class II, one Class III and one OIT.	☑ Yes ☐ No
4. Are the Permit and/or Operation and Maintenance Manual specified operator staffing requirements being met? Comments: The plant is staffed 9 hours per day Monday through Friday, and 4 hours per day on Saturday and Sunday.	☑ Yes ☐ No
5. Is there an established and adequate program for training personnel? Comments: Sacramento and DEQ manuals, OJT, DEQ classes, Short Courses at Virginia Tech	☑ Yes ☐ No
6. Are preventive maintenance task schedules being met? Comments:	☑ Yes ☐ No
7. Does the plant experience any organic or hydraulic overloading? Comments:	☐ Yes ☑ No
8. Has there been any bypassing or overflows since the last inspection? Comments:	☐ Yes ☑ No
9. Is the standby generator (including power transfer switch) operational and exercised regularly? Comments: Tested weekly under load. Generator automatically comes on every Tuesday for 30 minutes and includes power transfer switch.	☑ Yes ☐ No
10. When were the cross connection control devices last tested on the potable water serviced? Comments: 8/21/2015.	

VA DEQ Wastewater Facility Inspection Report

Permit #	VA0020788

11. Is the plant alarm system operational and tested regularly? Comments: Telemetry alarm system monitors power failure and/or loss of readiness of the generator starter system. Audio/visual alarm system monitors equalization basin pump failure, high water; blower failure for activated sludge basins, sludge holding tanks, and post aeration unit; failure of RAS pumps, failure of filter's traveling bridge drive and backwash pump and low UV intensity and lamp failure. Telemetry is to the operators and Sheriff's Office.	☑ Yes ☐ No
12. Is sludge disposed of in accordance with the approved sludge management plan? Comments: Existing and proposed sludge management consists of removing the waste sludge from the process flow and dewatering it utilizing a rotary fan press. Waste Management, Inc. has been contracted to haul the dewatered sludge to the Middle Peninsula Landfill and Recycling Facility (DEQ Solid Waste facility Permit No. 572) for off-site disposal.	☑ Yes ☐ No
13. Is septage received? • If so, is septage loading controlled, and are appropriate records maintained? Comments:	☐ Yes ☑ No
14. Are all plant records (operational logs, equipment maintenance, industrial waste contributors, sampling and testing) available for review and are records adequate? Comments:	☑ Yes ☐ No

15. Which of the following records does the plant maintain?

☑ Operational logs ☑ Instrument maintenance & calibration

☑ Mechanical equipment maintenance ☐ Industrial Waste Contribution (Municipal facilities)

Comments:

16. What does the operational log contain?

☑ Visual observations ☑ Flow Measurement ☑ Laboratory results ☐ Process adjustments

☐ Control calculations ☑ Other (specify) Maintenance performed at the plant.

Comments: Flow measurements and laboratory results maintained separately

17. What do the mechanical equipment records contain?

☑ As built plans and specs ☑ Manufacturers instructions ☑ Lubrication schedules

☐ Spare parts inventory ☑ Equipment/parts suppliers

☐ Other (specify)

Comments:

18. What do the industrial waste contribution records contain (Municipal only)?

☐ Waste characteristics ☐ Impact on plant ☐ Locations and discharge types

☐ Other (specify)

Comments: N/A

19. Which of the following records are kept at the plant and available to personnel?

☑ Equipment maintenance records ☑ Operational log ☐ Industrial contributor records

☑ Instrumentation records ☑ Sampling and testing records

Comments:

20. List records not normally available to plant personnel and their location:

Comments: N/A

21. Are the records maintained for the required time period (three or five years)? Comments:	☑ Yes ☐ No

VA DEQ Wastewater Facility Inspection Report

Permit #	VA0020788

UNIT PROCESS EVALUATION SUMMARY SHEET

UNIT PROCESS	APPLICABLE	PROBLEMS*	COMMENTS
Sewage Pumping	Y		*7 remote pumping stations.*
Flow Measurement (Influent)			
Screening/Comminution	Y		*Fine screening unit not operational.*
Grit Removal	Y		*PistaGrit degritter*
Oil/Water Separator			
Flow Equalization	Y		
Ponds/Lagoons			
Imhoff Tank			
Primary Sedimentation			
Trickling Filter			
Septic Tank and Sand Filter			
Rotating Biological Contactor			
Activated Sludge Aeration	Y	1	*One of the Schreiber aeration tanks not operational.*
Biological Nutrient Removal			
Sequencing Batch Reactor			
Secondary Sedimentation	Y		*Clarifiers form inner portion of the two Schreiber units*
Flocculation			
Tertiary Sedimentation			
Filtration			
Micro-Screening			
Activated Carbon Adsorption			
Chlorination			
Dechlorination			
Ozonation			
Ultraviolet Disinfection	Y		*48 lamps (3 banks @ 16 lamps each). All bulbs replaced in September 2015.*
Post Aeration	Y		*Dedicated blower provides post aeration.*
Flow Measurement (Effluent)	Y		*90 deg V-notch with sonic sensor.*
Land Application (Effluent)			
Plant Outfall	Y		
Sludge Pumping	Y		
Flotation Thickening (DAF)			
Gravity Thickening			
Aerobic Digestion	Y		*Two digesters*
Anaerobic Digestion			
Lime Stabilization			
Centrifugation			
Sludge Press	Y		*Rotary fan press*
Vacuum Filtration			
Drying Beds			
Thermal Treatment			
Incineration			
Composting			
Land Application (Sludge)			

* Problem Codes

1. Unit Needs Attention
2. Abnormal Influent/Effluent
3. Evidence of Equipment Failure
4. Unapproved Modification or Temporary Repair
5. Evidence of Process Upset
6. Other (explain in comments)

VA DEQ Wastewater Facility Inspection Report

Permit #	VA0020788

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

Influent sewage pumping – There are seven pump stations in the sewage collection systems (Norris Road, School Street, Dymer Creek, Harvey Lane, Hills Quarter, Grace Hill and Springwood) that serve the town. These pump stations were not inspected. Each pump station is equipped with two pumps. Each pump is equipped with a grease seal unit, a pressure gauge on the discharge pipe and a combination vacuum-pressure gauge on the suction pipe. Telemetry reports to the operators and Sheriff's Office. All pump stations have a site generator and automatic transfer switch.

Fine screening – This unit has been out of service for a week due to repairs. When the unit is used the raw sewage passes through the Helisieve fine screening unit located in the main channel of the influent screening. The Helisieve unit is used to screen, convey and dewater screenings. The dewatered screenings are discharged into a receptacle for disposal. The volume of removed screenings is ~5 gallons per day. The screenings are usually limed. Since the Helisive fine screening unit was out of service, a manually cleaned bar screen located in the bypass channel was used for the removal of large and stringy material. On 3/17/2016 Mr. Jones notified DEQ that the fine screening unit was back in service. Some screenings were observed on the ground next to the removed fine screening unit. During the inspection, the operator indicated that the screenings will be removed.

Grit removal – "PistaGrit" degritter pumps into wheelbarrow (located on a concrete pad) equipped with a screen that retains solids and allows wastewater to be returned for further treatment. The recovered grit is transferred to a dumpster. The pad where wheelbarrow is located has a small curb to help confine water draining from wheelbarrow screen and direct this wastewater back into the plant. At the time of inspection, it was noted that the curb contains a drainage hole for stormwater. The grit collection equipment operates every four hours (07:00, 11:00, and 15:00 hrs). The Pista Grit system collects grit in a round hopper about 6 feet in diameter and 6 feet deep. The grit paddle, which is driven by a ¾ hsp motor, is located in the bottom of the hopper and rotates in a clockwise motion. The influent that enters the chamber is rotated at a speed of one foot per second. The grit channel is cleaned once per year.

Flow equalization – This unit precedes the aeration tanks. Two 136,000 gallon equalization tanks are present at the plant. The tanks have a high-level overflow pipe that connects the two basins if necessary as well as recirculation pumps. The former sludge holding tanks (at head of each equalization tank) are used for digester supernatant (one tank) and for waste sludge sump (other tank). The supernatant from the aerobic digesters is sent to the flow equalization tanks. Mixing and pre-aeration is provided continuously by pump action. One pump initiated by a level sensor is available to pump the wastewater to the aeration tanks. A high level alarm is present at this unit. Wastewater appeared brown colored and no strong odor was noted. At the time of inspection, one of the equalization basins (Basin I) was temporary used to store mixed liquor from one of the Schreiber units that was under maintenance.

Aeration tanks (Schreiber Counter Current Aeration System) – A splitter box precedes the aeration units where the return activated sludge enters via a 90˚V-Notch weir and combines with the wastewater from the flow equalization basins. There are two Schreiber counter current aeration basins that are capable of holding 254,000 gallons each. The bridge for each basin has two diffuser headers mounted to the bottom of the Schreiber bridge and extended near the bottom of the tank. The tanks are designed to remove ammonia, nitrogen and phosphorous. Aeration is provided by three centrifugal blowers operated by a dissolved oxygen probe located in each basin. Dissolved oxygen is monitored and aeration is provided five minutes after D.O. reaches 0.5 mg/L. This allows the basin to go anaerobic temporarily. Reintroduction of the oxygen aids to the phosphorous removal. As the dissolved oxygen reaches 1.5 mg/L the blower is shut off in five minutes. At the time of inspection, Unit B was offline due to maintenance. On 3/23/2016 Mr. Jones notified DEQ that both Schreiber units are operating. An excessive and uneven aeration was noted in the Schreiber Unit A causing very turbulent flow within the unit. This did not cause splashing of the wastewater outside of the tanks. The operator noted that the aeration will be adjusted. Wastewater appeared medium brown colored with earthy odor. On 4/5/2016, the operator notified the inspector that all of the diffusers in the Schreiber Unit A are going to be replaced in April once the new diffusers are received. The operator reported that the new diffusers were shipped on 4/1/2016.

Clarifiers – "Integral" clarifiers are the inner portion of the center portion of the Schreiber units. The wastewater flows through a 10-inch line that connects the aeration tank to the splitter box. From here the effluent from both tanks mixes together and flows to either clarifier. The sides of the clarifiers are cleaned every two weeks in summer and once per month during winter. Floatable solids including duck weed are manually raked as needed. The facility wastes once per day, approximately 5,000-10,000 gallons at a time. Two pumps are used to send the waste sludge to the aerobic digesters. The return activated sludge is sent to the splitter box, where it mixes with the influent prior to being pumped back to the aeration tanks. Wastewater leaving the clarifiers appeared clear. Some algal growth was noted on the clarifier walls, weirs and baffle. Additionally, minor floating solids, duckweed and minor screenings were noted in the clarifier.

VA DEQ Wastewater Facility Inspection Report

Permit #	VA0020788

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

Filtration – The wastewater from the clarifiers is sent to the traveling bridge filters through a 14" line. The filter media consists of 6 inches of anthracite, 10 inches of sand, 3 inches of gravel and perforated under drain. A weir located at the rear of the filter keeps the water level above the media level at all times. When the media has trapped a large amount of particles, the water level rises and triggers the sensors on the traveling bridge that activate the backwash process. The backwash water is sent to the equalization mixing basin. The backwash pump runs for approximately two minutes. The capacity of the filters is 250,000 gpd. Each filter is equipped with an overflow weir.

Ultraviolet disinfection – The UV system consists of three banks of lamps with four racks of four lamps in each bank (total of 48 lamps). All three banks were operated in series. Each bank is designed to treat 1,000,000 gallons of wastewater. The banks are cleaned once every three months with nitric acid solution. The unit is ~24 feet in length, and 1 foot by 1 foot (water depth) for approximate area of 24 cubic feet. All bulbs and the majority of wiring were replaced in September 2015.

Flow meter – The flow is measured with the ISCO Sonar flow meter. This unit runs continuously and has a chart recorder built in that also sends a signal to a 24-hour circular chart recorder located in the plant lab. The flow meter measures the plant effluent prior to the 90° V-notch weir. The most recent calibration was in July 2015.

Post aeration – The post aeration unit is located below the V-notch weir. A dedicated blower provides air to one coarse bubble air diffuser. The blower runs continuously.

Outfall – The effluent appeared very clear. No environmental impacts were noted in the receiving stream and no difference between upstream and downstream conditions was observed.

Aerobic digestion – Two digesters are present at the plant and used in series. Each digester has a storage capacity of 65,000 gallons. Three blowers provide continuous air to the coarse bubble diffusers. Sludge is sent to the digester daily and once every two weeks to the rotary fan press. The supernatant is sent once per week to the head of the plant. The operator reported that once the digester has been filled to the high water mark (about 2-3 inches below the supernatant decant pipe), the blowers are turned off, and the sludge is allowed time to settle. After the sludge has settled the decant pipe is lowered and supernatant is returned to the head works. Once the decanting is complete, a portion of digester A sludge is sent to digester B.

Rotary Fan Press – Two pumps pump the digested sludge to the rotary fan press. Filtrate from the press is sent to the head of the plant. The amount of cake produced is 10 tons every two weeks. Polymers are added for sludge thickening.

Material Storage – Alum and lime utilized for phosphorus removal and pH adjustment are stored under roof in the chemical feed building. Polymers utilized for sludge thickening and dewatering are stored in the rotary fan press building. Alum is pumped into the return sludge box which returns into the clarifier. Lime is added to the wastewater for pH adjustment. The lime feeder is located in the Chemical feed building. The lime is added into the hopper which feeds from the hopper to the mixer where the water and lime form the slurry.

VA DEQ Wastewater Facility Inspection Report

Permit #	VA0020788

EFFLUENT FIELD DATA: Not obtained

Flow	MGD	**Dissolved Oxygen**	mg/L	**TRC (Contact Tank)**	mg/L
pH	S.U.	**Temperature**	˚C	**TRC (Final Effluent)**	mg/L

Was a Sampling Inspection conducted? ☐ Yes (see Sampling Inspection Report) ☑ No

CONDITION OF OUTFALL AND EFFLUENT CHARACTERISTICS:

1. Type of outfall: ☑ Shore based ☐ Submerged Diffuser? ☐ Yes ☑ No
2. Are the outfall and supporting structures in good condition? ☑ Yes ☐ No
3. Final Effluent (evidence of following problems): ☐ Sludge bar ☐ Grease ☐ Turbid effluent ☐ Visible foam ☐ Unusual color ☐ Oil sheen
4. Is there a visible effluent plume in the receiving stream? ☐ Yes ☑ No
5. Receiving stream: ☑ No observed problems ☐ Indication of problems (explain below)

   Comments: Plant effluent was very clear at time of inspection. The substrate of the receiving stream upstream from the outfall appeared orange colored with some algal growth.

REQUEST FOR ACTION ITEMS:

1. None.

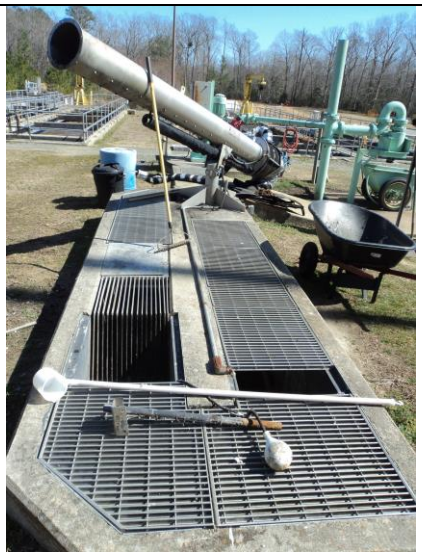
NOTES and COMMENTS:

1. Please note, that the notch in the concrete curb may allow collected wastewater to spill onto the ground. Please be sure to keep this area free of wastewater spills and leaks. Any wastewater that leaves the curbed area should properly cleaned, limed, and reported to DEQ.
2. Please remove the algal growth observed in the Schreiber units. Please ensure routine maintenance is performed as needed.
3. Duckweed noted in the Schreiber units does not appear to be adversely affecting plant operations. Please continue to remove the duckweed as needed.
4. Please continue with plans to replace diffusers and notify DEQ if replacement plans are postponed.
5. Please remove the minor screenings observed on the ground during the repair of the fine screening unit.

VA DEQ Wastewater Facility Inspection Report

Facility No. VA0020788
Digital Photographs taken March 8, 2016

Photograph 1: Screenings and grit are placed in a dumpster



Photograph 2: Fine screening unit not in operation

Photograph 3: Manual bar screen temporary used

Photograph 4: PistaGrit degritter

Photograph 5: Grit is pumped to a wheelbarrow (note the opening in the curbed area that allows wastewater to drain on the ground)

Photograph 6: Equalization basin II

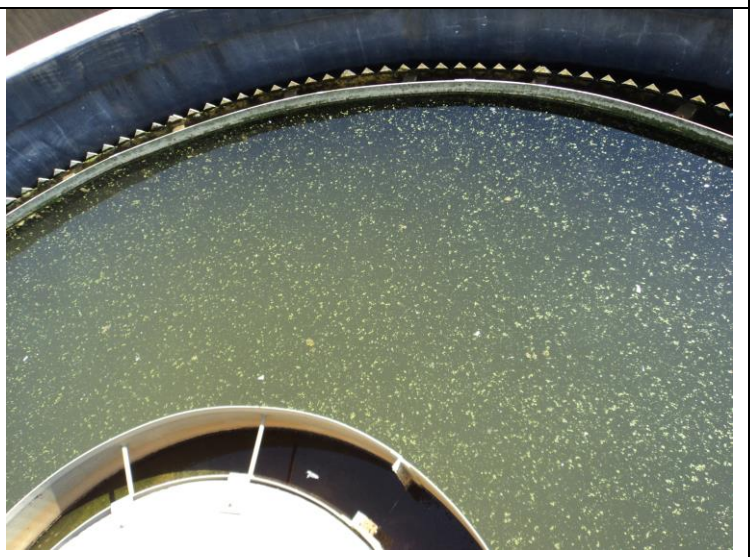
VA DEQ Wastewater Facility Inspection Report

Facility No. VA0020788
Digital Photographs taken March 8, 2016

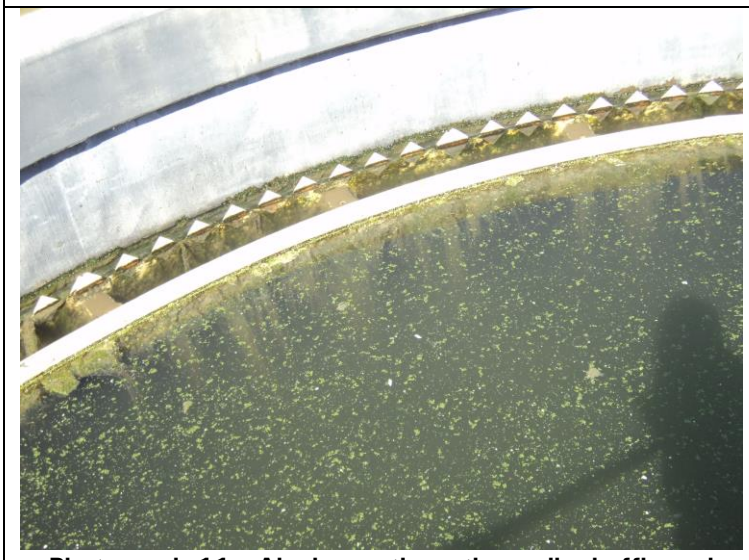
Photograph 7: Equalization basin I (temporary used to store mixed liquor from the aeration tank that was out of service)

Photograph 8: Schreiber aeration tank out of service

Photograph 9: Schreiber aeration tank in operation



Photograph 10: Clarifier within the Schreiber unit (note the floating solids and duckweed)



Photograph 11: Algal growth on the walls, baffle and weirs of the clarifier depicted in photograph 10

Photograph 12: Multimedia filters

VA DEQ Wastewater Facility Inspection Report

Facility No. VA0020788
Digital Photographs taken March 8, 2016

Photograph 13: UV disinfection unit

Photograph 14: V-notch weir and post aeration unit

Photograph 15: Very clear effluent at post aeration

Photograph 16: Outfall 001

Photograph 17: No environmental impacts were noted in the receiving stream

Photograph 18: Aerobic digester A

VA DEQ Wastewater Facility Inspection Report

Facility No. VA0020788
Digital Photographs taken March 8, 2016

Photograph 19: Lime feeding room

Photograph 20: Rotary fan press

Photograph 15: Conveyor moves dewatered sludge to dumpster

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
LABORATORY INSPECTION REPORT

11/2014

PERMIT #:	INSPECTION DATE:	PREVIOUS INSP. DATE:	PREVIOUS EVALUATION:	TIME SPENT:
VA0020788	March 8, 2016	August 26, 2009	Deficiencies	30 hours w/ travel & report

NAME/ADDRESS OF FACILITY:	FACILITY CLASS:	FACILITY TYPE:	UNANNOUNCED INSPECTION?
Kilmarnock WWTP 817 Waverly Avenue Kilmarnock, VA 22482	( ) MAJOR (x) MINOR ( ) MINOR (Small) ( ) VPA	(x) MUNICIPAL ( ) INDUSTRIAL ( ) FEDERAL	( ) YES (x) NO **FFY-SCHEDULED INSPECTION?** (x) YES ( ) NO

INSPECTOR(S):	REVIEWER(S):	PRESENT AT INSPECTION:
Azra Bilalagic Azra Bilalagic ; 3/22/16	Heather Weimer 3/28/16 Heather A.H. Deihls ;4/11/16	**Paul Jones, Leonard Scott, Richard Lynn, Heather Weimer (DEQ)**

LABORATORY EVALUATION	DEFICIENCIES? Yes	DEFICIENCIES? No
LABORATORY RECORDS	**X**	
GENERAL SAMPLING AND ANALYSIS		**X**
pH PROCEDURE	**X**	
DISSOLVED OXYGEN PROCEDURES	**X**	

VELAP CERTIFICATION (on site Environmental Laboratory)	Yes	No
Does the laboratory have VELAP certification (interim or final)?		X
– Document the laboratory's VELAP laboratory number:		
– Document the effective date of the VELAP certification:		
– Document the expiration date of the VELAP certification:		
– List the certified parameters:		

VELAP ACCREDITATION (Commercial Environmental Laboratory)			Yes	No
IS A VELAP ACCREDITED LAB USED FOR OTHER PERMIT REQUIRED ANALYSES? VELAP#, LAB NAME, ADDRESS and LIST PARAMETERS:			X	
VELAP #	LAB NAME	PARAMETERS		
460025	Pace Analytical Services, Inc.	TSS, Fecal Coliform, Ammonia, TKN, E. Coli, Free Cyanide, Total Hardness, Enterococci, CBOD5, Total Recoverable Zinc, Total Recoverable Copper		
IF PERMIT REQUIRED SAMPLE ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE?			X	

COPIES: ( ) DEQ - RO; (X) Owner, ( ) Other:

PERMIT #: VA0020788

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE	X	CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
X	SAMPLE LOCATION	X	TEST METHOD		INSTRUMENT MAINTENANCE
				X	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

	SAMPLING SCHEDULES		CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS (or LOG BOOK) INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? LIST MONTH(S) REVIEWED: January 2016 DMR and associated monitoring data		X	
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		
DOES CHAIN OF CUSTODY DOCUMENT PROPER SAMPLE PRESERVATION WAS MET?	Sample preservation not indicated on the COC		
WHEN THE CERTIFICATE OF ANALYSIS CONTAINS FLAGGED DATA IS THE 'FLAG' REPORTED ON THE DMR?		X	

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATIONS ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE PERMIT REQUIRED SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
ARE EFFLUENT SAMPLES REPRESENTATIVE OF THE MONITORED ACTIVITY?	X		
ARE PERMIT REQUIRED COMPOSITE SAMPLES FLOW PROPORTIONAL? **NOTE:** Equal volume composite aliquots are acceptable ***if the instantaneous flow is within ± 10% of the daily average flow during the monitoring period***. Some permits specify how the composite is to be taken (e.g., 5G/8HC).	X		
IS COLLECTION SAMPLE EQUIPMENT ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		

DEPARTMENT OF ENVIRONMENTAL QUALITY – WATER DIVISION
LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME:	**Kilmarnock WWTP**	Permit #:	**VA0020788**	INSPECTION DATE:	**March 8, 2016**
LABORATORY EVALUATION			No required actions at this time		
		X	**REQUIRED CORRECTIVE ACTION(s) IDENTIFIED**		

SUMMARY of REQUEST FOR CORRECTIVE ACTION

Lab Records

Laboratory Records section deficiency and required action:

1. The inspector reviewed the DMR and associated monitoring data for the August 2015 monitoring period. The following deficiencies were noted:

   - Several Certificates of Analyses contain flagged data for the $CBOD_5$, Fecal Coliform and TKN samples. The flag was not reported on the January 2016 DMR.

   $CBOD_5$:
   - The January 2016 DMR listed a $CBOD_5$ monthly average concentration of <QL. The inspector calculated the monthly average concentration to be 0.57 MG/L.
   - The January 2016 DMR listed a $CBOD_5$ monthly average loading of 1.32 KG/D. The inspector calculated the monthly average loading to be 0.39 KG/D.
   - The January 2016 DMR listed a $CBOD_5$ maximum weekly average loading of 2.08 KG/D. The inspector calculated the average weekly maximum loading to be 1.56 KG/D.

   TKN:
   - The January 2016 DMR listed a TKN monthly average concentration of <QL. The inspector calculated the monthly average concentration to be 0.48 MG/L.
   - The January 2016 DMR listed a TKN monthly average loading of 690 G/D. The inspector calculated the monthly average loading to be 606 G/D.

   TSS:
   - The January 2016 DMR listed a TSS monthly average loading of 0.41 KG/D. The inspector calculated the monthly average loading to be <QL.
   - The January 2016 DMR listed a TSS maximum weekly average loading of 0.41 KG/D. The inspector calculated the average weekly maximum loading to be <QL.

   Ammonia:
   - The January 2016 DMR listed an Ammonia monthly average concentration of <QL. The inspector calculated the monthly average concentration to be 0.13 MG/L.

   Total Phosphorous:
   - The frequency of analysis is reported as 1/M. The Certificate of Analysis indicates that Total Phosphorous was analyzed on 1/13/16 and 1/17/16. Therefore the frequency of analysis on the January 2016 DMR should be reported as 2/M.

   These calculation errors did not impact the permit limit compliance. Please revise the January 2016 DMR and resubmit it to DEQ as part of the response to this inspection report.

2. Sample preservation methods should be indicated on the Chain of Custody form.

General Sampling and Analysis

General Sampling and Analysis section deficiency and required action:

1. None.

pH Analysis

pH deficiency and required action:

1. The temperature of the buffers used for calibration is not recorded on the bench sheet. The pH meter must be calibrated prior to each use using three buffers all of which are at the same temperature. Calibration readings and temperature of each buffer along with date and time should be recorded.

2. Please remove the minor green residue observed on the pH electrode and ensure the electrode is kept in good condition.

3. The operator reported that a pH replicate sample is analyzed and that the sample result is reported on the DMR. A written procedure indicating which result (sample or replicate) will be reported on the DMR was not available. Please ensure the written procedure is maintained and followed.

D.O. Analysis

1. As a reminder, the D.O. calibration results (mg/L) should be within ± 4% of the barometric (or altitude) corrected oxygen saturated water value

D.O. deficiency and required action:

2. It was reported that the D.O. sampling is performed in-situ and the facility records only analysis time on the bench sheet. Please indicate on the bench sheet that D.O. is measured in-situ.

3. Please update the D.O. benchsheets to indicate the method of analysis for D.O. the current benchsheet indicates "4500-O G". Citing the edition of Standard Methods is no longer applicable; now the citation must include the "**date tag**" in which the method was approved. The current field parameter method citations are:

Parameter	SM 21 ed.	SM 22nd ed. or Online ed.
Dissolved Oxygen	SM4500-O G -2001	SM4500-O G -2011

4. A certificate of operator competence or initial demonstration of capability must be available for each analyst performing D.O. analysis. The permittee may wish to use the attached documents to perform and record the IDC.

5. As discussed on site, the DO meter thermistor needs to be verified annually against a NIST traceable reference thermometer. Verification measurement should be within +/- 1 °C. Documentation of this verification must be maintained.

OTHER – Comments or Observations

1. None.

ANALYST:	**Paul Jones**	VPDES NO	**VA0020788**

Meter: Thermo Scientific Orion Star A121 Parameter: Hydrogen Ion (pH)
Method: Electrometric
3/2015

METHOD OF ANALYSIS:

	21st Edition of Standard Methods (SM 21) – 4500-H^+ B-2000 (SM 21 pH)
X	22nd Edition of Standard Methods (SM 22), or Online Editions of Standard Methods – 4500-H^+ B-2011 (SM 22 pH)

	pH is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing this analysis? **NOTE**: Analyze 4 samples of known pH; you may use an external source of buffers or other known standards (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be +/- 0.2 SU of the known concentration of the sample or within "Acceptable Range" specified by the PT provider. [SM 1020 B.1] **NOTE: The same pH buffer [values] used for calibration of the instrument can be used as LCS if from a different source or different lot.**	**X**	
2)	**IF** a replicate sample is analyzed is there a written procedure for which result will be reported on DMR (Sample or Replicate) and is this procedure being followed? [DEQ – based on EPA Good Laboratory Practices Standards]		**X**
3)	Is a Laboratory Control Sample (LCS) tested at least annually and are results within acceptance criteria? [SM 21 B.2 or SM 22 1020 B.3.] **NOTE:** LCS should be a purchased Proficiency Test (PT) sample or a different buffer other than ones used for calibration of the meter [with a ±0.2 SU acceptance range or within "Acceptable Range" specified by the PT provider].. **NOTE: The same pH buffer [values] used for calibration of the instrument can be used as LCS if from a different source or different lot.**	**X**	
4)	Is the electrode in good condition (no chloride precipitate, scratches, deterioration, etc.)? [SM 21 pH or SM 22 pH 2.b./c. and 5.b.]		**X**
5)	Is electrode storage solution in accordance with manufacturer's instructions? [SM 21 pH or SM 22 pH 4.a. and Mfr.]	**X**	
6)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [SM 21 pH or SM 22 pH 4.a.] **NOTE**: Start with Buffer 7 unless manufacturer's instructions state otherwise. [**NOTE:** If meter is not capable of 3 buffer calibration use 2 buffers bracketing the expected sample pH and then measure a 3rd buffer (the measurement value recorded must be ±0.1 SU), and then reread and record value of buffer 7 to ensure ±0.1 SU.]	**X**	
7)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Verification measurement should be within +/- 0.1 SU. [SM 21 1020 B 10.c. or SM 22 1020 B 11.c.]	**X**	
8)	Is calibration verification measurement repeated with every 10 samples and at the end of a series of samples? Verification measurement should be within +/- 0.1 SU. [SM 21 pH or SM 22 pH 4020 B 2.b.] **NOTE:** Not applicable if pH meter is calibrated before taking any measurement (e.g., if operator monitors daily pH at more than one facility and calibrates before each measurement).	**N/A**	
9)	Do the buffer solutions appear to be free of contamination or growths? [SM 21 pH or SM 22 pH 3.a.]	**X**	
10)	Are buffer solutions within the listed shelf-life or have they been prepared within the last 4 weeks? [SM 21 pH or SM 22 pH 3.a.]	**X**	
11)	Is the cap or sleeve covering the access hole on the reference electrode removed when	**X**	

	measuring pH? [Mfr.]		
12)	Is sample analyzed within 15 minutes of collections? [40 CFR Part 136]	X	
13)	Is the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinsing solution.)? [SM 21 pH or SM 22 pH 4.a and 4.b]	X	
14)	Is the sample stirred gently at a constant speed during measurement? [SM 21 pH or SM 22 pH 4.b.]	X	
15)	Does the meter hold a steady reading after reaching equilibrium? [4.b.]	X	

PROBLEMS: (2) When a duplicate sample is analyzed, the facility reports the results from the first sample. A written procedure for which result will be reported on DMR (Sample or Replicate) is not maintained. (4) A minor green residue was noted around the electrode.

ANALYST:	**Paul Jones**	VPDES NO	**VA0020788**

Meter: YSI 50B

Parameter: Dissolved Oxygen
Method: Membrane Electrode
11/2014

METHOD OF ANALYSIS: (*) Not ascertained

	21st Edition of Standard Methods (SM 21) – 4500-O G-2001 (SM 21 DO)
	22nd of Standard Methods, or Online Editions of Standard Methods (SM 22) – 4500-O G-2011 (SM 22 DO)

	Dissolved Oxygen (D.O.) is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]	***Y***	***N***
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing this analysis? **NOTE**: Analyze 4 samples of air-saturated water. Recovery for each of the 4 samples must be +/- 4% of the calculated oxygen saturation for the altitude/barometric pressure and temperature of the samples. {Alternatively analyze 4 samples of water of known concentration (verified by iodometric titration procedure SM 21 or SM 22 4500-O C). Instrument measurements must agree within +/-0.1 mg/L of verified concentration.} [SM 21 or SM 22 1020 B.1 and 4020 B.1]		**X**
2)	Are calibration results (mg/L) within ± 4% of the barometric (or altitude) corrected oxygen saturated water value? [SM 21 B.2 or SM 22 1020 B.2.]	**New Guidance**	
3)	If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation and is the sample bottle allowed to overflow several times its volume? [SM 21 DO or SM 22 B 3.]	**In situ**	
4)	Are meter and electrode operable and providing consistent readings? [SM 21 DO G 2. or SM 22 DO G 2.]	**X**	
5)	Is membrane in good condition without trapped air bubbles? **NOTE: No air bubbles ≥ 1/8 inch (total area of all bubbles).** [SM 21 DO G 3.b. or SM 22 DO G 3.b.]	**X**	
6)	Is correct filling solution used in electrode? [Mfr.]	**X**	
7	Are water droplets shaken off the membrane prior to calibration? [Mfr.]	**X**	
8)	Is meter calibrated before use or at least daily? [Mfr. & SM 21 1020 B 10.a. or SM 22 1020 B 11.a]	**X**	
9)	Is calibration procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
10)	Is sample stirred during analysis (or is there sufficient flow across probe's membrane surface)? [SM 21 DO or SM 22 DO G 3.b. and Mfr.]	**In situ**	
11)	Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
12)	Is meter stabilized before reading D.O.? [Mfr.]	**X**	
13)	Is electrode stored according to manufacturer's instructions? [Mfr.]	**X**	

PROBLEMS: (*) The benchsheet indicates "4500-O G". The citation must include the "date tag" in which the method was approved. (1) The IDC for DO analysis was not available for review.

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
EQUIPMENT TEMPERATURE LOG/THERMOMETER VERIFICATION CHECK SHEET
11/2014

FACILITY NAME:	Kilmarnock WWTP	PERMIT NO:	VA0020788	DATE:	3/8/2016

EQUIPMENT	Preservation Range	In Range?		Inspector Reading	Checked & Logged Daily?		Correct Increment?		ANNUAL THERMOMETER VERIFICATION				
									Is the NIST / NIST-Traceable Reference Thermometer within the manufacturer's expiration date or recertified yearly?				Yes/No No
									DATE CHECKED	MARKED		OFFSET VALUE1 (Correction)	INSPECT TEMP
		Yes	No	°C	Yes	No	Yes	No		Yes	No	°C	°C
SAMPLE REFRIGERATOR	1-6° C	**X**		**3.6 °C**	**X**		**X**		**Purchased on 7/20/2015**				
AUTO SAMPLER	1-6° C	**X**		**5.6 °C**	**X**		**X**		**Purchased on 7/20/2015**				
pH METER	± 1° C								**Purchased in July 2015**				
D.O. METER	± 1° C								**Not checked****				
THERMOMETER-(EFFLUENT)	± 1° C												

COMMENTS: * The facility replaces the thermometer each year. ** The NIST verification of the D.O. thermistor was not performed.

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1 Offset Value tolerances (reference **NIST 105-6**): Sampling Refrigerator and Auto Sampler, pH and D.O. meters must be within ±2°C (2 times tolerance value). Thermometers measuring Outfall permit compliance must be within ±1.0°C (2 times tolerance value).

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
SAMPLE ANALYSIS HOLDING TIME/CONTAINER/PRESERVATION CHECK SHEET
Revised 02/2015 [40 CFR, Part 136.3, Table II]

FACILITY NAME:	**Kilmarnock WWTP**	VPDES NO	**VA0020788**	DATE:	**3/8/2016**

HOLDING TIMES *[Note: Collection period (for composites) and Sample Collection time (end of collection period) must be recorded on the COC.]*						**SAMPLE CONTAINER**				**PRESERVATION** *[Note: Preservation is to occur within 15 minutes of the end of the collection period.]*				
PARAMETER	APPROVED	MET?		LOGGED?		ADEQ. VOLUME		APPROP. TYPE		APPROVED	MET?		CHECKED?	
		Y	N	Y	N	Y	N	Y	N		Y	N	Y	N
pH	15 MIN.	X		X		X		X		Within 15 minutes				
CHLORINE	15 MIN.									Within 15 minutes				
DISSOLVED 0_2	15 MIN	X			X	X		X		Within 15 minutes				
TEMPERATURE	IMMERSION STAB.									N/A - Immediately				
BOD_5 & $CBOD_5$	48 HOURS									≤6° C	X		X	
TSS	7 DAYS									≤6° C	X		X	
COD	28 DAYS									≤6° C+H_2S0_4,HCl, or H3PO4 pH<2				
O&G as HEM (Method 1664)	28 DAYS									≤6° C+H_2S0_4 or HCl pH<2				
TPH - DRO and GRO (SW 846 Methods: 8015, 8260 and 8270)	DRO – NS GRO 14 DAYS									DRO – None GRO - ≤6° C+H_2S0_4 or HCl pH<2				
FECAL COLIFORM / *E. coli* / *Enterococci*	8 HRS									<10° C+0.008% $Na_2S_20_3$	*		X	
AMMONIA	28 DAYS									DECHLOR ≤6° C+H_2S0_4 pH<2t	*		X	
TKN	28 DAYS									DECHLOR ≤6° C+H_2S0_4 pH<2	*		X	
NITRATE or NITRITE	48 HOURS									≤6° C				
NITRATE+NITRITE	28 DAYS									≤6° C+H_2S0_4 pH<2				
TOTAL PHOS.	28 DAYS									≤6° C+H_2S0_4 pH<2	*		X	
METALS	6 MONTHS									HNO_3 pH<2 Dissolved Metals: 0.45 µm filter immediately	*		X	
Cr^{+6}	28 DAYS									Dissolved: 0.45 µm filter immediately. Buffer solution plus NaOH within 24 hrs				

PROBLEMS:	***Chemical preservation was not noted by the Permittee on the Chain of Custody.**

Holding Times and Preservation References (VELAP except for Field Tests)

Virginia Department of Environmental Quality

RECON INSPECTION REPORT

FACILITY NAME: Kilmarnock Wastewater Treatment Plant Location: 817 Waverly Avenue Kilmarnock, VA 22482 Mailing: P. O. Box 1357 Kilmarnock, VA 22482		**INSPECTION DATE:** December 9, 2015 **INSPECTOR** Heather Deihls Heather A.H. Deihls; 3/31/16	
PERMIT No.: VA0020788		**REPORT DATE:** 3/31/16	
TYPE OF FACILITY: ☑ Municipal ☐ Major ☐ Industrial ☑ Minor ☐ Federal ☐ Small Minor ☐ HP ☐ LP		**TIME OF INSPECTION:**	1018 Arrival / 1053 Departure
		TOTAL TIME SPENT (including prep & travel)	8 hours
PHOTOGRAPHS: ☑ Yes ☐ No		**UNANNOUNCED INSPECTION?** ☐ Yes ☑ No	
REVIEWED BY / Date: Heather Weimer 4/1/2016; Azra Bilalagic 4/11/2016			
PRESENT DURING INSPECTION:	P.J. Jones, Superintendent of Utilities and Public Works 804-436-6617, pjjones@kilmarnockva.com; Tom Saunders, Town Manager DEQ: Heather Weimer and Seth Mullins		
WEATHER:	51°F, cloudy		

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

This recon inspection was performed in response to a VELAP inspector concerns about E. coli reporting when results are higher than the permit limit. DEQ inspectors discussed practices and reporting procedures with the operator. The operator indicated that E. coli is analyzed three times per week in accordance with permit requirements. The facility records and reports bacteria results and does not resample. The facility does use the bacteria results as an indicator that maintenance may be needed on UV disinfection lamps. The inspector noted that this was standard industry practice and there may have been a miscommunication with the VELAP inspector. Not related to this report or inspection, the Town voluntarily terminated their VELAP certification for E. coli analysis and began using a commercial laboratory in December 2015.

UV Disinfection Overview:
The UV system is equipped with 48 lamps (3 banks with 16 lamps/bank). The system was last overhauled in the fall of 2015. Ballasts and tubes were replaced. Bulbs are routinely schedule for annual replacement. Bulbs are cleaned once or twice per month, depending on bacteria trends. The facility uses a phosphorus-free chemical spray and scrub to remove fouling.
The typical facility operation is for all three banks of lights to be in service, but the system is designed to be able to function with only two banks in the event that one bank is out of service for maintenance. At the time of this inspection, all three banks were in service, but it was noted that only three bulbs were operating in the third bank. Effluent was very clear and post aeration appeared adequate.

Following the December 2015 recon inspection, the facility submitted bacteria data for the October and November 2015 monitoring periods for review. This data was reviewed by Azra Bilalagic as an addendum to the 3/8/16 CEI inspection. One discrepancy was noted. Please see Request for Action Items and General Recommendations on page three.

VA DEQ Recon Inspection Report

Permit #	VA0020788

EFFLUENT FIELD DATA: Not obtained

Flow	MGD	**Dissolved Oxygen**	mg/L	**TRC (Contact Tank)**	mg/L
pH	S.U.	**Temperature**	˚C	**TRC (Final Effluent)**	mg/L

Was a Sampling Inspection conducted? ☐ Yes (see Sampling Inspection Report) ☑ No

CONDITION OF OUTFALL AND EFFLUENT CHARACTERISTICS:

1. Type of outfall: ☐ Shore based ☐ Submerged Diffuser? ☐ Yes ☐ No
2. Are the outfall and supporting structures in good condition? ☐ Yes ☐ No
3. Final Effluent (evidence of following problems): ☐ Sludge bar ☐ Grease
   ☐ Turbid effluent ☐ Visible foam ☐ Unusual color ☐ Oil sheen
4. Is there a visible effluent plume in the receiving stream? ☐ Yes ☐ No
5. Receiving stream: ☐ No observed problems ☐ Indication of problems (explain below)

   Comments: The discharge was viewed at the compliance monitoring point. The receiving stream was not viewed during the recon inspection.

REQUEST for ACTION (Written Response Required):

1. A potential data calculation error was noted on the November 2015 DMR. The geometric mean for fecal coliform was reported to be 9.13 N/CML; the inspector calculated the geometric mean to be 16 N/CML. This does not impact permit compliance, however please provide a corrected DMR for this data.
2. The 2011 O&M manual in DEQ files was reviewed following the recon inspection in order to determine if there is a designated E. coli monitoring schedule. A schedule could not be located. When reviewing the October 2015, November 2015, and January 2016 E. coli data, it was noted that roughly half of the E. coli monitoring events occurred Monday-Wednesday, others varied. Many wastewater treatment facilities post sample schedules in the lab and O&M manual. It is recommended for consistency and transparency to sample on designated days. If schedule/staffing/lab commitments require samples to be collected on an alternate schedule to make a note explaining the change in the operator logbook. In your response to this report, please explain your plan going forward.

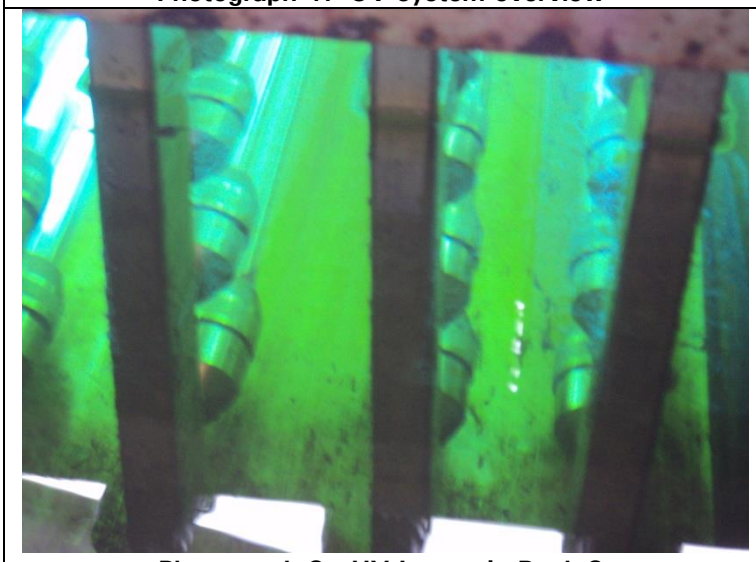
GENERAL RECOMMENDATIONS:

None.

Facility No. VA0020788
Digital Photographs taken 12/9/15

Photograph 1: UV system overview

Photograph 2: UV Control Panel



Photograph 3: UV Lamps in Bank 3

Photograph 4: Water entrance to UV bank

Photograph 5: Clear final effluent and post aeration

Facility Name _____VPDES Permit No. VA00_____

INITIAL DEMONSTRATION OF CAPABILITY/LABORATORY CONTROL SAMPLE LOG
Standard Methods, 4500-O G – 2011 Membrane Electrode Method
(10/2015)

Meter ID _____S/N _____.

CALIBRATION VERIFICATION RECORD

Date	Time	Meter Zeroed	Temperature °C	Elevation (in feet)	Barometric Pressure (in mm/Hg)	Altitude or pressure corrected calibration value - air saturated water (% saturation or mg/L)	Analyst Initials

Initial Demonstration of Capability (IDC) **ANALYST_____**

	Calculated Saturation Value, mg/L	Recorded DO Value, mg/L	Temperature °C	% Recovery	DATE	TIME	ANALYST (init)
Aliquot 1							
Aliquot 2							
Aliquot 3							
Aliquot 4							

Are all IDC measurements within 96 – 104% recovery the calculated saturation? Y_____ N_____

Annual Laboratory Control Sample (LCS) Analysis **ANALYST_____**

	Calculated Saturation Value, mg/L	Recorded DO Value, mg/L	Temperature °C	% Recovery	DATE	TIME	ANALYST
Aliquot 1							

Is LCS measurement within 96 – 104% recovery? Y_____ N_____

Note: A meter calibration and IDC series must be conducted for each analyst and documented on individual forms.

% Recovery: (use for each sample aliquot)

$$\% \text{ Recovery} = \frac{\text{Recorded Value}}{\text{Nominal Value}} \text{ x } 100$$

Directions for Conducting an Initial Demonstration of Capability (IDC) and Laboratory Control Sample Analysis (LCS)

10/2015

Dissolved Oxygen (Membrane Electrode)
Standard Methods for the Examination of Water and Wastewater 4500-O G-2011

1. Prepare air-saturated water by filling a 2 liter beaker with about 1,500 mL of distilled water and allow the water to reach room temperature. Aerate the water with compressed air or stir with a strong vortex for at least 30 minutes. Alternatively, the water may be placed in a partially filled container (such as a carboy) and shaken vigorously for at least 10 minutes. Turn off the air or stirrer and allow the water to again reach room temperature for at least 45 to 60 minutes. If using a carboy, remove the lid and loosely plug the opening with cotton.
2. Turn on the Dissolved Oxygen meter and allow it to stabilize as specified by the manufacturer's instructions. Be sure the probe is stored and in a 300 mL BOD bottle approximately one third full with water so the probe is suspended in the water-saturated air. If using a probe that will not fit in a BOD bottle, use the supplied storage/calibration chamber with a small piece of dampened sponge inside. Make sure there are no drops of moisture on the probe membrane itself during calibration.
3. After waiting the recommended stabilization time, verify the meter's power check and set the meter's zero point. Check and record the temperature of the water-saturated air with the probe.
4. Calibrate the instrument following manufacturer's instructions for calibration in water saturated air. After consulting a calibration chart using the calibration temperature and either elevation or barometric pressure, adjust the meter reading to the appropriate % saturation or mg/L value from the chart.
5. Gently fill four 300 mL BOD bottles until overflowing with air-saturated water and seal with a glass stopper (do not trap air bubbles inside the bottles). If the DO probe is too large to fit into a 300 mL BOD bottle, set up four wide mouth bottles or beakers instead with air-saturated water by adding water down the side of the beaker so as to not entrain air into the sample. In either case, the four air-saturated water samples must be analyzed within the next 15 minutes.
6. Place the meter in mg/L mode. Remove the probe from the water-saturated air bottle (or calibration chamber) and place it into the first of the four air-saturated water sample bottles or beakers prepared in step # 2 above. If the oxygen probe unit has its own stirrer, turn it on to begin the measurement. If oxygen probe does not have its own stirrer, gently place a small magnetic stir bar into each air-saturated water bottle or beaker prior to inserting the probe and gently turn on the stirrer, stirring only fast enough to provide approximately 1 ft/second flow across the probe, and not inducing a vortex.*
7. Record the dissolve oxygen measurement from the meter. Turn the meter dial to "temperature" and record the temperature of the sample. Document the date time and analyst's initials.
8. Repeat steps 6 through 8 until all four portions have been measured and recorded. Each measured DO value must be within ± 4% of the calibration value established in step #4. **If any of the four measurements are not within ± 4% of the value established in #4 above, the IDC must be repeated**.
9. Repeat steps 1 through 8 for each analyst performing the IDC.

LABORATORY CONTROL SAMPLE

1. If an analyst has completed a valid IDC, analysis of a Laboratory Control is required annually. This analysis is conducted in the same fashion as noted above, with the exception that analysis of only a single sample portion is required in Steps 5-8. Documentation of the LCS analysis follows the instructions above.

Notes:

* Magnetic stirrers give off heat during operation. A thermal barrier, such as a thin sheet of cork, must be placed between the magnetic stirrer plate and the air-saturated water sample bottle.

Each analyst must conduct their own meter calibration for the IDC. This will demonstrate the ability of each analyst to perform the calibration of the meter.

Disclaimer:

The content of materials presented here was developed by the Virginia Department of Environmental Quality. Instructional guidance was constructed to reflect current technology and accepted operational practices and was accurate at the time of development. Every effort has been made to ensure the materials are both accurate and up-to-date. However, these instructions are generalized. It remains the reader's responsibility to ensure that the content provided here is appropriate and acceptable for use at his or her laboratory prior to putting them in use. Always consult the Department of Environmental Quality inspector assigned to your facility prior to making any changes.

The use of specific products or trade names contained herein is done to assist the analysts. It does not constitute any real or implied endorsement of the product or manufacturer.

January Flow Data

Date	Day	Flow	D.O.	PH	TSS Concentration	TSS Loading	CBOD5 Concentration
1	F	0.167	8.9	7.4			
2	S	0.157	9.3	7.4			
3	S	0.151	9.7	7.4			
4	M	0.211	9.6	7.4			<QL
5	T	0.23	9.3	7.6			<QL
6	W	0.203	8.8	7.6			<QL
7	TH	0.213	9.5	7.7			
8	F	0.229	9	7.7			
9	S	0.209	9	7.8			
10	S	0.223	8.7	7.5			
11	M	0.218	9.6	7.5			<QL
12	T	0.21	9.8	7.9			<QL
13	W	0.217	10.1	8	<QL	<QL	<QL
14	TH	0.215	9.6	7.6			
15	F	0.337	10.8	7.7			
16	S	0.21	9.5	7.4			
17	S	0.225	10.1	7.3			
18	M	0.192	10.1	7.4			<QL
19	T	0.182	10.4	7.3			6.8
20	W	0.223	11.1	8			<QL
21	TH	0.254	11.2	7.7			
22	F	0.366	9.3	7.9			
23	S	0.407	9.3	7.4			
24	S	0.258	9.4	7.3			
25	M	0.248	10.1	7.1			<QL
26	T	0.43	10.1	7			<QL
27	W	0.56	8.6	7.5			<QL
28	TH	0.304	9	7.5			
29	F	0.311	8.6	7.2			
30	S	0.223	8.2	7.3			

31	S	0.225	9.5	7	
Monthly	**Average**	**0.251871**			0.57

Maximum Weekly Average	CBOD5 Loading	Maximum Weekly Average	Ammonia Concentration	Maximum Weekly Average	TKN Concentration
	<QL		0.37		0.65
	<QL		0.13		<QL
0	<QL	0	0.19	0.23	0.61
	<QL		<QL		0.63
	<QL		<QL		<QL
0	<QL	0	<QL	0	0.67
	<QL		0		<QL
	4.68	1.56	0.16		<QL
2.27	<QL		0	0.05	<QL
	<QL		0.28		0.94
	<QL		0.21		1.1
0	<QL	0	0.21	0.23	1.2

0.39	0.13	0.48

Maximum Weekly Average	TKN Loading	Maximum Weekly Average	Total Phosphorus Concentration
	519.1		
	0		
0.42	468.7	329.3	
	519.8		
	0		
0.43	550.3	356.7	0.39
			0.17
	0		
	0		
0	0	0	
	882.4		
	1790.3		
1.08	2543.5	1738.7	

606.2	0.28

** DEPARTMENT OF ENVIRONMENTAL QUALITY - DMR Verification **

Fecal

Facility: Kilmarnock WWTP

Month: November

Year: 2015

DAY	DATE	*Fecal* #/100ml	*Log Values*	
S	1			
M	2			
T	3			
W	4	1	0.00	
T	5			
F	6			
S	7			
S	8			
M	9			
T	10			
W	11	4	0.64	
T	12			
F	13			
S	14			
S	15			
M	16			
T	17			
W	18	2000	3.30	
T	19			
F	20			
S	21			
S	22			
M	23			
T	24	8	0.90	
W	25			
T	26			
F	27			
S	28			
S	29			
M	30			
T	31			
W				
T				
F				**GEOMETRIC**
S				**MEAN**
AVERAGES		4	1.21	16

31 = # days in month

4 = # of Fecal samples

ATTACHMENT E

Effluent DMR Data and Water Quality Criteria Monitoring

Facility Name:Kilmarnock Wastewater Treatment Plant **Permit No:VA0020788**

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
001	001	FLOW	.216	.274	NULL	NULL	NULL	10-Jan-2012	09-Jan-2012
			.210	.342	NULL	NULL	NULL	10-Feb-2012	09-Feb-2012
			.238	.542	NULL	NULL	NULL	10-Mar-2012	09-Mar-2012
			0.255	0.337	NULL	NULL	NULL	10-Apr-2012	09-Apr-2012
			0.223	0.449	NULL	NULL	NULL	10-May-2012	08-May-2012
			0.220	0.341	NULL	NULL	NULL	10-Jun-2012	08-Jun-2012
			0.226	0.291	NULL	NULL	NULL	10-Jul-2012	09-Jul-2012
			0.243	0.309	NULL	NULL	NULL	10-Aug-2012	09-Aug-2012
			0.231	0.424	NULL	NULL	NULL	10-Sep-2012	10-Sep-2012
			0.195	0.318	NULL	NULL	NULL	10-Oct-2012	10-Oct-2012
			0.236	0.1041	NULL	NULL	NULL	10-Nov-2012	09-Nov-2012
			0.214	0.351	NULL	NULL	NULL	10-Dec-2012	08-Dec-2012
			0.219	0.624	NULL	NULL	NULL	10-Jan-2013	10-Jan-2013
			0.254	0.657	NULL	NULL	NULL	10-Feb-2013	08-Feb-2013
			0.249	0.527	NULL	NULL	NULL	10-Mar-2013	08-Mar-2013
			0.248	0.548	NULL	NULL	NULL	10-Apr-2013	08-Apr-2013
			0.232	0.440	NULL	NULL	NULL	10-May-2013	10-May-2013
			0.198	0.248	NULL	NULL	NULL	10-Jun-2013	10-Jun-2013
			0.274	0.806	NULL	NULL	NULL	10-Jul-2013	10-Jul-2013
			0.236	0.498	NULL	NULL	NULL	10-Aug-2013	09-Aug-2013
			0.200	0.303	NULL	NULL	NULL	10-Sep-2013	10-Sep-2013
			0.175	0.207	NULL	NULL	NULL	10-Oct-2013	10-Oct-2013
			0.221	0.509	NULL	NULL	NULL	10-Nov-2013	08-Nov-2013
			0.199	0.374	NULL	NULL	NULL	10-Dec-2013	10-Dec-2013
			0.240	0.413	NULL	NULL	NULL	10-Jan-2014	10-Jan-2014
			0.242	0.522	NULL	NULL	NULL	10-Feb-2014	10-Feb-2014
			0.242	0.491	NULL	NULL	NULL	10-Mar-2014	10-Mar-2014
			0.226	0.447	NULL	NULL	NULL	10-Apr-2014	10-Apr-2014
			0.220	0.588	NULL	NULL	NULL	10-May-2014	13-May-2014
			0.218	0.319	NULL	NULL	NULL	10-Jun-2014	09-Jun-2014
			0.187	0.242	NULL	NULL	NULL	10-Jul-2014	09-Jul-2014
			0.183	0.271	NULL	NULL	NULL	10-Aug-2014	08-Aug-2014
			.187	.275	NULL	NULL	NULL	10-Sep-2014	10-Sep-2014
			0.206	373	NULL	NULL	NULL	10-Oct-2014	08-Oct-2014
			0.188	0.231	NULL	NULL	NULL	10-Nov-2014	10-Nov-2014
			0.187	0.372	NULL	NULL	NULL	10-Dec-2014	10-Dec-2014
			0.170	0.222	NULL	NULL	NULL	10-Jan-2015	09-Jan-2015
			0.193	0.380	NULL	NULL	NULL	10-Feb-2015	10-Feb-2015
			0.190	0.354	NULL	NULL	NULL	10-Mar-2015	10-Mar-2015
			0.223	0.49	NULL	NULL	NULL	10-Apr-2015	07-Apr-2015
			0.197	0.576	NULL	NULL	NULL	10-May-2015	08-May-2015
			0.173	0.316	NULL	NULL	NULL	10-Jun-2015	05-Jun-2015
			0.219	0.379	NULL	NULL	NULL	10-Jul-2015	09-Jul-2015
			0.190	0.399	NULL	NULL	NULL	10-Aug-2015	07-Aug-2015
			0.175	0.224	NULL	NULL	NULL	10-Sep-2015	10-Sep-2015
			0.18	0.285	NULL	NULL	NULL	10-Oct-2015	09-Oct-2015
			0.212	0.522	NULL	NULL	NULL	10-Nov-2015	10-Nov-2015
			0.213	0.549	NULL	NULL	NULL	10-Dec-2015	10-Dec-2015
			0.203	0.443	NULL	NULL	NULL	10-Jan-2016	10-Jan-2016
			0.252	0.560	NULL	NULL	NULL	10-Feb-2016	10-Feb-2016
			0.289	0.59	NULL	NULL	NULL	10-Mar-2016	10-Mar-2016
			0.227	0.343	NULL	NULL	NULL	10-Apr-2016	08-Apr-2016
			0.21	0.354	NULL	NULL	NULL	10-May-2016	06-May-2016
			0.260	0.598	NULL	NULL	NULL	10-Jun-2016	10-Jun-2016
			0.212	0.301	NULL	NULL	NULL	10-Jul-2016	11-Jul-2016
	002	pH	NULL	NULL	NULL	7	7.6	10-Jan-2012	09-Jan-2012
			NULL	NULL	NULL	7	7.7	10-Feb-2012	09-Feb-2012
			NULL	NULL	NULL	7	7.9	10-Mar-2012	09-Mar-2012
			NULL	NULL	NULL	7.2	7.8	10-Apr-2012	09-Apr-2012
			NULL	NULL	NULL	7.2	7.9	10-May-2012	08-May-2012
			NULL	NULL	NULL	7.2	8	10-Jun-2012	08-Jun-2012
			NULL	NULL	NULL	7.1	8.1	10-Jul-2012	09-Jul-2012
			NULL	NULL	NULL	7.2	8	10-Aug-2012	09-Aug-2012
			NULL	NULL	NULL	7.1	7.9	10-Sep-2012	10-Sep-2012
			NULL	NULL	NULL	7.2	8	10-Oct-2012	10-Oct-2012
			NULL	NULL	NULL	6.6	7.8	10-Nov-2012	09-Nov-2012
			NULL	NULL	NULL	6.9	8	10-Dec-2012	08-Dec-2012

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	NULL	6.8	7.7	10-Jan-2013	10-Jan-2013
			NULL	NULL	NULL	6.6	7.5	10-Feb-2013	08-Feb-2013
			NULL	NULL	NULL	6.9	8	10-Mar-2013	08-Mar-2013
			NULL	NULL	NULL	6.8	7.3	10-Apr-2013	08-Apr-2013
			NULL	NULL	NULL	6.9	7.5	10-May-2013	10-May-2013
			NULL	NULL	NULL	6.9	7.9	10-Jun-2013	10-Jun-2013
			NULL	NULL	NULL	6.7	8	10-Jul-2013	10-Jul-2013
			NULL	NULL	NULL	7	7.8	10-Aug-2013	09-Aug-2013
			NULL	NULL	NULL	7.1	7.8	10-Sep-2013	10-Sep-2013
			NULL	NULL	NULL	7.1	7.8	10-Oct-2013	10-Oct-2013
			NULL	NULL	NULL	6.9	7.8	10-Nov-2013	08-Nov-2013
			NULL	NULL	NULL	7	7.7	10-Dec-2013	10-Dec-2013
			NULL	NULL	NULL	6.9	7.7	10-Jan-2014	10-Jan-2014
			NULL	NULL	NULL	6.9	7.5	10-Feb-2014	10-Feb-2014
			NULL	NULL	NULL	6.9	7.5	10-Mar-2014	10-Mar-2014
			NULL	NULL	NULL	6.9	7.5	10-Apr-2014	10-Apr-2014
			NULL	NULL	NULL	6.8	7.7	10-May-2014	13-May-2014
			NULL	NULL	NULL	6.8	7.9	10-Jun-2014	09-Jun-2014
			NULL	NULL	NULL	6.5	7.9	10-Jul-2014	09-Jul-2014
			NULL	NULL	NULL	7.1	7.8	10-Aug-2014	08-Aug-2014
			NULL	NULL	NULL	7.0	8.3	10-Sep-2014	10-Sep-2014
			NULL	NULL	NULL	6.8	7.6	10-Oct-2014	08-Oct-2014
			NULL	NULL	NULL	6.7	7.7	10-Nov-2014	10-Nov-2014
			NULL	NULL	NULL	6.8	7.5	10-Dec-2014	10-Dec-2014
			NULL	NULL	NULL	6.7	7.6	10-Jan-2015	09-Jan-2015
			NULL	NULL	NULL	6.6	7.6	10-Feb-2015	10-Feb-2015
			NULL	NULL	NULL	6.7	8.1	10-Mar-2015	10-Mar-2015
			NULL	NULL	NULL	6.8	7.8	10-Apr-2015	07-Apr-2015
			NULL	NULL	NULL	6.9	7.5	10-May-2015	08-May-2015
			NULL	NULL	NULL	7	7.7	10-Jun-2015	05-Jun-2015
			NULL	NULL	NULL	7	7.9	10-Jul-2015	09-Jul-2015
			NULL	NULL	NULL	7	7.8	10-Aug-2015	07-Aug-2015
			NULL	NULL	NULL	7.1	7.8	10-Sep-2015	10-Sep-2015
			NULL	NULL	NULL	7.2	7.9	10-Oct-2015	09-Oct-2015
			NULL	NULL	NULL	7	7.9	10-Nov-2015	10-Nov-2015
			NULL	NULL	NULL	7	7.9	10-Dec-2015	10-Dec-2015
			NULL	NULL	NULL	7.1	7.8	10-Jan-2016	10-Jan-2016
			NULL	NULL	NULL	7	8	10-Feb-2016	10-Feb-2016
			NULL	NULL	NULL	7	7.8	10-Mar-2016	10-Mar-2016
			NULL	NULL	NULL	7.3	8.2	10-Apr-2016	08-Apr-2016
			NULL	NULL	NULL	7.4	8.9	10-May-2016	06-May-2016
			NULL	NULL	NULL	7.1	8.3	10-Jun-2016	10-Jun-2016
			NULL	NULL	NULL	7.2	8.1	10-Jul-2016	11-Jul-2016
		10%TILE					**7.5**		
		90%TILE					**8.1**		
	004	TSS	2.9	2.9	3.5	NULL	3.5	10-Jan-2012	09-Jan-2012
			1.3	1.3	1.8	NULL	1.8	10-Feb-2012	09-Feb-2012
			.98	.98	1.3	NULL	1.3	10-Mar-2012	09-Mar-2012
			1.2	1.2	1.5	NULL	1.5	10-Apr-2012	09-Apr-2012
			2.3	2.3	2.5	NULL	2.5	10-May-2012	08-May-2012
			1.5	1.5	1.8	NULL	1.8	10-Jun-2012	08-Jun-2012
			2.8	2.8	3.1	NULL	3.1	10-Jul-2012	09-Jul-2012
			0.79	0.79	1.0	NULL	1.0	10-Aug-2012	09-Aug-2012
			0.81	0.81	1.1	NULL	1.1	10-Sep-2012	10-Sep-2012
			3.9	3.9	6.4	NULL	6.4	10-Oct-2012	10-Oct-2012
			3.2	3.2	3.0	NULL	3.0	10-Nov-2012	09-Nov-2012
			3.4	3.4	4.6	NULL	4.6	10-Dec-2012	08-Dec-2012
			1.1	1.1	2.1	NULL	2.1	10-Jan-2013	10-Jan-2013
			3.3	3.3	3.5	NULL	3.5	10-Feb-2013	08-Feb-2013
			23.0	23.0	16.0	NULL	16.0	10-Mar-2013	08-Mar-2013
			1.6	1.6	1.6	NULL	1.6	10-Apr-2013	08-Apr-2013
			4.6	4.6	5.4	NULL	5.4	10-May-2013	10-May-2013
			1.7	1.7	2.4	NULL	2.4	10-Jun-2013	10-Jun-2013
			2.0	2.0	2.5	NULL	2.5	10-Jul-2013	10-Jul-2013
			1.3	1.3	1.7	NULL	1.7	10-Aug-2013	09-Aug-2013
			3.1	3.1	3.8	NULL	3.8	10-Sep-2013	10-Sep-2013
			1.2	1.2	1.9	NULL	1.9	10-Oct-2013	10-Oct-2013
			1.3	1.3	1.6	NULL	1.6	10-Nov-2013	08-Nov-2013
			1.4	1.4	1.7	NULL	1.7	10-Dec-2013	10-Dec-2013

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			1.5	1.5	2.0	NULL	2.0	10-Jan-2014	10-Jan-2014
			2.7	2.7	3.1	NULL	3.1	10-Feb-2014	10-Feb-2014
			2.6	2.6	2.8	NULL	2.8	10-Mar-2014	10-Mar-2014
			3.6	3.6	4.3	NULL	4.3	10-Apr-2014	10-Apr-2014
			3.3	3.3	4.0	NULL	4.0	10-May-2014	13-May-2014
			1.4	1.4	1.2	NULL	1.2	10-Jun-2014	09-Jun-2014
			2.6	2.6	2.8	NULL	2.8	10-Jul-2014	09-Jul-2014
			4.5	4.5	6.3	NULL	6.3	10-Aug-2014	08-Aug-2014
			2.8	2.8	5.2	NULL	5.2	10-Sep-2014	10-Sep-2014
			2.6	2.6	3.5	NULL	3.5	10-Oct-2014	08-Oct-2014
			1.3	1.3	1.5	NULL	1.5	10-Nov-2014	10-Nov-2014
			2.2	2.2	3.0	NULL	3.0	10-Dec-2014	10-Dec-2014
			1.3	1.3	2.2	NULL	2.2	10-Jan-2015	09-Jan-2015
			4.86	4.86	4.7	NULL	4.7	10-Feb-2015	10-Feb-2015
			3.0	3.0	4.3	NULL	4.3	10-Mar-2015	10-Mar-2015
			6.5	6.5	8.3	NULL	8.3	10-Apr-2015	07-Apr-2015
			6.2	6.2	10	NULL	10	10-May-2015	08-May-2015
			0.89	0.89	1.3	NULL	1.3	10-Jun-2015	05-Jun-2015
			0.72	0.72	1.1	NULL	1.1	10-Jul-2015	09-Jul-2015
			1.99	1.99	3.3	NULL	3.3	10-Aug-2015	07-Aug-2015
			2.0	2.0	3.0	NULL	3.0	10-Sep-2015	10-Sep-2015
			1.72	1.72	2.9	NULL	2.9	10-Oct-2015	09-Oct-2015
			0.72	0.72	<QL	NULL	<QL	10-Nov-2015	10-Nov-2015
			0.32	0.32	<QL	NULL	<QL	10-Dec-2015	10-Dec-2015
			0.94	0.94	1.3	NULL	1.3	10-Jan-2016	10-Jan-2016
			<QL	<QL	<QL	NULL	<QL	10-Feb-2016	10-Feb-2016
			1.2	1.2	1.3	NULL	1.3	10-Mar-2016	10-Mar-2016
			1.07	1.07	1.4	NULL	1.4	10-Apr-2016	08-Apr-2016
			0.85	0.85	1.2	NULL	1.2	10-May-2016	06-May-2016
			1.3	1.3	1.3	NULL	1.3	10-Jun-2016	10-Jun-2016
			1.2	1.2	1.7	NULL	1.7	10-Jul-2016	11-Jul-2016
	006	COLIFORM, FECAL	NULL	NULL	2.8	NULL	NULL	10-Jan-2012	09-Jan-2012
			NULL	NULL	5.3	NULL	NULL	10-Feb-2012	09-Feb-2012
			NULL	NULL	2.0	NULL	NULL	10-Mar-2012	09-Mar-2012
			NULL	NULL	2.4	NULL	NULL	10-Apr-2012	09-Apr-2012
			NULL	NULL	2.7	NULL	NULL	10-May-2012	08-May-2012
			NULL	NULL	4.3	NULL	NULL	10-Jun-2012	08-Jun-2012
			NULL	NULL	4.3	NULL	NULL	10-Jul-2012	09-Jul-2012
			NULL	NULL	2.8	NULL	NULL	10-Aug-2012	09-Aug-2012
			NULL	NULL	3.0	NULL	NULL	10-Sep-2012	10-Sep-2012
			NULL	NULL	6.5	NULL	NULL	10-Oct-2012	10-Oct-2012
			NULL	NULL	7.9	NULL	NULL	10-Nov-2012	09-Nov-2012
			NULL	NULL	3.2	NULL	NULL	10-Dec-2012	08-Dec-2012
			NULL	NULL	3.4	NULL	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	4.0	NULL	NULL	10-Feb-2013	08-Feb-2013
			NULL	NULL	2.4	NULL	NULL	10-Mar-2013	08-Mar-2013
			NULL	NULL	2.0	NULL	NULL	10-Apr-2013	08-Apr-2013
			NULL	NULL	2.0	NULL	NULL	10-May-2013	10-May-2013
			NULL	NULL	3.5	NULL	NULL	10-Jun-2013	10-Jun-2013
			NULL	NULL	9.1	NULL	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	32	NULL	NULL	10-Aug-2013	09-Aug-2013
			NULL	NULL	27.9	NULL	NULL	10-Sep-2013	10-Sep-2013
			NULL	NULL	11.5	NULL	NULL	10-Oct-2013	10-Oct-2013
			NULL	NULL	6.0	NULL	NULL	10-Nov-2013	08-Nov-2013
			NULL	NULL	3.6	NULL	NULL	10-Dec-2013	10-Dec-2013
			NULL	NULL	10.8	NULL	NULL	10-Jan-2014	10-Jan-2014
			NULL	NULL	69.3	NULL	NULL	10-Feb-2014	10-Feb-2014
			NULL	NULL	7.8	NULL	NULL	10-Mar-2014	10-Mar-2014
			NULL	NULL	39.3	NULL	NULL	10-Apr-2014	10-Apr-2014
			NULL	NULL	150	NULL	NULL	10-May-2014	13-May-2014
			NULL	NULL	2.1	NULL	NULL	10-Jun-2014	09-Jun-2014
			NULL	NULL	4.0	NULL	NULL	10-Jul-2014	09-Jul-2014
			NULL	NULL	8.3	NULL	NULL	10-Aug-2014	08-Aug-2014
			NULL	NULL	2.3	NULL	NULL	10-Sep-2014	10-Sep-2014
			NULL	NULL	13.6	NULL	NULL	10-Oct-2014	08-Oct-2014
			NULL	NULL	3	NULL	NULL	10-Nov-2014	10-Nov-2014
			NULL	NULL	4.8	NULL	NULL	10-Dec-2014	10-Dec-2014
			NULL	NULL	1.2	NULL	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	2	NULL	NULL	10-Feb-2015	10-Feb-2015

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	3.09	NULL	NULL	10-Mar-2015	10-Mar-2015
			NULL	NULL	2.2	NULL	NULL	10-Apr-2015	07-Apr-2015
			NULL	NULL	12.8	NULL	NULL	10-May-2015	08-May-2015
			NULL	NULL	2	NULL	NULL	10-Jun-2015	05-Jun-2015
			NULL	NULL	14.4	NULL	NULL	10-Jul-2015	09-Jul-2015
			NULL	NULL	1	NULL	NULL	10-Aug-2015	07-Aug-2015
			NULL	NULL	2.3	NULL	NULL	10-Sep-2015	10-Sep-2015
			NULL	NULL	2.3	NULL	NULL	10-Oct-2015	09-Oct-2015
			NULL	NULL	3	NULL	NULL	10-Nov-2015	10-Nov-2015
			NULL	NULL	16	NULL	NULL	10-Dec-2015	10-Dec-2015
			NULL	NULL	8.19	NULL	NULL	10-Jan-2016	10-Jan-2016
			NULL	NULL	31.94	NULL	NULL	10-Feb-2016	10-Feb-2016
			NULL	NULL	37.93	NULL	NULL	10-Mar-2016	10-Mar-2016
			NULL	NULL	2.89	NULL	NULL	10-Apr-2016	08-Apr-2016
			NULL	NULL	<QL	NULL	NULL	10-May-2016	06-May-2016
			NULL	NULL	<QL	NULL	NULL	10-Jun-2016	10-Jun-2016
			NULL	NULL	1.7	NULL	NULL	10-Jul-2016	11-Jul-2016
	007	DO	NULL	NULL	NULL	8.9	NULL	10-Jan-2012	09-Jan-2012
			NULL	NULL	NULL	9.7	NULL	10-Feb-2012	09-Feb-2012
			NULL	NULL	NULL	8.5	NULL	10-Mar-2012	09-Mar-2012
			NULL	NULL	NULL	7.6	NULL	10-Apr-2012	09-Apr-2012
			NULL	NULL	NULL	8.4	NULL	10-May-2012	08-May-2012
			NULL	NULL	NULL	7.4	NULL	10-Jun-2012	08-Jun-2012
			NULL	NULL	NULL	7.2	NULL	10-Jul-2012	09-Jul-2012
			NULL	NULL	NULL	7.2	NULL	10-Aug-2012	09-Aug-2012
			NULL	NULL	NULL	6.9	NULL	10-Sep-2012	10-Sep-2012
			NULL	NULL	NULL	7.0	NULL	10-Oct-2012	10-Oct-2012
			NULL	NULL	NULL	6.6	NULL	10-Nov-2012	09-Nov-2012
			NULL	NULL	NULL	8.0	NULL	10-Dec-2012	08-Dec-2012
			NULL	NULL	NULL	8.4	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	NULL	7.2	NULL	10-Feb-2013	08-Feb-2013
			NULL	NULL	NULL	8.3	NULL	10-Mar-2013	08-Mar-2013
			NULL	NULL	NULL	8.7	NULL	10-Apr-2013	08-Apr-2013
			NULL	NULL	NULL	7.6	NULL	10-May-2013	10-May-2013
			NULL	NULL	NULL	7.8	NULL	10-Jun-2013	10-Jun-2013
			NULL	NULL	NULL	6.8	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	NULL	7.0	NULL	10-Aug-2013	09-Aug-2013
			NULL	NULL	NULL	7.1	NULL	10-Sep-2013	10-Sep-2013
			NULL	NULL	NULL	7.2	NULL	10-Oct-2013	10-Oct-2013
			NULL	NULL	NULL	7.4	NULL	10-Nov-2013	08-Nov-2013
			NULL	NULL	NULL	8.1	NULL	10-Dec-2013	10-Dec-2013
			NULL	NULL	NULL	8.0	NULL	10-Jan-2014	10-Jan-2014
			NULL	NULL	NULL	8.9	NULL	10-Feb-2014	10-Feb-2014
			NULL	NULL	NULL	9.4	NULL	10-Mar-2014	10-Mar-2014
			NULL	NULL	NULL	8.7	NULL	10-Apr-2014	10-Apr-2014
			NULL	NULL	NULL	7.8	NULL	10-May-2014	13-May-2014
			NULL	NULL	NULL	7.3	NULL	10-Jun-2014	09-Jun-2014
			NULL	NULL	NULL	7.2	NULL	10-Jul-2014	09-Jul-2014
			NULL	NULL	NULL	7.3	NULL	10-Aug-2014	08-Aug-2014
			NULL	NULL	NULL	6.8	NULL	10-Sep-2014	10-Sep-2014
			NULL	NULL	NULL	5.5	NULL	10-Oct-2014	08-Oct-2014
			NULL	NULL	NULL	7.4	NULL	10-Nov-2014	10-Nov-2014
			NULL	NULL	NULL	8.3	NULL	10-Dec-2014	10-Dec-2014
			NULL	NULL	NULL	6.8	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	NULL	8.3	NULL	10-Feb-2015	10-Feb-2015
			NULL	NULL	NULL	7.3	NULL	10-Mar-2015	10-Mar-2015
			NULL	NULL	NULL	7.9	NULL	10-Apr-2015	07-Apr-2015
			NULL	NULL	NULL	6.7	NULL	10-May-2015	08-May-2015
			NULL	NULL	NULL	7.5	NULL	10-Jun-2015	05-Jun-2015
			NULL	NULL	NULL	4	NULL	10-Jul-2015	09-Jul-2015
			NULL	NULL	NULL	6.7	NULL	10-Aug-2015	07-Aug-2015
			NULL	NULL	NULL	6.8	NULL	10-Sep-2015	10-Sep-2015
			NULL	NULL	NULL	7.0	NULL	10-Oct-2015	09-Oct-2015
			NULL	NULL	NULL	6.9	NULL	10-Nov-2015	10-Nov-2015
			NULL	NULL	NULL	6.7	NULL	10-Dec-2015	10-Dec-2015
			NULL	NULL	NULL	8.0	NULL	10-Jan-2016	10-Jan-2016
			NULL	NULL	NULL	8.2	NULL	10-Feb-2016	10-Feb-2016
			NULL	NULL	NULL	7.3	NULL	10-Mar-2016	10-Mar-2016
			NULL	NULL	NULL	7.4	NULL	10-Apr-2016	08-Apr-2016

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	NULL	7.8	NULL	10-May-2016	06-May-2016
			NULL	NULL	NULL	6.7	NULL	10-Jun-2016	10-Jun-2016
			NULL	NULL	NULL	6.9	NULL	10-Jul-2016	11-Jul-2016
	039	AMMONIA, AS N	NULL	NULL	<QL	NULL	<QL	10-Jan-2012	09-Jan-2012
			NULL	NULL	<QL	NULL	<QL	10-Feb-2012	09-Feb-2012
			NULL	NULL	.20	NULL	.27	10-Mar-2012	09-Mar-2012
			NULL	NULL	<QL	NULL	<QL	10-Apr-2012	09-Apr-2012
			NULL	NULL	<QL	NULL	<QL	10-May-2012	08-May-2012
			NULL	NULL	<QL	NULL	<QL	10-Jun-2012	08-Jun-2012
			NULL	NULL	0.40	NULL	0.69	10-Jul-2012	09-Jul-2012
			NULL	NULL	<QL	NULL	<QL	10-Aug-2012	09-Aug-2012
			NULL	NULL	<QL	NULL	<QL	10-Sep-2012	10-Sep-2012
			NULL	NULL	<QL	NULL	<QL	10-Oct-2012	10-Oct-2012
			NULL	NULL	<QL	NULL	0.52	10-Nov-2012	09-Nov-2012
			NULL	NULL	<QL	NULL	<QL	10-Dec-2012	08-Dec-2012
			NULL	NULL	1.2	NULL	3.5	10-Jan-2013	10-Jan-2013
			NULL	NULL	<QL	NULL	<QL	10-Feb-2013	08-Feb-2013
			NULL	NULL	0.31	NULL	0.42	10-Mar-2013	08-Mar-2013
			NULL	NULL	<QL	NULL	0.24	10-Apr-2013	08-Apr-2013
			NULL	NULL	<QL	NULL	0.28	10-May-2013	10-May-2013
			NULL	NULL	<QL	NULL	<QL	10-Jun-2013	10-Jun-2013
			NULL	NULL	<QL	NULL	<QL	10-Jul-2013	10-Jul-2013
			NULL	NULL	<QL	NULL	0.28	10-Aug-2013	09-Aug-2013
			NULL	NULL	0.28	NULL	0.71	10-Sep-2013	10-Sep-2013
			NULL	NULL	0.23	NULL	0.31	10-Oct-2013	10-Oct-2013
			NULL	NULL	1.0	NULL	2.1	10-Nov-2013	08-Nov-2013
			NULL	NULL	<QL	NULL	<QL	10-Dec-2013	10-Dec-2013
			NULL	NULL	0.70	NULL	1.6	10-Jan-2014	10-Jan-2014
			NULL	NULL	6.1	NULL	10.1	10-Feb-2014	10-Feb-2014
			NULL	NULL	9.3	NULL	10.7	10-Mar-2014	10-Mar-2014
			NULL	NULL	5.4	NULL	4.2	10-Apr-2014	10-Apr-2014
			NULL	NULL	0.48	NULL	1.2	10-May-2014	13-May-2014
			NULL	NULL	<QL	NULL	<QL	10-Jun-2014	09-Jun-2014
			NULL	NULL	<QL	NULL	<QL	10-Jul-2014	09-Jul-2014
			NULL	NULL	<QL	NULL	<QL	10-Aug-2014	08-Aug-2014
			NULL	NULL	.18	NULL	.6	10-Sep-2014	10-Sep-2014
			NULL	NULL	0.07	NULL	0.12	10-Oct-2014	08-Oct-2014
			NULL	NULL	0.17	NULL	0.49	10-Nov-2014	10-Nov-2014
			NULL	NULL	0.47	NULL	1.6	10-Dec-2014	10-Dec-2014
			NULL	NULL	0.18	NULL	0.39	10-Jan-2015	09-Jan-2015
			NULL	NULL	0.49	NULL	0.66	10-Feb-2015	10-Feb-2015
			NULL	NULL	0.55	NULL	1.9	10-Mar-2015	10-Mar-2015
			NULL	NULL	<QL	NULL	0.38	10-Apr-2015	07-Apr-2015
			NULL	NULL	<QL	NULL	0.7	10-May-2015	08-May-2015
			NULL	NULL	<QL	NULL	0.48	10-Jun-2015	05-Jun-2015
			NULL	NULL	0.27	NULL	0.40	10-Jul-2015	09-Jul-2015
			NULL	NULL	<QL	NULL	0.49	10-Aug-2015	07-Aug-2015
			NULL	NULL	<QL	NULL	0.38	10-Sep-2015	10-Sep-2015
			NULL	NULL	<QL	NULL	0.23	10-Oct-2015	09-Oct-2015
			NULL	NULL	<QL	NULL	<QL	10-Nov-2015	10-Nov-2015
			NULL	NULL	<QL	NULL	<QL	10-Dec-2015	10-Dec-2015
			NULL	NULL	<QL	NULL	<QL	10-Jan-2016	10-Jan-2016
			NULL	NULL	0.13	NULL	0.23	10-Feb-2016	10-Feb-2016
			NULL	NULL	0.45	NULL	<QL	10-Mar-2016	10-Mar-2016
			NULL	NULL	<QL	NULL	0.50	10-Apr-2016	08-Apr-2016
			NULL	NULL	<QL	NULL	<QL	10-May-2016	06-May-2016
			NULL	NULL	0.11	NULL	0.21	10-Jun-2016	10-Jun-2016
			NULL	NULL	0.13	NULL	0.27	10-Jul-2016	11-Jul-2016
	068	TKN (N-KJEL)	0.39	0.61	<QL	NULL	0.63	10-Jan-2012	09-Jan-2012
			1.1	3.1	1.3	NULL	3.0	10-Feb-2012	09-Feb-2012
			.56	.68	.59	NULL	.70	10-Mar-2012	09-Mar-2012
			0.85	1.5	0.88	NULL	1.5	10-Apr-2012	09-Apr-2012
			0.52	0.77	0.58	NULL	0.83	10-May-2012	08-May-2012
			0.51	0.51	0.59	NULL	0.57	10-Jun-2012	08-Jun-2012
			0.70	0.94	0.82	NULL	1.0	10-Jul-2012	09-Jul-2012
			0.64	1.0	0.67	NULL	1.1	10-Aug-2012	09-Aug-2012
			0.29	0.45	<QL	NULL	<QL	10-Sep-2012	10-Sep-2012
			0.40	0.62	0.52	NULL	0.77	10-Oct-2012	10-Oct-2012
			0.82	1.7	1.1	NULL	1.4	10-Nov-2012	09-Nov-2012

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			1.4	2.9	1.8	NULL	3.5	10-Dec-2012	08-Dec-2012
			2.0	3.9	2.0	NULL	4.3	10-Jan-2013	10-Jan-2013
			0.69	1.5	0.67	NULL	0.97	10-Feb-2013	08-Feb-2013
			2.8	0.60	0.86	NULL	0.73	10-Mar-2013	08-Mar-2013
			0.92	2.0	0.78	NULL	1.5	10-Apr-2013	08-Apr-2013
			1.0	1.3	1.2	NULL	1.6	10-May-2013	10-May-2013
			0.93	1.4	1.2	NULL	1.5	10-Jun-2013	10-Jun-2013
			0.53	0.69	0.53	NULL	0.71	10-Jul-2013	10-Jul-2013
			0.75	0.96	0.80	NULL	1.2	10-Aug-2013	09-Aug-2013
			0.76	1.3	0.94	NULL	1.5	10-Sep-2013	10-Sep-2013
			0.41	0.51	0.62	NULL	0.80	10-Oct-2013	10-Oct-2013
			1.1	1.9	1.5	NULL	2.6	10-Nov-2013	08-Nov-2013
			0.58	0.67	0.73	NULL	0.87	10-Dec-2013	10-Dec-2013
			1.5	2.2	1.7	NULL	2.7	10-Jan-2014	10-Jan-2014
			6.3	10.3	7.1	NULL	12.1	10-Feb-2014	10-Feb-2014
			8.7	9.8	9.6	NULL	10.5	10-Mar-2014	10-Mar-2014
			5.5	7.0	6.7	NULL	8.9	10-Apr-2014	10-Apr-2014
			2.2	3.0	2.3	NULL	3.1	10-May-2014	13-May-2014
			0.70	0.99	0.82	NULL	1.2	10-Jun-2014	09-Jun-2014
			0.55	0.64	0.73	NULL	0.84	10-Jul-2014	09-Jul-2014
			0.91	1.1	1.3	NULL	1.5	10-Aug-2014	08-Aug-2014
			720	1250	1.0	NULL	1.4	10-Sep-2014	10-Sep-2014
			1.32	2.96	1.6	NULL	2.1	10-Oct-2014	08-Oct-2014
			0.6	0.8	0.82	NULL	1.2	10-Nov-2014	10-Nov-2014
			0.85	1.83	1.2	NULL	2.5	10-Dec-2014	10-Dec-2014
			0.7	1.07	1.1	NULL	1.4	10-Jan-2015	09-Jan-2015
			1.43	2.89	1.88	NULL	3.3	10-Feb-2015	10-Feb-2015
			1370	2340	2.01	NULL	4.1	10-Mar-2015	10-Mar-2015
			1400	1900	1.8	NULL	2.2	10-Apr-2015	07-Apr-2015
			1300	2530	1.7	NULL	2.4	10-May-2015	08-May-2015
			800	1360	1.2	NULL	2.5	10-Jun-2015	05-Jun-2015
			1000	2100	1.1	NULL	1.5	10-Jul-2015	09-Jul-2015
			680	1130	0.99	NULL	1.3	10-Aug-2015	07-Aug-2015
			500	800	0.63	NULL	1.1	10-Sep-2015	10-Sep-2015
			470	1530	<QL	NULL	2.2	10-Oct-2015	09-Oct-2015
			300	580	<QL	NULL	0.67	10-Nov-2015	10-Nov-2015
			390	553	<QL	NULL	0.72	10-Dec-2015	10-Dec-2015
			385	456	<QL	NULL	0.62	10-Jan-2016	10-Jan-2016
			606	1740	0.48	NULL	1.08	10-Feb-2016	10-Feb-2016
			1160	1300	0.96	NULL	1.16	10-Mar-2016	10-Mar-2016
			1171	1060	1.4	NULL	1.23	10-Apr-2016	08-Apr-2016
			820	980	0.99	NULL	1.1	10-May-2016	06-May-2016
			850	1090	0.85	NULL	0.89	10-Jun-2016	10-Jun-2016
			480	930	0.64	NULL	1.27	10-Jul-2016	11-Jul-2016
	120	E.COLI	NULL	NULL	2.5	NULL	NULL	10-Jan-2012	09-Jan-2012
			NULL	NULL	1.2	NULL	NULL	10-Feb-2012	09-Feb-2012
			NULL	NULL	1.7	NULL	NULL	10-Mar-2012	09-Mar-2012
			NULL	NULL	1.9	NULL	NULL	10-Apr-2012	09-Apr-2012
			NULL	NULL	3.5	NULL	NULL	10-May-2012	08-May-2012
			NULL	NULL	2.3	NULL	NULL	10-Jun-2012	08-Jun-2012
			NULL	NULL	2.5	NULL	NULL	10-Jul-2012	09-Jul-2012
			NULL	NULL	2.3	NULL	NULL	10-Aug-2012	09-Aug-2012
			NULL	NULL	1.1	NULL	NULL	10-Sep-2012	10-Sep-2012
			NULL	NULL	1.2	NULL	NULL	10-Oct-2012	10-Oct-2012
			NULL	NULL	2.0	NULL	NULL	10-Nov-2012	09-Nov-2012
			NULL	NULL	1.8	NULL	NULL	10-Dec-2012	08-Dec-2012
			NULL	NULL	5.4	NULL	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	1.4	NULL	NULL	10-Feb-2013	08-Feb-2013
			NULL	NULL	1.9	NULL	NULL	10-Mar-2013	08-Mar-2013
			NULL	NULL	2.2	NULL	NULL	10-Apr-2013	08-Apr-2013
			NULL	NULL	3.0	NULL	NULL	10-May-2013	10-May-2013
			NULL	NULL	9.1	NULL	NULL	10-Jun-2013	10-Jun-2013
			NULL	NULL	24	NULL	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	22	NULL	NULL	10-Aug-2013	09-Aug-2013
			NULL	NULL	14.2	NULL	NULL	10-Sep-2013	10-Sep-2013
			NULL	NULL	12.5	NULL	NULL	10-Oct-2013	10-Oct-2013
			NULL	NULL	6.8	NULL	NULL	10-Nov-2013	08-Nov-2013
			NULL	NULL	2.7	NULL	NULL	10-Dec-2013	10-Dec-2013
			NULL	NULL	15.3	NULL	NULL	10-Jan-2014	10-Jan-2014

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
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			NULL	NULL	15.7	NULL	NULL	10-Mar-2014	10-Mar-2014
			NULL	NULL	26.5	NULL	NULL	10-Apr-2014	10-Apr-2014
			NULL	NULL	82.1	NULL	NULL	10-May-2014	13-May-2014
			NULL	NULL	1.9	NULL	NULL	10-Jun-2014	09-Jun-2014
			NULL	NULL	2.1	NULL	NULL	10-Jul-2014	09-Jul-2014
			NULL	NULL	5.0	NULL	NULL	10-Aug-2014	08-Aug-2014
			NULL	NULL	1.7	NULL	NULL	10-Sep-2014	10-Sep-2014
			NULL	NULL	1.7	NULL	NULL	10-Oct-2014	08-Oct-2014
			NULL	NULL	1	NULL	NULL	10-Nov-2014	10-Nov-2014
			NULL	NULL	1.9	NULL	NULL	10-Dec-2014	10-Dec-2014
			NULL	NULL	1.8	NULL	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	1	NULL	NULL	10-Feb-2015	10-Feb-2015
			NULL	NULL	8.6	NULL	NULL	10-Mar-2015	10-Mar-2015
			NULL	NULL	4.2	NULL	NULL	10-Apr-2015	07-Apr-2015
			NULL	NULL	3.1	NULL	NULL	10-May-2015	08-May-2015
			NULL	NULL	1	NULL	NULL	10-Jun-2015	05-Jun-2015
			NULL	NULL	2.9	NULL	NULL	10-Jul-2015	09-Jul-2015
			NULL	NULL	1	NULL	NULL	10-Aug-2015	07-Aug-2015
			NULL	NULL	1.6	NULL	NULL	10-Sep-2015	10-Sep-2015
			NULL	NULL	2.2	NULL	NULL	10-Oct-2015	09-Oct-2015
			NULL	NULL	8	NULL	NULL	10-Nov-2015	10-Nov-2015
			NULL	NULL	1.75	NULL	NULL	10-Dec-2015	10-Dec-2015
			NULL	NULL	2.38	NULL	NULL	10-Jan-2016	10-Jan-2016
			NULL	NULL	1.71	NULL	NULL	10-Feb-2016	10-Feb-2016
			NULL	NULL	3.1	NULL	NULL	10-Mar-2016	10-Mar-2016
			NULL	NULL	1.92	NULL	NULL	10-Apr-2016	08-Apr-2016
			NULL	NULL	1.19	NULL	NULL	10-May-2016	06-May-2016
			NULL	NULL	1.53	NULL	NULL	10-Jun-2016	10-Jun-2016
			NULL	NULL	2.1	NULL	NULL	10-Jul-2016	11-Jul-2016
	131	CYANIDE, FREE	NULL	NULL	5	NULL	5	10-Jan-2012	09-Jan-2012
			NULL	NULL	5.0	NULL	5.0	10-Feb-2012	09-Feb-2012
			NULL	NULL	5.0	NULL	5.0	10-Mar-2012	09-Mar-2012
			NULL	NULL	5	NULL	5	10-Apr-2012	09-Apr-2012
			NULL	NULL	5	NULL	5	10-May-2012	08-May-2012
			NULL	NULL	5.0	NULL	5.0	10-Jun-2012	08-Jun-2012
			NULL	NULL	5.0	NULL	5.0	10-Jul-2012	09-Jul-2012
			NULL	NULL	5	NULL	5	10-Aug-2012	09-Aug-2012
			NULL	NULL	5	NULL	5	10-Sep-2012	10-Sep-2012
			NULL	NULL	5	NULL	5	10-Oct-2012	10-Oct-2012
			NULL	NULL	5.0	NULL	5.0	10-Nov-2012	09-Nov-2012
			NULL	NULL	5	NULL	5	10-Dec-2012	08-Dec-2012
			NULL	NULL	5	NULL	5	10-Jan-2013	10-Jan-2013
			NULL	NULL	5.0	NULL	5.0	10-Feb-2013	08-Feb-2013
			NULL	NULL	5	NULL	5	10-Mar-2013	08-Mar-2013
			NULL	NULL	5	NULL	5	10-Apr-2013	08-Apr-2013
			NULL	NULL	5	NULL	5	10-May-2013	10-May-2013
			NULL	NULL	5	NULL	5	10-Jun-2013	10-Jun-2013
			NULL	NULL	5	NULL	5	10-Jul-2013	10-Jul-2013
			NULL	NULL	5	NULL	5	10-Aug-2013	09-Aug-2013
			NULL	NULL	5.0	NULL	5.0	10-Sep-2013	10-Sep-2013
			NULL	NULL	5.0	NULL	5.0	10-Oct-2013	10-Oct-2013
			NULL	NULL	5.0	NULL	5.0	10-Nov-2013	08-Nov-2013
			NULL	NULL	5.0	NULL	5.0	10-Dec-2013	10-Dec-2013
			NULL	NULL	5.0	NULL	5.0	10-Jan-2014	10-Jan-2014
			NULL	NULL	5.2	NULL	5.2	10-Feb-2014	10-Feb-2014
			NULL	NULL	5	NULL	5	10-Mar-2014	10-Mar-2014
			NULL	NULL	5.0	NULL	5.0	10-Apr-2014	10-Apr-2014
			NULL	NULL	5.0	NULL	5.0	10-May-2014	13-May-2014
			NULL	NULL	5.0	NULL	5.0	10-Jun-2014	09-Jun-2014
			NULL	NULL	21	NULL	21	10-Jul-2014	09-Jul-2014
			NULL	NULL	5.0	NULL	5.0	10-Aug-2014	08-Aug-2014
			NULL	NULL	5.6	NULL	5.6	10-Sep-2014	10-Sep-2014
			NULL	NULL	5	NULL	5	10-Oct-2014	08-Oct-2014
			NULL	NULL	0.005	NULL	0.005	10-Nov-2014	10-Nov-2014
			NULL	NULL	0.005	NULL	0.005	10-Dec-2014	10-Dec-2014
			NULL	NULL	<0.008	NULL	<0.008	10-Jan-2015	09-Jan-2015
			NULL	NULL	0.008	NULL	0.008	10-Feb-2015	10-Feb-2015
			NULL	NULL	0.014	NULL	0.014	10-Mar-2015	10-Mar-2015

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
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			NULL	NULL	<QL	NULL	<QL	10-May-2015	08-May-2015
			NULL	NULL	<QL	NULL	<QL	10-Jun-2015	05-Jun-2015
			NULL	NULL	0.0082	NULL	0.0082	10-Jul-2015	09-Jul-2015
			NULL	NULL	<QL	NULL	<QL	10-Aug-2015	07-Aug-2015
			NULL	NULL	0.0095	NULL	0.0095	10-Sep-2015	10-Sep-2015
			NULL	NULL	<QL	NULL	<QL	10-Oct-2015	09-Oct-2015
			NULL	NULL	<QL	NULL	<QL	10-Nov-2015	10-Nov-2015
			NULL	NULL	<QL	NULL	<QL	10-Dec-2015	10-Dec-2015
			NULL	NULL	<QL	NULL	<QL	10-Jan-2016	10-Jan-2016
			NULL	NULL	<QL	NULL	<QL	10-Feb-2016	10-Feb-2016
			NULL	NULL	<QL	NULL	<QL	10-Mar-2016	10-Mar-2016
			NULL	NULL	<QL	NULL	<QL	10-Apr-2016	08-Apr-2016
			NULL	NULL	<QL	NULL	<QL	10-May-2016	06-May-2016
			NULL	NULL	<QL	NULL	<QL	10-Jun-2016	10-Jun-2016
			NULL	NULL	<QL	NULL	<QL	10-Jul-2016	11-Jul-2016
	137	HARDNESS, TOTAL (AS CACO3)	NULL	NULL	NULL	255	NULL	10-Jan-2012	09-Jan-2012
			NULL	NULL	NULL	250	NULL	10-Feb-2012	09-Feb-2012
			NULL	NULL	NULL	270	NULL	10-Mar-2012	09-Mar-2012
			NULL	NULL	NULL	226	NULL	10-Apr-2012	09-Apr-2012
			NULL	NULL	NULL	230	NULL	10-May-2012	08-May-2012
			NULL	NULL	NULL	187.5	NULL	10-Jun-2012	08-Jun-2012
			NULL	NULL	NULL	243.5	NULL	10-Jul-2012	09-Jul-2012
			NULL	NULL	NULL	269	NULL	10-Aug-2012	09-Aug-2012
			NULL	NULL	NULL	228	NULL	10-Sep-2012	10-Sep-2012
			NULL	NULL	NULL	165.5	NULL	10-Oct-2012	10-Oct-2012
			NULL	NULL	NULL	200.8	NULL	10-Nov-2012	09-Nov-2012
			NULL	NULL	NULL	42	NULL	10-Dec-2012	08-Dec-2012
			NULL	NULL	NULL	274	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	NULL	178.6	NULL	10-Feb-2013	08-Feb-2013
			NULL	NULL	NULL	208	NULL	10-Mar-2013	08-Mar-2013
			NULL	NULL	NULL	213	NULL	10-Apr-2013	08-Apr-2013
			NULL	NULL	NULL	254	NULL	10-May-2013	10-May-2013
			NULL	NULL	NULL	161.7	NULL	10-Jun-2013	10-Jun-2013
			NULL	NULL	NULL	137.7	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	NULL	339	NULL	10-Aug-2013	09-Aug-2013
			NULL	NULL	NULL	124.6	NULL	10-Sep-2013	10-Sep-2013
			NULL	NULL	NULL	216	NULL	10-Oct-2013	10-Oct-2013
			NULL	NULL	NULL	164.5	NULL	10-Nov-2013	08-Nov-2013
			NULL	NULL	NULL	179.6	NULL	10-Dec-2013	10-Dec-2013
			NULL	NULL	NULL	168	NULL	10-Jan-2014	10-Jan-2014
			NULL	NULL	NULL	412	NULL	10-Feb-2014	10-Feb-2014
			NULL	NULL	NULL	141	NULL	10-Mar-2014	10-Mar-2014
			NULL	NULL	NULL	138	NULL	10-Apr-2014	10-Apr-2014
			NULL	NULL	NULL	329	NULL	10-May-2014	13-May-2014
			NULL	NULL	NULL	232	NULL	10-Jun-2014	09-Jun-2014
			NULL	NULL	NULL	312	NULL	10-Jul-2014	09-Jul-2014
			NULL	NULL	NULL	131	NULL	10-Aug-2014	08-Aug-2014
			NULL	NULL	NULL	126	NULL	10-Sep-2014	10-Sep-2014
			NULL	NULL	NULL	140	NULL	10-Oct-2014	08-Oct-2014
			NULL	NULL	NULL	139	NULL	10-Nov-2014	10-Nov-2014
			NULL	NULL	NULL	141	NULL	10-Dec-2014	10-Dec-2014
			NULL	NULL	NULL	160	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	NULL	180	NULL	10-Feb-2015	10-Feb-2015
			NULL	NULL	NULL	130	NULL	10-Mar-2015	10-Mar-2015
			NULL	NULL	NULL	169	NULL	10-Apr-2015	07-Apr-2015
			NULL	NULL	NULL	160	NULL	10-May-2015	08-May-2015
			NULL	NULL	NULL	173	NULL	10-Jun-2015	05-Jun-2015
			NULL	NULL	NULL	136	NULL	10-Jul-2015	09-Jul-2015
			NULL	NULL	NULL	143	NULL	10-Aug-2015	07-Aug-2015
			NULL	NULL	NULL	131	NULL	10-Sep-2015	10-Sep-2015
			NULL	NULL	NULL	33	NULL	10-Oct-2015	09-Oct-2015
			NULL	NULL	NULL	125	NULL	10-Nov-2015	10-Nov-2015
			NULL	NULL	NULL	124	NULL	10-Dec-2015	10-Dec-2015
			NULL	NULL	NULL	139	NULL	10-Jan-2016	10-Jan-2016
			NULL	NULL	NULL	108	NULL	10-Feb-2016	10-Feb-2016
			NULL	NULL	NULL	116	NULL	10-Mar-2016	10-Mar-2016
			NULL	NULL	NULL	124	NULL	10-Apr-2016	08-Apr-2016

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	NULL	131	NULL	10-May-2016	06-May-2016
			NULL	NULL	NULL	89	NULL	10-Jun-2016	10-Jun-2016
			NULL	NULL	NULL	161	NULL	10-Jul-2016	11-Jul-2016
	140	ENTEROCOCCI	NULL	NULL	1.4	NULL	NULL	10-Jan-2012	09-Jan-2012
			NULL	NULL	1.0	NULL	NULL	10-Feb-2012	09-Feb-2012
			NULL	NULL	1.8	NULL	NULL	10-Mar-2012	09-Mar-2012
			NULL	NULL	1.7	NULL	NULL	10-Apr-2012	09-Apr-2012
			NULL	NULL	2.8	NULL	NULL	10-May-2012	08-May-2012
			NULL	NULL	1.8	NULL	NULL	10-Jun-2012	08-Jun-2012
			NULL	NULL	2.0	NULL	NULL	10-Jul-2012	09-Jul-2012
			NULL	NULL	1.8	NULL	NULL	10-Aug-2012	09-Aug-2012
			NULL	NULL	3.4	NULL	NULL	10-Sep-2012	10-Sep-2012
			NULL	NULL	1.9	NULL	NULL	10-Oct-2012	10-Oct-2012
			NULL	NULL	2.4	NULL	NULL	10-Nov-2012	09-Nov-2012
			NULL	NULL	2.1	NULL	NULL	10-Dec-2012	08-Dec-2012
			NULL	NULL	3.8	NULL	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	2.3	NULL	NULL	10-Feb-2013	08-Feb-2013
			NULL	NULL	2.5	NULL	NULL	10-Mar-2013	08-Mar-2013
			NULL	NULL	1.6	NULL	NULL	10-Apr-2013	08-Apr-2013
			NULL	NULL	2.6	NULL	NULL	10-May-2013	10-May-2013
			NULL	NULL	2.9	NULL	NULL	10-Jun-2013	10-Jun-2013
			NULL	NULL	2.3	NULL	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	16.8	NULL	NULL	10-Aug-2013	09-Aug-2013
			NULL	NULL	6.8	NULL	NULL	10-Sep-2013	10-Sep-2013
			NULL	NULL	10.4	NULL	NULL	10-Oct-2013	10-Oct-2013
			NULL	NULL	1.9	NULL	NULL	10-Nov-2013	08-Nov-2013
			NULL	NULL	1.3	NULL	NULL	10-Dec-2013	10-Dec-2013
			NULL	NULL	7.2	NULL	NULL	10-Jan-2014	10-Jan-2014
			NULL	NULL	145	NULL	NULL	10-Feb-2014	10-Feb-2014
			NULL	NULL	8.0	NULL	NULL	10-Mar-2014	10-Mar-2014
			NULL	NULL	32.4	NULL	NULL	10-Apr-2014	10-Apr-2014
			NULL	NULL	260	NULL	NULL	10-May-2014	13-May-2014
			NULL	NULL	3.1	NULL	NULL	10-Jun-2014	09-Jun-2014
			NULL	NULL	1.2	NULL	NULL	10-Jul-2014	09-Jul-2014
			NULL	NULL	5.8	NULL	NULL	10-Aug-2014	08-Aug-2014
			NULL	NULL	5.3	NULL	NULL	10-Sep-2014	10-Sep-2014
			NULL	NULL	16.4	NULL	NULL	10-Oct-2014	08-Oct-2014
			NULL	NULL	2	NULL	NULL	10-Nov-2014	10-Nov-2014
			NULL	NULL	3.8	NULL	NULL	10-Dec-2014	10-Dec-2014
			NULL	NULL	2.6	NULL	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	6	NULL	NULL	10-Feb-2015	10-Feb-2015
			NULL	NULL	10.36	NULL	NULL	10-Mar-2015	10-Mar-2015
			NULL	NULL	19.8	NULL	NULL	10-Apr-2015	07-Apr-2015
			NULL	NULL	7.9	NULL	NULL	10-May-2015	08-May-2015
			NULL	NULL	2	NULL	NULL	10-Jun-2015	05-Jun-2015
			NULL	NULL	2.5	NULL	NULL	10-Jul-2015	09-Jul-2015
			NULL	NULL	1.7	NULL	NULL	10-Aug-2015	07-Aug-2015
			NULL	NULL	1.4	NULL	NULL	10-Sep-2015	10-Sep-2015
			NULL	NULL	1.7	NULL	NULL	10-Oct-2015	09-Oct-2015
			NULL	NULL	7	NULL	NULL	10-Nov-2015	10-Nov-2015
			NULL	NULL	2.27	NULL	NULL	10-Dec-2015	10-Dec-2015
			NULL	NULL	2.48	NULL	NULL	10-Jan-2016	10-Jan-2016
			NULL	NULL	1.98	NULL	NULL	10-Feb-2016	10-Feb-2016
			NULL	NULL	5.05	NULL	NULL	10-Mar-2016	10-Mar-2016
			NULL	NULL	6.3	NULL	NULL	10-Apr-2016	08-Apr-2016
			NULL	NULL	1	NULL	NULL	10-May-2016	06-May-2016
			NULL	NULL	1.57	NULL	NULL	10-Jun-2016	10-Jun-2016
			NULL	NULL	4.2	NULL	NULL	10-Jul-2016	11-Jul-2016
	159	CBOD5	0.89	0.99	<QL	NULL	<QL	10-Jan-2012	09-Jan-2012
			0.83	1.0	<QL	NULL	<QL	10-Feb-2012	09-Feb-2012
			.97	.97	<QL	NULL	<QL	10-Mar-2012	09-Mar-2012
			0.95	1.0	<QL	NULL	<QL	10-Apr-2012	09-Apr-2012
			0.98	1.1	<QL	NULL	<QL	10-May-2012	08-May-2012
			1.2	1.4	<QL	NULL	<QL	10-Jun-2012	08-Jun-2012
			1.1	1.2	<QL	NULL	<QL	10-Jul-2012	09-Jul-2012
			1.0	0.96	<QL	NULL	<QL	10-Aug-2012	09-Aug-2012
			0.96	1.3	<QL	NULL	<QL	10-Sep-2012	10-Sep-2012
			0.78	0.81	<QL	NULL	<QL	10-Oct-2012	10-Oct-2012
			1.3	1.2	<QL	NULL	<QL	10-Nov-2012	09-Nov-2012

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			0.84	0.97	<QL	NULL	<QL	10-Dec-2012	08-Dec-2012
			3.5	10.7	2.5	NULL	5.4	10-Jan-2013	10-Jan-2013
			1.7	3.1	<QL	NULL	<QL	10-Feb-2013	08-Feb-2013
			1.6	1.8	1.5	NULL	2.0	10-Mar-2013	08-Mar-2013
			1.6	2.3	<QL	NULL	<QL	10-Apr-2013	08-Apr-2013
			2.3	3.5	2.6	NULL	4.2	10-May-2013	10-May-2013
			2.3	2.9	3.2	NULL	3.5	10-Jun-2013	10-Jun-2013
			2.3	3.2	2.3	NULL	2.4	10-Jul-2013	10-Jul-2013
			2.4	3.8	2.7	NULL	5.4	10-Aug-2013	09-Aug-2013
			3.6	4.5	4.5	NULL	6.4	10-Sep-2013	10-Sep-2013
			2.2	2.3	3.4	NULL	3.5	10-Oct-2013	10-Oct-2013
			2.1	2.8	2.6	NULL	3.1	10-Nov-2013	08-Nov-2013
			2.1	2.7	2.7	NULL	3.3	10-Dec-2013	10-Dec-2013
			1.6	2.2	<QL	NULL	2.3	10-Jan-2014	10-Jan-2014
			2.5	5.3	2.8	NULL	6.1	10-Feb-2014	10-Feb-2014
			2.3	3.8	2.5	NULL	4.0	10-Mar-2014	10-Mar-2014
			2.6	3.7	3.2	NULL	4.3	10-Apr-2014	10-Apr-2014
			4.0	6.5	4.1	NULL	6.6	10-May-2014	13-May-2014
			1.7	2.1	2.0	NULL	2.4	10-Jun-2014	09-Jun-2014
			2.0	2.4	2.8	NULL	3.3	10-Jul-2014	09-Jul-2014
			2.7	3.2	3.8	NULL	4.3	10-Aug-2014	08-Aug-2014
			2.2	2.9	3.1	NULL	4.3	10-Sep-2014	10-Sep-2014
			2.6	4.7	3.2	NULL	4.7	10-Oct-2014	08-Oct-2014
			2.1	3.2	2.9	NULL	5.5	10-Nov-2014	10-Nov-2014
			2.3	3.4	3.0	NULL	4.1	10-Dec-2014	10-Dec-2014
			1.6	2.3	2.4	NULL	3.6	10-Jan-2015	09-Jan-2015
			1.49	4.5	2.01	NULL	4.6	10-Feb-2015	10-Feb-2015
			2.1	5.78	<QL	NULL	7.0	10-Mar-2015	10-Mar-2015
			1.8	2.8	<QL	NULL	3.8	10-Apr-2015	07-Apr-2015
			1.5	2.3	<QL	NULL	2.2	10-May-2015	08-May-2015
			1.53	3.18	<QL	NULL	4.7	10-Jun-2015	05-Jun-2015
			3.5	19.9	2.5	NULL	20.9	10-Jul-2015	09-Jul-2015
			1.43	3.2	<QL	NULL	5.2	10-Aug-2015	07-Aug-2015
			1.9	4.0	<QL	NULL	5.9	10-Sep-2015	10-Sep-2015
			1.95	6.28	<QL	NULL	9.7	10-Oct-2015	09-Oct-2015
			1.83	4.48	2.23	NULL	6.2	10-Nov-2015	10-Nov-2015
			1.39	3.64	<QL	NULL	<QL	10-Dec-2015	10-Dec-2015
			0.84	0.80	<QL	NULL	<QL	10-Jan-2016	10-Jan-2016
			0.39	1.56	0.57	NULL	2.27	10-Feb-2016	10-Feb-2016
			1.68	2.92	<QL	NULL	2.4	10-Mar-2016	10-Mar-2016
			1.41	2.38	<QL	NULL	2.33	10-Apr-2016	08-Apr-2016
			1.04	1.18	<QL	NULL	<QL	10-May-2016	06-May-2016
			0.28	1.32	0.28	NULL	1.3	10-Jun-2016	10-Jun-2016
			0.14	0.6	0.19	NULL	0.83	10-Jul-2016	11-Jul-2016
	196	ZINC, TOTAL RECOVERABLE	NULL	NULL	52	NULL	52	10-Jan-2012	09-Jan-2012
			NULL	NULL	63	NULL	63	10-Feb-2012	09-Feb-2012
			NULL	NULL	57	NULL	57	10-Mar-2012	09-Mar-2012
			NULL	NULL	10	NULL	10	10-Apr-2012	09-Apr-2012
			NULL	NULL	60	NULL	60	10-May-2012	08-May-2012
			NULL	NULL	45	NULL	45	10-Jun-2012	08-Jun-2012
			NULL	NULL	49	NULL	49	10-Jul-2012	09-Jul-2012
			NULL	NULL	43	NULL	43	10-Aug-2012	09-Aug-2012
			NULL	NULL	40	NULL	40	10-Sep-2012	10-Sep-2012
			NULL	NULL	21	NULL	21	10-Oct-2012	10-Oct-2012
			NULL	NULL	30.0	NULL	30.0	10-Nov-2012	09-Nov-2012
			NULL	NULL	31	NULL	31	10-Dec-2012	08-Dec-2012
			NULL	NULL	10	NULL	10	10-Jan-2013	10-Jan-2013
			NULL	NULL	17	NULL	17	10-Feb-2013	08-Feb-2013
			NULL	NULL	33	NULL	33	10-Mar-2013	08-Mar-2013
			NULL	NULL	10	NULL	10	10-Apr-2013	08-Apr-2013
			NULL	NULL	19	NULL	19	10-May-2013	10-May-2013
			NULL	NULL	10	NULL	10	10-Jun-2013	10-Jun-2013
			NULL	NULL	22	NULL	22	10-Jul-2013	10-Jul-2013
			NULL	NULL	10	NULL	10	10-Aug-2013	09-Aug-2013
			NULL	NULL	10	NULL	10	10-Sep-2013	10-Sep-2013
			NULL	NULL	54.7	NULL	54.7	10-Oct-2013	10-Oct-2013
			NULL	NULL	52.4	NULL	52.4	10-Nov-2013	08-Nov-2013
			NULL	NULL	13	NULL	13	10-Dec-2013	10-Dec-2013

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	65.9	NULL	65.9	10-Jan-2014	10-Jan-2014
			NULL	NULL	51	NULL	51	10-Feb-2014	10-Feb-2014
			NULL	NULL	54.8	NULL	54.8	10-Mar-2014	10-Mar-2014
			NULL	NULL	58.9	NULL	58.9	10-Apr-2014	10-Apr-2014
			NULL	NULL	65.9	NULL	65.9	10-May-2014	13-May-2014
			NULL	NULL	67.5	NULL	67.5	10-Jun-2014	09-Jun-2014
			NULL	NULL	56.8	NULL	56.8	10-Jul-2014	09-Jul-2014
			NULL	NULL	49.7	NULL	49.7	10-Aug-2014	08-Aug-2014
			NULL	NULL	85.3	NULL	85.3	10-Sep-2014	10-Sep-2014
			NULL	NULL	49.2	NULL	49.2	10-Oct-2014	08-Oct-2014
			NULL	NULL	61.1	NULL	61.1	10-Nov-2014	10-Nov-2014
			NULL	NULL	75	NULL	75	10-Dec-2014	10-Dec-2014
			NULL	NULL	58.4	NULL	58.4	10-Jan-2015	09-Jan-2015
			NULL	NULL	66.6	NULL	66.6	10-Feb-2015	10-Feb-2015
			NULL	NULL	65.7	NULL	65.7	10-Mar-2015	10-Mar-2015
			NULL	NULL	103	NULL	103	10-Apr-2015	07-Apr-2015
			NULL	NULL	97	NULL	97	10-May-2015	08-May-2015
			NULL	NULL	84	NULL	84	10-Jun-2015	05-Jun-2015
			NULL	NULL	37.6	NULL	37.6	10-Jul-2015	09-Jul-2015
			NULL	NULL	80	NULL	80	10-Aug-2015	07-Aug-2015
			NULL	NULL	61.4	NULL	61.4	10-Sep-2015	10-Sep-2015
			NULL	NULL	49	NULL	49	10-Oct-2015	09-Oct-2015
			NULL	NULL	85	NULL	85	10-Nov-2015	10-Nov-2015
			NULL	NULL	53.9	NULL	53.9	10-Dec-2015	10-Dec-2015
			NULL	NULL	78.7	NULL	78.7	10-Jan-2016	10-Jan-2016
			NULL	NULL	79.3	NULL	79.3	10-Feb-2016	10-Feb-2016
			NULL	NULL	68.1	NULL	68.1	10-Mar-2016	10-Mar-2016
			NULL	NULL	68.6	NULL	68.6	10-Apr-2016	08-Apr-2016
			NULL	NULL	101	NULL	101	10-May-2016	06-May-2016
			NULL	NULL	51.8	NULL	51.8	10-Jun-2016	10-Jun-2016
			NULL	NULL	100	NULL	100	10-Jul-2016	11-Jul-2016
	203	COPPER, TOTAL RECOVERABLE	NULL	NULL	7.6	NULL	7.6	10-Jan-2012	09-Jan-2012
			NULL	NULL	5.4	NULL	5.4	10-Feb-2012	09-Feb-2012
			NULL	NULL	2.0	NULL	2.0	10-Mar-2012	09-Mar-2012
			NULL	NULL	1.0	NULL	1.0	10-Apr-2012	09-Apr-2012
			NULL	NULL	1.8	NULL	1.8	10-May-2012	08-May-2012
			NULL	NULL	2.3	NULL	2.3	10-Jun-2012	08-Jun-2012
			NULL	NULL	2.8	NULL	2.8	10-Jul-2012	09-Jul-2012
			NULL	NULL	3.4	NULL	3.4	10-Aug-2012	09-Aug-2012
			NULL	NULL	1.2	NULL	1.2	10-Sep-2012	10-Sep-2012
			NULL	NULL	2.0	NULL	2.0	10-Oct-2012	10-Oct-2012
			NULL	NULL	4.0	NULL	4.0	10-Nov-2012	09-Nov-2012
			NULL	NULL	4	NULL	4	10-Dec-2012	08-Dec-2012
			NULL	NULL	5	NULL	5	10-Jan-2013	10-Jan-2013
			NULL	NULL	5	NULL	5	10-Feb-2013	08-Feb-2013
			NULL	NULL	5	NULL	5	10-Mar-2013	08-Mar-2013
			NULL	NULL	5	NULL	5	10-Apr-2013	08-Apr-2013
			NULL	NULL	5	NULL	5	10-May-2013	10-May-2013
			NULL	NULL	5	NULL	5	10-Jun-2013	10-Jun-2013
			NULL	NULL	5.8	NULL	5.8	10-Jul-2013	10-Jul-2013
			NULL	NULL	5	NULL	5	10-Aug-2013	09-Aug-2013
			NULL	NULL	5	NULL	5	10-Sep-2013	10-Sep-2013
			NULL	NULL	5.0	NULL	5.0	10-Oct-2013	10-Oct-2013
			NULL	NULL	5.0	NULL	5.0	10-Nov-2013	08-Nov-2013
			NULL	NULL	5	NULL	5	10-Dec-2013	10-Dec-2013
			NULL	NULL	6.9	NULL	6.9	10-Jan-2014	10-Jan-2014
			NULL	NULL	2.8	NULL	2.8	10-Feb-2014	10-Feb-2014
			NULL	NULL	6.0	NULL	6.0	10-Mar-2014	10-Mar-2014
			NULL	NULL	3.6	NULL	3.6	10-Apr-2014	10-Apr-2014
			NULL	NULL	5.0	NULL	5.0	10-May-2014	13-May-2014
			NULL	NULL	5.0	NULL	5.0	10-Jun-2014	09-Jun-2014
			NULL	NULL	11.1	NULL	11.1	10-Jul-2014	09-Jul-2014
			NULL	NULL	10.8	NULL	10.8	10-Aug-2014	08-Aug-2014
			NULL	NULL	9.4	NULL	9.4	10-Sep-2014	10-Sep-2014
			NULL	NULL	7.1	NULL	7.1	10-Oct-2014	08-Oct-2014
			NULL	NULL	9.2	NULL	9.2	10-Nov-2014	10-Nov-2014
			NULL	NULL	7.6	NULL	7.6	10-Dec-2014	10-Dec-2014
			NULL	NULL	8.7	NULL	8.7	10-Jan-2015	09-Jan-2015

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	9.4	NULL	9.4	10-Feb-2015	10-Feb-2015
			NULL	NULL	9.4	NULL	9.4	10-Mar-2015	10-Mar-2015
			NULL	NULL	14.1	NULL	14.1	10-Apr-2015	07-Apr-2015
			NULL	NULL	10.4	NULL	10.4	10-May-2015	08-May-2015
			NULL	NULL	<QL	NULL	<QL	10-Jun-2015	05-Jun-2015
			NULL	NULL	<QL	NULL	<QL	10-Jul-2015	09-Jul-2015
			NULL	NULL	<QL	NULL	<QL	10-Aug-2015	07-Aug-2015
			NULL	NULL	8.3	NULL	8.3	10-Sep-2015	10-Sep-2015
			NULL	NULL	11	NULL	11	10-Oct-2015	09-Oct-2015
			NULL	NULL	5.9	NULL	5.9	10-Nov-2015	10-Nov-2015
			NULL	NULL	6.2	NULL	6.2	10-Dec-2015	10-Dec-2015
			NULL	NULL	6.7	NULL	6.7	10-Jan-2016	10-Jan-2016
			NULL	NULL	7.5	NULL	7.5	10-Feb-2016	10-Feb-2016
			NULL	NULL	6.4	NULL	6.4	10-Mar-2016	10-Mar-2016
			NULL	NULL	<QL	NULL	<QL	10-Apr-2016	08-Apr-2016
			NULL	NULL	9.4	NULL	9.4	10-May-2016	06-May-2016
			NULL	NULL	5.9	NULL	5.9	10-Jun-2016	10-Jun-2016
			NULL	NULL	10.9	NULL	10.9	10-Jul-2016	11-Jul-2016
	794	PHOSPHORUS, TOTAL (AS P) (CALENDAR	NULL	NULL	0.21	NULL	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	0.44	NULL	NULL	10-Jan-2014	24-Jan-2014
			NULL	NULL	0.40	NULL	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	0.44	NULL	NULL	10-Jan-2016	10-Jan-2016
	806	PHOSPHORUS, TOTAL (AS P) (YEAR-TO-DATE)	NULL	NULL	NR	NULL	NULL	10-Jan-2012	09-Jan-2012
			NULL	NULL	0.14	NULL	NULL	10-Feb-2012	09-Feb-2012
			NULL	NULL	NR	NULL	NULL	10-Mar-2012	09-Mar-2012
			NULL	NULL	0.15	NULL	NULL	10-Apr-2012	09-Apr-2012
			NULL	NULL	NR	NULL	NULL	10-May-2012	08-May-2012
			NULL	NULL	NR	NULL	NULL	10-Jun-2012	08-Jun-2012
			NULL	NULL	NR	NULL	NULL	10-Jul-2012	09-Jul-2012
			NULL	NULL	NR	NULL	NULL	10-Aug-2012	09-Aug-2012
			NULL	NULL	NR	NULL	NULL	10-Sep-2012	10-Sep-2012
			NULL	NULL	NR	NULL	NULL	10-Oct-2012	10-Oct-2012
			NULL	NULL	NR	NULL	NULL	10-Nov-2012	09-Nov-2012
			NULL	NULL	NR	NULL	NULL	10-Dec-2012	08-Dec-2012
			NULL	NULL	NR	NULL	NULL	10-Jan-2013	10-Jan-2013
			NULL	NULL	NR	NULL	NULL	10-Feb-2013	08-Feb-2013
			NULL	NULL	NR	NULL	NULL	10-Mar-2013	08-Mar-2013
			NULL	NULL	NR	NULL	NULL	10-Apr-2013	08-Apr-2013
			NULL	NULL	NR	NULL	NULL	10-May-2013	10-May-2013
			NULL	NULL	NR	NULL	NULL	10-Jun-2013	10-Jun-2013
			NULL	NULL	NR	NULL	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	NR	NULL	NULL	10-Aug-2013	09-Aug-2013
			NULL	NULL	NR	NULL	NULL	10-Sep-2013	10-Sep-2013
			NULL	NULL	NR	NULL	NULL	10-Oct-2013	10-Oct-2013
			NULL	NULL	NR	NULL	NULL	10-Nov-2013	08-Nov-2013
			NULL	NULL	NR	NULL	NULL	10-Dec-2013	10-Dec-2013
			NULL	NULL	NR	NULL	NULL	10-Jan-2014	10-Jan-2014
			NULL	NULL	NR	NULL	NULL	10-Feb-2014	10-Feb-2014
			NULL	NULL	NR	NULL	NULL	10-Mar-2014	10-Mar-2014
			NULL	NULL	NR	NULL	NULL	10-Apr-2014	10-Apr-2014
			NULL	NULL	NR	NULL	NULL	10-May-2014	13-May-2014
			NULL	NULL	NR	NULL	NULL	10-Jun-2014	09-Jun-2014
			NULL	NULL	NR	NULL	NULL	10-Jul-2014	09-Jul-2014
			NULL	NULL	NR	NULL	NULL	10-Aug-2014	08-Aug-2014
			NULL	NULL	.29	NULL	NULL	10-Sep-2014	10-Sep-2014
			NULL	NULL	0.26	NULL	NULL	10-Oct-2014	08-Oct-2014
			NULL	NULL	.31	NULL	NULL	10-Nov-2014	10-Nov-2014
			NULL	NULL	0.31	NULL	NULL	10-Dec-2014	10-Dec-2014
			NULL	NULL	0.26	NULL	NULL	10-Jan-2015	09-Jan-2015
			NULL	NULL	0.25	NULL	NULL	10-Feb-2015	10-Feb-2015
			NULL	NULL	0.27	NULL	NULL	10-Mar-2015	10-Mar-2015
			NULL	NULL	0.27	NULL	NULL	10-Apr-2015	07-Apr-2015
			NULL	NULL	0.50	NULL	NULL	10-May-2015	08-May-2015
			NULL	NULL	0.7	NULL	NULL	10-Jun-2015	05-Jun-2015
			NULL	NULL	0.18	NULL	NULL	10-Jul-2015	09-Jul-2015
			NULL	NULL	0.52	NULL	NULL	10-Aug-2015	07-Aug-2015
			NULL	NULL	0.7	NULL	NULL	10-Sep-2015	10-Sep-2015

Outfall Number	Parameter Code	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date	Received Date
			NULL	NULL	0.66	NULL	NULL	10-Oct-2015	09-Oct-2015
			NULL	NULL	0.56	NULL	NULL	10-Nov-2015	10-Nov-2015
			NULL	NULL	0.34	NULL	NULL	10-Dec-2015	10-Dec-2015
			NULL	NULL	0.34	NULL	NULL	10-Jan-2016	10-Jan-2016
			NULL	NULL	0.28	NULL	NULL	10-Feb-2016	10-Feb-2016
			NULL	NULL	0.20	NULL	NULL	10-Mar-2016	10-Mar-2016
			NULL	NULL	0.18	NULL	NULL	10-Apr-2016	08-Apr-2016
			NULL	NULL	0.21	NULL	NULL	10-May-2016	06-May-2016
			NULL	NULL	0.23	NULL	NULL	10-Jun-2016	10-Jun-2016
			NULL	NULL	0.26	NULL	NULL	10-Jul-2016	11-Jul-2016
	872	SULFIDE, DISSOLVED (AS S)	NULL	NULL	1.0	NULL	1.0	10-Jul-2012	09-Jul-2012
			NULL	NULL	<0.05	NULL	<0.05	10-Jan-2013	08-Jan-2013
			NULL	NULL	NULL	NULL	NULL	10-Jul-2013	10-Jul-2013
			NULL	NULL	5	NULL	5	10-Jan-2014	09-Aug-2013
			NULL	NULL	0.10	NULL	0.10	10-Jul-2014	10-Feb-2014
			NULL	NULL	0.10	NULL	0.10	10-Jan-2015	08-Aug-2014
			NULL	NULL	<QL	NULL	<QL	10-Jul-2015	06-Jul-2015
			NULL	NULL	<QL	NULL	<QL	10-Jan-2016	10-Jan-2016
			NULL	NULL	<QL	NULL	<QL	10-Jul-2016	08-Jul-2016

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

Effective January 1, 2012, all analyses shall be in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

A listing of Virginia Environmental Laboratory Accreditation Program (VELAP) certified and/or accredited laboratories can be found at the following website:
http://www.dgs.state.va.us/DivisionofConsolidatedLaboratoryServices/Services/EnvironmentalLaboratoryCertification/tabid/1059/Default.aspx

Please be advised that additional water quality analyses may be necessary and/or required for permitting purposes.

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS[2]	SAMPLE TYPE[3]	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(4)	1.4	<5	G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(4)	1.0	<10.0	G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(4)	0.3	<1	G or C	1/5 YR
16065-83-1	Chromium III, dissolved [7]	(4)	3.6	<5.0	G or C	1/5 YR
18540-29-9	Chromium VI, dissolved [7]	(4)	1.6	<5.0	G or C	1/5 YR
7440-50-8	Copper, dissolved	(4)	0.50	5.5	G or C	1/5 YR
7439-92-1	Lead, dissolved	(4)	0.50	<5.0	G or C	1/5 YR
7439-97-6	Mercury, dissolved	(4)	1.0	<0.20	G or C	1/5 YR
7440-02-0	Nickel, dissolved	(4)	0.94	<5.0	G or C	1/5 YR
7782-49-2	Selenium, Total Recoverable	(4)	2.0	<10.0	G or C	1/5 YR (FW)
7440-22-4	Silver, dissolved	(4)	0.20	<5.0	G or C	1/5 YR
7440-28-0	Thallium, dissolved	(4)	(5)	<10.0	G or C	1/5 YR
7440-66-6	Zinc, dissolved	(4)	3.6	86.0	G or C	1/5 YR
PESTICIDES/PCBs						
309-00-2	Aldrin	608/625	0.05	<0.05	G or C	1/5 YR
57-74-9	Chlordane	608/625	0.2	<0.05	G or C	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)	<0.20	G or C	1/5 YR
72-54-8	DDD	608/625	0.1	<0.05	G or C	1/5 YR
72-55-9	DDE	608/625	0.1	<0.05	G or C	1/5 YR
50-29-3	DDT	608/625	0.1	<0.05	G or C	1/5 YR

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS[2]	SAMPLE TYPE[3]	SAMPLE FREQUENCY
8065-48-3	Demeton (synonym = Dementon-O,S)	622	(5)	< 1	G or C	1/5 YR
333-41-5	Diazinon	622	(5)	< 1	G or C	1/5 YR
60-57-1	Dieldrin	608/625	0.1	<0.05	G or C	1/5 YR
959-98-8	Alpha-Endosulfan (synonym = Endosulfan I)	608/625	0.1	<0.05	G or C	1/5 YR
33213-65-9	Beta-Endosulfan (synonym = Endosulfan II)	608625	0.1	<0.05	G or C	1/5 YR
1031-07-8	Endosulfan Sulfate	608/625	0.1	<0.05	G or C	1/5 YR
72-20-8	Endrin	608/625	0.1	<0.05	G or C	1/5 YR
7421-93-4	Endrin Aldehyde	608/625	(5)	<0.05	G or C	1/5 YR
86-50-0	Guthion (synonym = Azinphos Methyl)	622	(5)	< 1	G or C	1/5 YR
76-44-8	Heptachlor	608/625	0.05	<0.05	G or C	1/5 YR
1024-57-3	Heptachlor Epoxide	608/625	(5)	<0.05	G or C	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608/625	(5)	<0.05	G or C	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608/625	(5)	<0.05	G or C	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC (syn. = Lindane)	608/625	(5)	<0.05	G or C	1/5 YR
143-50-0	Kepone	8081 Extended/ 8270C/8270D	(5)	< 10.0	G or C	1/5 YR
121-75-5	Malathion	614	(5)	< 1	G or C	1/5 YR
72-43-5	Methoxychlor	608.2	(5)	<0.15	G or C	1/5 YR
2385-85-5	Mirex	8081 Extended/ 8270C/8270D	(5)	<0.15	G or C	1/5 YR
56-38-2	Parathion (synonym = Parathion Ethyl)	614	(5)	< 1	G or C	1/5 YR
1336-36-3	PCB, total	608/625	7.0	<0.5	G or C	1/5 YR
8001-35-2	Toxaphene	608/625	5.0	<0.5	G or C	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	610/625	10.0	<5.0	G or C	1/5 YR
120-12-7	Anthracene	610/625	10.0	< 5.0	G or C	1/5 YR
92-87-5	Benzidine	625	(5)	<50.0	G or C	1/5 YR
56-55-3	Benzo (a) anthracene	610/625	10.0	<5.0	G or C	1/5 YR
205-99-2	Benzo (b) fluoranthene	610/625	10.0	<5.0	G or C	1/5 YR
207-08-9	Benzo (k) fluoranthene	610/625	10.0	<5.0	G or C	1/5 YR
50-32-8	Benzo (a) pyrene	610/625	10.0	<5.0	G or C	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	625	(5)	<5.0	G or C	1/5 YR

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS[2]	SAMPLE TYPE[3]	SAMPLE FREQUENCY
108-60-1	Bis 2-Chloroisopropyl Ether	625	(5)	<5.0	G or C	1/5 YR
117-81-7	Bis 2-Ethylhexyl Phthalate (syn. = Di-2-Ethylhexyl Phthalate)	625	10.0	<5.0	G or C	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0	<5.0	G or C	1/5 YR
91-58-7	2-Chloronaphthalene	625	(5)	<5.0	G or C	1/5 YR
218-01-9	Chrysene	610/625	10.0	<5.0	G or C	1/5 YR
53-70-3	Dibenzo (a,h) anthracene	610/625	20.0	<5.0	G or C	1/5 YR
95-50-1	1,2-Dichlorobenzene	602/624	10.0	<5.0	G or C	1/5 YR
541-73-1	1,3-Dichlorobenzene	602/624	10.0	<5.0	G or C	1/5 YR
106-46-7	1,4-Dichlorobenzene	602/624	10.0	<5.0	G or C	1/5 YR
91-94-1	3,3-Dichlorobenzidine	625	(5)	<25.0	G or C	1/5 YR
84-66-2	Diethyl phthalate	625	10.0	<5.0	G or C	1/5 YR
131-11-3	Dimethyl phthalate	625	(5)	<5.0	G or C	1/5 YR
84-74-2	Di-n-butyl Phthalate (synonym = Dibutyl Phthalate)	625	10.0	<5.0	G or C	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0	<50.0	G or C	1/5 YR
122-66-7	1,2-Diphenylhydrazine	625/ 8270C/8270D	(5)	<5.0	G or C	1/5 YR
206-44-0	Fluoranthene	610/625	10.0	<5.0	G or C	1/5 YR
86-73-7	Fluorene	610/625	10.0	<5.0	G or C	1/5 YR
118-74-1	Hexachlorobenzene	625	(5)	<5.0	G or C	1/5 YR
87-68-3	Hexachlorobutadiene	625	(5)	<5.0	G or C	1/5 YR
77-47-4	Hexachlorocyclopentadiene	625	(5)	<10.0	G or C	1/5 YR
67-72-1	Hexachloroethane	625	(5)	<5.0	G or C	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	610/625	20.0	<5.0	G or C	1/5 YR
78-59-1	Isophorone	625	10.0	<10.0	G or C	1/5 YR
98-95-3	Nitrobenzene	625	10.0	<5.0	G or C	1/5 YR
62-75-9	N-Nitrosodimethylamine	625	(5)	<5.0	G or C	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	625	(5)	<5.0	G or C	1/5 YR
86-30-6	N-Nitrosodiphenylamine	625	(5)	<10.0	G or C	1/5 YR
129-00-0	Pyrene	610/625	10.0	<5.0	G or C	1/5 YR
120-82-1	1,2,4-Trichlorobenzene	625	10.0	<5.0	G or C	1/5 YR
VOLATILES						

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS[2]	SAMPLE TYPE[3]	SAMPLE FREQUENCY
107-02-8	Acrolein	624	(5)	<5.0	G	1/5 YR
107-13-1	Acrylonitrile	624	(5)	<50.0	G	1/5 YR
71-43-2	Benzene	602/624	10.0	<2.0	G	1/5 YR
75-25-2	Bromoform	624	10.0	<2.0	G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0	<2.0	G	1/5 YR
108-90-7	Chlorobenzene (synonym = Monochlorobenzene)	602/624	50.0	<2.0	G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0	<2.0	G	1/5 YR
67-66-3	Chloroform	624	10.0	<2.0	G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0	<2.0	G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0	<2.0	G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0	<2.0	G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	624	(5)	<2.0	G	1/5 YR
78-87-5	1,2-Dichloropropane	624	(5)	<2.0	G	1/5 YR
542-75-6	1,3-Dichloropropene	624	(5)	<2.0	G	1/5 YR
100-41-4	Ethylbenzene	602/624	10.0	<2.0	G	1/5 YR
74-83-9	Methyl Bromide (synonym = Bromomethane)	624	(5)	<2.0	G	1/5 YR
75-09-2	Methylene Chloride (synonym = Dichloromethane)	624	20.0	<2.0	G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	624	(5)	<2.0	G	1/5 YR
127-18-4	Tetrachloroethylene (synonym = Tetrachloroethene)	624	10.0	<2.0	G	1/5 YR
10-88-3	Toluene	602/624	10.0	<2.0	G	1/5 YR
79-00-5	1,1,2-Trichloroethane	624	(5)	<2.0	G	1/5 YR
79-01-6	Trichloroethylene (synonym = Trichloroethene)	624	10.0	<2.0	G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0	<2.0	G	1/5 YR
ACID EXTRACTABLES						
95-57-8	2-Chlorophenol	625	10.0	<5.0	G or C	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0	<5.0	G or C	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0	<10.0	G or C	1/5 YR
51-28-5	2,4-Dinitrophenol	625	(5)	<50.0	G or C	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	625	(5)	<20.0	G or C	1/5 YR
25154-52-3	Nonylphenol	ASTM D 7065-06	(5)	<5.5	G or C	1/5 YR

CASRN	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS[2]	SAMPLE TYPE[3]	SAMPLE FREQUENCY
87-86-5	Pentachlorophenol	625	50.0	<10.0	G or C	1/5 YR
108-95-2	Phenol	625	10.0	<5.0	G or C	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0	<10.0	G or C	1/5 YR
	MISCELLANEOUS					
776-41-7	Ammonia as NH3-N	350.1	200	<100	C	1/5 YR
16887-00-6	Chloride	(4)	(5)	36.8	C	1/5 YR (FW and PWS)
7782-50-5	Chlorine, Total Residual	(4)	100	<0.024	G	1/5 YR
57-12-5	Cyanide, Free [9]	ASTM 4282-02	10.0	<8	G	1/5 YR
N/A	*E. coli / Enterococcus* (N/CML)	(4)	(5)	<1	G	1/5 YR
18496-25-8	Sulfide, dissolved [8]	SM 4500 S^2 B	100	<100	G or C	1/5 YR
60-10-5	Tributyltin	(6)	(5)	<0.03	G or C	1/5 YR
471-34-1	Hardness (mg/L as $CaCO_3$)	(4)	(5)	31	G or C	1/5 YR (FW & TZs)

Thomas P. Saunders, Town Manager

Name of Principal Executive Officer or Authorized Agent & Title

Signature of Principal Executive Officer or Authorized Agent & Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

(1) Quantification level (QL) means the minimum levels, concentrations, or quantities of a target variable (e.g. target analyte) that can be reported with a specified degree of confidence in accordance with 1VAC30-45, Certification for Noncommercial Environmental Laboratories, or 1VAC30-46, Accreditation for Commercial Environmental Laboratories.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information (i.e. laboratory certificates of analysis) shall be submitted to document that the required quantification level has been attained.

(2) If the reporting result is greater than or equal to the QL, then include the reporting result. If the reporting result is less than the QL, then report "< [lab QL]". For example, if the reporting result is below the QL with a QL of 25 micrograms/liter, then report "<25".

(3) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

C = Composite = A 24-hour **(PW - Revise as required to require same composite duration as BOD_5)** composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

(4) A specific analytical method is not specified; however, an appropriate method to meet the QL shall be selected from any approved method presented in 40 CFR Part 136.

(5) The QL is at the discretion of the permittee. If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

(6) Analytical Methods: Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996 (currently the only Virginia Environmental Laboratory Accreditation Program (VELAP) accredited method).

(7) Both Chromium III and Chromium VI may be measured by the total chromium analysis. The total chromium analytical test QL shall be less than or equal to the lesser of the Chromium III or Chromium VI method QL listed above. If the result of the total chromium analysis is less than the analytical test QL, both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].

(8) Dissolved sulfide may be measured by the total sulfide analysis. The total sulfide analytical test QL shall be less than or equal to the dissolved sulfide method QL listed above. If the result of the total sulfide analysis is less than the analytical test QL, dissolved sulfide can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].

(9) Free cyanide may be measured by the total cyanide analysis. The total cyanide analytical test QL shall be less than or equal to the free cyanide method QL listed above. If the result of the total cyanide analysis is less than the analytical test QL, free cyanide can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].

ATTACHMENT F

Stream Sanitation Analysis Memo

OK MGM
7-15-93

MEMORANDUM

VIRGINIA WATER CONTROL BOARD
Piedmont Regional Office

4900 Cox Road Glen Allen, VA 23060 804/527-5020

SUBJECT: **Town of Kilmarnock STP - Lancaster County discharge to an Unnamed Tributary to Indian Creek in the Chesapeake Bay and Small Coastal River Basin**

TO: **Curt Linderman, PRO** CL 7/12/93

FROM: **Golam Mustafa, PRO** Golam Mustafa

DATE: **July 7, 1993**

COPIES: **VPDES Modeling File, Mark Alling, Da-Xin Ren, Denise Mosca, Ernie Simmon, and Gerry Seeley**

As you requested, I have looked at the Town of Kilmarnock STP discharge to an unnamed tributary to Indian Creek and assesssed the situation using AUTO$$ model with very conservative parameters. The model results are as follws:

Case Study #1

The current permit limits of BOD_5 equal to 30.0 mg/l; D.O. equal to 6.5 mg/l; at a discharge flow equal to 0.2 MGD will violate the dissolved oxygen water quality standards at the fall line of Indian Creek (see attachment -1).

Case Study #2

The Steady-State Free Flowing Regional Model (version 3.2) was run to determine the effluent limits at the current discharge location. At this location, the applicable effluent limits were developed for two discharge flows as listed below:

For the Current Design Flow	For the Expanded design Flow
Design Flow = 0.2 MGD	Design Flow = 0.5 MGD
$CBOD_5$ = 15.0 mg/l	$CBOD_5$ = 16 mg/l
TKN = 3.0 mg/l	TKN = 3.0 mg/l
DO = 6.5 mg/l	DO = 6.5 mg/l

Modeling assumptions are as follows:

Antidegradation Policy:

Based on the historical data from AQM station on Indian Creek (IND002.26) pH standards are violated (see attachment - 2). This station was monitored monthly. The period of analysis is from March

1970 to June 1993. From this station 178 data points were available for pH. The 97th percentile for pH was 9.6 S.U. According to OWRM guidance memo no. 93-015, Indian Creek should be designated as **Tier 1** waters due to pH standard violations. Based on model runs for the current discharge loads at the unnamed tributary to Indian Creek, DO standards are violated. The unnamed tributary to Indian Creek is considered as Tier 1 waters (see attachment 1).

Site Inspection:

A PRO group (Mark Alling, Golam Mustafa and D.X. Ren) conducted a site inspection with Denise Mosca of Kilmarnock office on June 21, 1993. The unnamed tributary to Indian Creek, above the existing discharge point, was found dry. During our site visit, relevant water quality data for temperature, pH, DO, conductivity and salinity were collected at one station on the unnamed tributary to Indian Creek, immediately below the current outfall, and six stations on the Indian Creek (see attachment -3). Note that no pH data was collected on the Indian Creek for stations 2, 3, 4, 5, and 6, due to malfunctioning of the pH meter.

7Q10 Flow and Temperature Estimates :

Based on topographic map and site inspection, the unnamed tributary to Indian Creek is an intermittent stream, the 7Q10 flow is considered to be equal to zero cfs. The free flowing segment of Indian Creek, above the fall-line was identified as an intermittent stream based on the topographic map. Therefore, the 7Q10 flow at the fall-line of Indian Creek was considered to be equal to zero cfs.

Note that the model assumes a default temperature value of 28°C. The default value is also supported by historical temperature data from an active AQM station at Indian Creek (IND002.26). From this station 187 data points were available for water temperature. One possible outlier recorded on September 1977 was ommitted from this analysis. The 90th percentile for water temperature was 27.4^{o}C. Note that there are three inactive AQM stations (IND001.23, IND001.80, and IND002.61) in Indian Creek. A total of 67 data points for water temperature were available from these three stations between March 1970 to May 1979. After combining all four stations data, the 90th percentile for water temperature was calculated as 28.16^{o}C.

Case Study #3

The AUTO$$ model was run to find proposed alternate outfall locations. Two alternate locations were identified.

The **first alternate** proposed location is at river mile IND002.5 near the Kilmarnock Wharf. The applicable effluent limits at this proposed location are:

For the Current Design Flow	For the Expanded design Flow
Design Flow = 0.2 MGD	Design Flow = 0.5 MGD
$CBOD_5$ = 25.0 mg/l	$CBOD_5$ = 25.0 mg/l
TKN = 3.0 mg/l	TKN = 3.0 mg/l
DO = 5.5 mg/l	DO = 5.5 mg/l

The **second alternate** proposed location is below the fall-line at river mile IND003.0 near the Kilmarnock Wharf. The applicable effluent limits at this location are:

For the Current Design Flow	For the Expanded design Flow
Design Flow = 0.2 MGD	Design Flow = 0.5 MGD
$CBOD_5$ = 25.0 mg/l	$CBOD_5$ = 16.0 mg/l
TKN = 3.0 mg/l	TKN = 3.0 mg/l
DO = 5.5 mg/l	DO = 6.5 mg/l

The model approach I have looked at is limited because there is no data available for some model parameters. However, I used very conservative assumptions and believe that the results are dependable. I have attached ten model runs as illustrative of the results.

The cross-sectional areas and channel depths were determined from topographic map. The dispersion coefficient was calculated using the Dispersion Coefficient formula developed by Dr. John Hamrick of Virginia Institute of Marine Science (VIMS). The dispersion coefficient was calculated as 16.4 ft^2/s.

Regarding toxic materials (ammonia, etc.), the model I used does not have the capability to look at mixing for toxics. I would recommend that permit writers use the OWRM guidance memo no. 93-015 for developing toxic limits. According to my discussion with Denise Mosca,

the ammonia effluent limit correlates with the DO-related TKN limit of 3.0 mg/l. She found that ammonia limit is more stringent at Indian Creek due to high pH concentrations, as compared to the unnamed tributary to Indian Creek.

If you have any questions please let me know.

References:

Fisher, H.B., et al. 1979. Mixing in Inland and Coastal Waters. Academic Press, New York.

Hamrick, J.M., 1986. Long-Term Dispersion in Unsteady Skewed Free Surface Flow, Estuarine Coastal and Shelf Science. 23, p. 807-845.

Hamrick, J.M., 1987. Time Averaged Estuarine Mass Transport Equations, Proceedings of the National Conference on Hydraulic Engineering, ASCE.

Harleman, D.R., 1964. The significance of Longitudinal Dispersion in the Analysis of Pollution in Estuaries, Proceedings, 2nd International Water Pollution Research Conference, Tokyo, Japan.

Phillips, M.D., 1989. Regional Tidal Modeling System. Office of Water Resources Management, Virginia State Water Control Board, Richmond, Virginia.

Phillips, M.D., 1990. Regional Water Quality Model for Free Flowing Streams, Version 3.0, Office of Water Resources Management, Virginia State Water Control Board, Richmond, Virginia.

ATTACHMENT G

Effluent Limitation Development

VA0020788– Town of Kilmarnock WWTP

MSTRANTI DATA SOURCE REPORT

Stream Information:	
Mean Hardness	Due to its ephemeral nature of the receiving stream (See Attachment A), effluent data is used to characterize the stream at low-flow conditions.
90% Temperature	
90% Maximum pH	
10% Maximum pH	
Tier Designation	From Flow Frequency Memo (Attachment A)
Mixing Information:	
All Data	Due to its ephemeral nature of the receiving stream, 100% mixing is assumed.
Effluent Information:	
Mean Hardness	Calculated from DMR data (see Attachment E)
90% Temperature	From Effluent Data provided with the 2016 Application
90% Maximum pH	Calculated from DMR Data (Attachment E)
10% Maximum pH	
Discharge Flow	From Application Form 2A

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Town of Kilmarnock WWTP Permit No.: VA0020788

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

Stream Information		
Mean Hardness (as CaCO3) =	181	mg/L
90% Temperature (Annual) =	25	deg C
90% Temperature (Wet season) =		deg C
90% Maximum pH =	8.1	SU
10% Maximum pH =	7.5	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) =		MGD
30Q10 (Wet season) =		MGD
30Q5 =	0	MGD
Harmonic Mean =	0	MGD

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

Effluent Information		
Mean Hardness (as CaCO3) =	181	mg/L
90% Temp (Annual) =	25	deg C
90% Temp (Wet season) =		deg C
90% Maximum pH =	8.1	SU
10% Maximum pH =	7.5	SU
Discharge Flow =	0.5	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	6.95E+00	1.07E+00	na	--	6.95E+00	1.07E+00	na	--	--	--	--	--	--	--	--	--	**6.95E+00**	**1.07E+00**	**na**	**--**
Ammonia-N (mg/l) (High Flow)	0	6.95E+00	2.10E+00	na	--	6.95E+00	2.10E+00	na	--	--	--	--	--	--	--	--	--	**6.95E+00**	**2.10E+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	0	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	7.7E+00	1.8E+00	na	--	7.7E+00	1.8E+00	na	--	--	--	--	--	--	--	--	--	**7.7E+00**	**1.8E+00**	**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	9.3E+02	1.2E+02	na	--	9.3E+02	1.2E+02	na	--	--	--	--	--	--	--	--	--	**9.3E+02**	**1.2E+02**	**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	2.4E+01	1.5E+01	na	--	2.4E+01	1.5E+01	na	--	--	--	--	--	--	--	--	--	**2.4E+01**	**1.5E+01**	**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	2.5E+02	2.9E+01	na	--	2.5E+02	2.9E+01	na	--	--	--	--	--	--	--	--	--	**2.5E+02**	**2.9E+01**	**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	3.0E+02	3.3E+01	na	4.6E+03	3.0E+02	3.3E+01	na	4.6E+03	--	--	--	--	--	--	--	--	**3.0E+02**	**3.3E+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	9.6E+00	--	na	--	9.6E+00	--	na	--	--	--	--	--	--	--	--	--	**9.6E+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	1.9E+02	2.0E+02	na	2.6E+04	1.9E+02	2.0E+02	na	2.6E+04	--	--	--	--	--	--	--	--	**1.9E+02**	**2.0E+02**	**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	1.1E+00
Chromium III	7.2E+01
Chromium VI	6.4E+00
Copper	8.9E+00
Iron	na
Lead	1.7E+01
Manganese	na
Mercury	4.6E-01
Nickel	2.0E+01
Selenium	3.0E+00
Silver	3.8E+00
Zinc	7.7E+01

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

STATS.EXE OUTPUTS

Facility = Town of Kilmarnock WWTP Chemical = **Ammonia as N (mg/L)** Chronic averaging period = 30 WLAa = 6.95 WLAc = 1.07 Q.L. = 0.1 # samples/mo. = 12 # samples/wk. = 3 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 = 2.15890699995545 Average Weekly limit = 1.57911892383421 Average Monthly LImit = 1.17623720010679 The data are: 9	Facility = Town of Kilmarnock WWTP Chemical = **Arsenic, dissolved (ug/L)** Chronic averaging period = 4 WLAa = 340 WLAc = 150 Q.L. = 10 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 10 Variance = 36 C.V. = 0.6 97th percentile daily values = 24.3341 97th percentile 4 day average = 16.6379 97th percentile 30 day average= 12.0605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 10

Facility = Town of Kilmarnock WWTP Chemical = **Cadmium, dissolved (ug/L)** Chronic averaging period = 4 WLAa = 7.7 WLAc = 1.8 Q.L. = 1 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 1 Variance = .36 C.V. = 0.6 97th percentile daily values = 2.43341 97th percentile 4 day average = 1.66379 97th percentile 30 day average= 1.20605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 1	Facility = Town of Kilmarnock WWTP Chemical = **Chloride (ug/L)** Chronic averaging period = 4 WLAa = 860000 WLAc = 230000 Q.L. = 1000 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 36800 Variance = 4875264 C.V. = 0.6 97th percentile daily values = 89549.7 97th percentile 4 day average = 61227.4 97th percentile 30 day average= 44382.7 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 36800

Facility = Town of Kilmarnock WWTP Chemical = **Chromium III (ug/L)** Chronic averaging period = 4 WLAa = 930 WLAc = 120 Q.L. = 5 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 5 Variance = 9 C.V. = 0.6 97th percentile daily values = 12.1670 97th percentile 4 day average = 8.31895 97th percentile 30 day average= 6.03026 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 5	Facility = Town of Kilmarnock WWTP Chemical = **Chromium VI (ug/L)** Chronic averaging period = 4 WLAa = 16 WLAc = 11 Q.L. = 5 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 5 Variance = 9 C.V. = 0.6 97th percentile daily values = 12.1670 97th percentile 4 day average = 8.31895 97th percentile 30 day average= 6.03026 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 5

Facility = Town of Kilmarnock WWTP Chemical = **Copper, dissolved (ug/L)** Chronic averaging period = 4 WLAa = 240 WLAc = 150 Q.L. = 5 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 5.5 Variance = 10.89 C.V. = 0.6 97th percentile daily values = 13.3837 97th percentile 4 day average = 9.15084 97th percentile 30 day average= 6.63329 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 5.5	Facility = Town of Kilmarnock WWTP Chemical = **lead, dissolved (ug/L)** Chronic averaging period = 4 WLAa = 250 WLAc = 290 Q.L. = 5 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 5 Variance = 9 C.V. = 0.6 97th percentile daily values = 12.1670 97th percentile 4 day average = 8.31895 97th percentile 30 day average= 6.03026 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data No Limit is required for this material The data are: 5

Facility = Town of Kilmarnock WWTP
Chemical = **Nickel, dissolved (ug/L)**
Chronic averaging period = 4
WLAa = 300
WLAc = 33
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 5
Variance = 9
C.V. = 0.6
97th percentile daily values = 12.1670
97th percentile 4 day average = 8.31895
97th percentile 30 day average= 6.03026
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5

Facility = Town of Kilmarnock WWTP
Chemical = **lead, dissolved (ug/L)**
Chronic averaging period = 4
WLAa = 250
WLAc = 290
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 5
Variance = 9
C.V. = 0.6
97th percentile daily values = 12.1670
97th percentile 4 day average = 8.31895
97th percentile 30 day average= 6.03026
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

5

Facility = Town of Kilmarnock WWTP Chemical = **selenium**	Facility = Town of Kilmarnock WWTP Chemical = **silver**

Facility = Town of Kilmarnock WWTP Chemical = **Zinc, dissolved (ug/L)** Chronic averaging period = 4 WLAa = 190 WLAc = 200 Q.L. = 5 # samples/mo. = 1 # samples/wk. = 1 Summary of Statistics: # observations = 1 Expected Value = 86 Variance = 2662.56 C.V. = 0.6 97th percentile daily values = 209.273 97th percentile 4 day average = 143.085 97th percentile 30 day average= 103.720 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data A limit is needed based on Acute Toxicity Maximum Daily Limit = 190 Average Weekly limit = 190 Average Monthly LImit = 190 The data are: 86	Facility = Town of Kilmarnock WWTP Chemical = **Total Residual Chlorine (mg/L)** Chronic averaging period = 4 WLAa = 19 WLAc = 11 Q.L. = 100 # samples/mo. = 90 # samples/wk. = 23 Summary of Statistics: # observations = 1 Expected Value = 20000 Variance = 1440000 C.V. = 0.6 97th percentile daily values = 48668.3 97th percentile 4 day average = 33275.8 97th percentile 30 day average= 24121.0 # < 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 = 8.29329880831319 Average Monthly LImit = 7.39793639872119 The data are: 20000

ATTACHMENT H

EPA, VDH AND USFWS Coordination Responses

ATTACHMENT I

Owner Comments