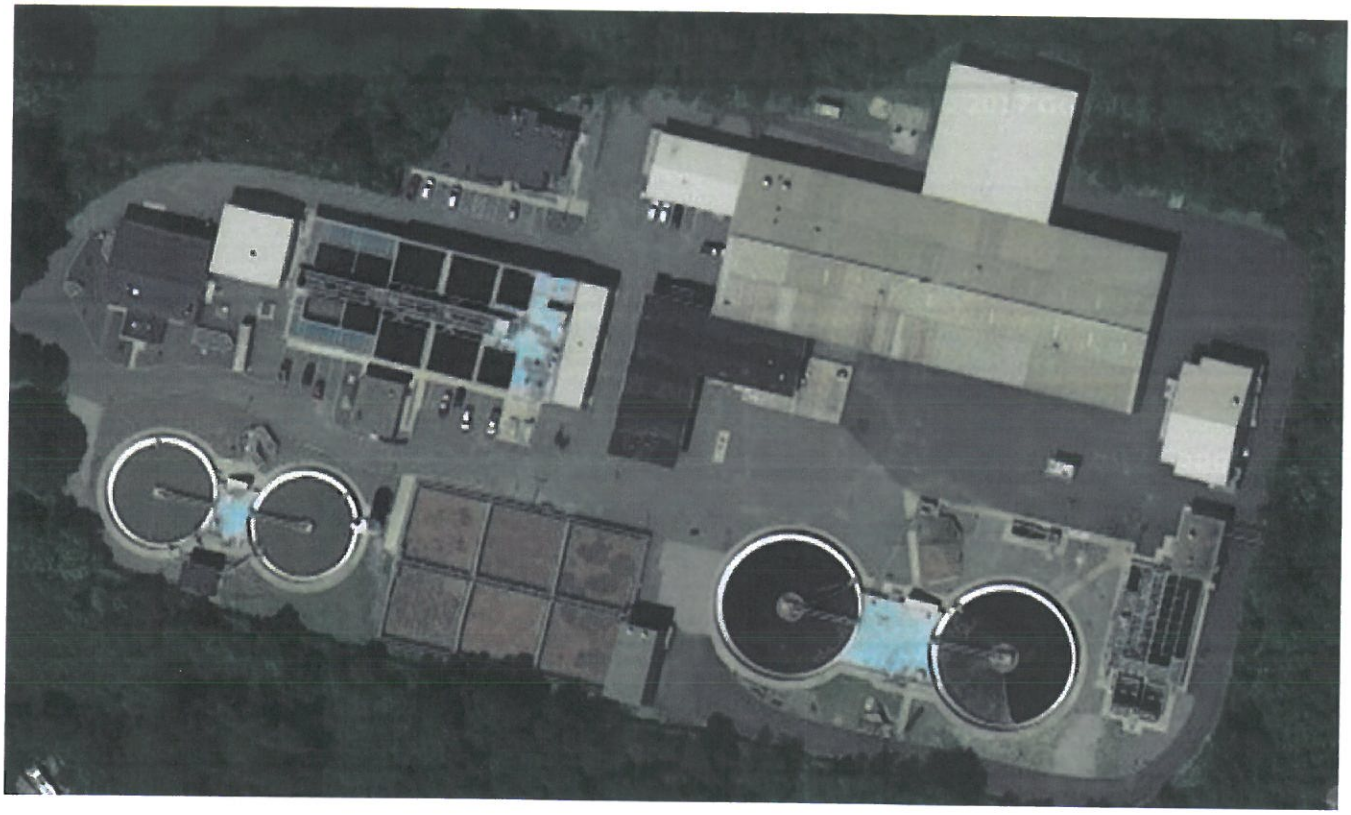
INDUSTRIAL PRETREATMENT PROGRAM

ANNUAL REPORT

(JULY 1, 2017 – JUNE 30, 2018)

WEST WARWICK REGIONAL WASTEWATER TREATMENT FACILITY



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CHAPTER 1.0

1.0 INTRODUCTION

The Town of West Warwick's Regional Wastewater Treatment Facility is located on Pontiac Avenue in the Town of West Warwick. The Facility processes and treats wastewater from the Town of West Warwick plus contributing flows from Warwick, Cranston, Coventry, East Greenwich and West Greenwich. The southeastern-most corner of the Town of Scituate is also within the Facility Planning area, but currently has no buildings connected. The Facility discharges its treated wastewater into the Pawtuxet River, and is regulated by Rhode Island Pollutant Discharge Elimination System Permit No. RI0100153.

The Facility serves the region's domestic and commercial sources, and also provides wastewater treatment for numerous local industrial dischargers. Therefore, in accordance with Federal and State regulations, the Town of West Warwick implements and enforces an Industrial Pretreatment Program. The purpose of the Program (approved by the Federal Environmental Protection Agency on September 9, 1983) is to achieve the three fundamental objectives of the National Pretreatment Program:

- To prevent the introduction of pollutants into the POTW which could interfere with its operations, referred to as inhibition or interference.
- To prevent the pass-through of untreated pollutants which could violate applicable water quality standards or RIPDES effluent limitations referred to as pass-through.
- To prevent the contamination of POTW sludge which would limit the selected sludge uses or disposal practices.

The purpose of this Annual Report is to review the components of the West Warwick Industrial Pretreatment Program, and to present a summary of the progress which has been made during the period of July 2017 to June 2018.

The contents of this report have been designed in order to meet the requirements of 40CFR403.12(I) and the conditions specified in the Facility's RIPDES Permit. This report is divided into the following sections:

- SECTION 2.0: INDUSTRIAL USER CLASSIFICATION
- SECTION 3.0: MONITORING ACTIVITIES
- SECTION 4.0: ENFORCEMENT ACTIVITIES
- SECTION 5.0: PROGRAM EVALUATION
- SECTION 6.0 ANALYTICAL EVALUATION

CHAPTER 2.0

2.1 INDUSTRIAL USERS

The master list of all industrial users was updated from the latest edition of the Rhode Island Directory of Manufacturers, drive-by visual inspections and observations, Sewer Use Records, Tax Assessor's Records (including all Town license applications), the Town Planning Department, Fire Department Chemical Manifest lists, the Town Building Inspector's list and internet searches. The industrial user list also takes into account all industries which are tenants of large mill-type complexes. The master list was established in 1987 in accordance with seven classifications as established by EPA. In general, this year there has been little change in industrial users and an overall decrease in volume from the users. The commercial facilities were fairly stable this year. The overall wastewater volume was continued to decline modestly. This year, the users that have categorical definitions but do not have categorical limits have been listed as (i) based on the comments received in the March 28, 2018 Pretreatment Audit Report

The following are the classifications as established by EPA:

(A) Industries subject to Federal EPA Categorical Standards:

i. Industries subject to Federal EPA Categorical Standards;

ii. Industries discharging toxic substances, prohibited pollutants, but who are not subject to Federal EPA Categorical Standards;

iii. Industries discharging or having the potential to discharge compatible conventional (BOD, TSS, pH, oil and grease, fecal coliform) pollutant loads in sufficient quantities to cause West Warwick to violate its RIPDES Permit limits or cause interference or organic overloads at the treatment works;

iv. Industries with sanitary or non-toxic discharges using solvents, toxic chemicals and/or hazardous chemicals that could potentially be discharged to the sewers;

v. Industries discharging only sanitary wastes and/or non-toxic discharges;

vi. Dry industries with no waste discharges to the sewers, using solvents, toxic chemicals and/or hazardous chemicals; and

vii. Dry industries with no waste discharges to the sewers.

Industries classified in Categories i, ii and iii are considered significant. Industries classified in Categories iv and v are not considered significant.

The list of Industrial User Classifications is presented in Table 2-1. All Significant Industrial Users that discharge process wastewater and are permitted by the Program are subject to local limits.

TABLE 2-1
TOWN OF WEST WARWICK
INDUSTRIAL USER CLASSIFICATION

Industry	Street Address	Classification
COVENTRY, RI		
CAL Chemical	592 Arnold Rd.	v
Colonial Machine & Tool	5 Salvas Ave.	v
Rhodes Technologies	500 Washington St.	i
Rhodes Pharmaceuticals	500 Washington St.	i
Rhodes Technologies	498 Washington St.	i
WARWICK, RI		
Arlington R.V. Supercenter	99 Telmore Rd.	v
Grimes Box Company	112 Telmore Rd.	v
Warwick Ice Cream	743 Bald Hill Rd.	i
WEST GREENWICH, RI		
G-Tech	West Greenwich Industrial Park	v
Waukesha Bearings	20 Technology Way	v
Immunex of RI (a/k/a Amgen, Inc.)	40 Technology Way	iii
WEST WARWICK, RI		
Advanced Interconnects	5 Energy Way	v
American Power Conversion	1600 Division Rd.	v
Amtrol, Inc.	1400 Division Rd.	iii
AOA Machine	1372 Main St.	v
Astro-Med, Inc.	East Greenwich Ave.	v
Chase Machine Co., Inc.	324 Washington St.	v
Clyde Press	1387 Main St.	v
Corbro Manufacturing	100 Pulaski St.	v
Cox Cable	9 James P. Murphy Highway	v
Cramik Corp.	183 Washington St.	v
Crompton Woodworking	108 Pond St.	v
Culligan Water Conditioning	149 James P. Murphy Highway	v
Custom Craft, Inc.	48 Maple Ave.	v
Deery Tool & Engineering, Inc.	1654 Main St.	v
Ethide Laboratories, Inc	1300 Main St.	iv
F. DiZoglio & Sons	111 Energy Way	v
Dryvit Systems, Inc.	One Energy Way	v
L. Gadoury Oil	226 Washington St.	v
Gaspee Enterprises, Inc.	245 Quaker Lane	v
Graphic Press	17 Providence St.	v

TABLE 2-1 TOWN OF WEST WARWICK INDUSTRIAL USER CLASSIFICATION		
Industry	**Street Address**	**Classification**
Guild Tool & Engineering Co.	20 Pike St.	v
Kent County Daily News	1353 Main St.	v
K.G.C., Inc.	245 Quaker Lane	vii
KLM Company	28 Aster St.	v
Lincoln Energy Corp.	195 James P. Murphy Highway	v
Lumetta, Inc.	69 Aster St.	v
Mereco Technologies	1505 Main St.	v
New England Testing Laboratory Inc.	59 Greenhill St.	iv
New England Union Co.	Hay St.	v
Original Bradford Soap Works	200 Providence St.	i
Paul Arpin Van Lines	99 James P. Murphy Highway	v
Quality Thermoforming	25 James P. Murphy Highway	v
R.I. Label Works	14 Clyde Ave.	v
Snow Findings	14 Sheldon St.	v
Standard Mill Machinery	1370 Main St.	v
West Warwick Screw Products Co., Inc.	15 Factory St.	v

Categorical industries are subject to limits that are equal to or more stringent than categorical pretreatment standards.

2.2 REVISIONS TO INDUSTRIAL USER CLASSIFICATION

Rhodes Technologies (500 Washington St.), Rhodes Pharmaceuticals (500 Washington St.) and Original Bradford Soap Works were listed as Categorical Industries.

2.3 COMMERCIAL LISTINGS

Table 2-2 indicates establishments which are currently under jurisdiction of the Program's grease trap requirements.

Table 2-3 presents the list of Dental Office Category users. This title was changed this year due to Federal regulation (40 CFR 441). The Program has sent out certification letters and expect to have the certifications returned by September 2018.

Table 2-4 presents the photo finishers list.

Table 2-5 lists all users subject to the grit trap requirements, while Table 2-6 lists users subject to lint trap requirements.

2.4 REVISIONS TO COMMERCIAL LISTINGS

The majority of commercial changes involved backfilling existing commercial sites. There have been few new connections this season.

Changes to the **Grease Interceptor List (Table 2-2)** are as follows:

- **Indigo Pizza & Lounge was replaced by Bean Barn, Inc.**
- **Marathon Bread opened at 1030 Tiogue Ave., Coventry**
- **American Piezo opened at 289 Cowesett Ave., West Warwick**
- **Hannabel's Cafe & Cakery, LLC at 289 Cowesett Ave., West Warwick closed**
- **Cake Station at 289 Cowesett Ave., West Warwick closed**
- **Sunoco Subway at 629 Bald Hill Rd., Warwick closed**
- **Ciantro Grill at 712 Centre of New England Blvd., Coventry closed**

Changes to the **Dental Office Category List (Table 2-3)** include:

Dr. Frederick S. Lury was taken off the list

Changes to the **Silver User List/Photo Finishers List (Table 2-4)** include:

- **No changes**

Changes to the **Grit Trap List (Table 2-5)** include:

- **No changes**

Changes to the **Lint Trap List (Table 2-6)** include:

- **LaQunita Inn was added to the list**
- **Tumble Town opened at 1705 Main St., West Warwick**

TABLE 2-2
GREASE INTERCEPTOR LIST

COMPANY NAME	STREET#	STREET	TOWN / CITY	OWNER	OWNER'S ADDRESS	STATUS
Dunkin Donuts	2270	New London Turnpike	Coventry, RI 02816			ACTIVE
Bean Barn, Inc.	**599**	**Tiogue Ave.**	**Coventry, RI 02816**	**MD Properties, LLC**	**35 Kiley Way, Coventry, RI 02816**	ACTIVE
Marathon Bread	**1030**	**Tiogue Ave.**	**Coventry, RI 02816**	**Coventry Plaza, LLC**	**46 Howard Street, Paxton, MA 01612**	ACTIVE
Sherri's Come Along Inn, LLC	402	Washington St.	Coventry, RI 02816	Fred Marsocci	270 Shippee Plat Rd.	ACTIVE
JW's Pub, Inc.	433	Washington St.	Coventry, RI 02816	George Wu	79 Caporal St., Coventry, RI 02816	Active
Cumberland Farms Inc. #1205	704	Main St.	West Warwick, RI 02893	165 Flanders Rd	Westborough, MA 01581	ACTIVE
Condesa Mexican Restaurant	**719**	**Quaker Lane**	**West Warwick, RI 02893**	**QVM LLC, c/o Stone Tower Properties**	**545 S Main St., Providence, RI 02903**	ACTIVE
Brookdale Centre of New England	600	Centre of New England Blvd	Coventry, RI 02816	BKD New England Bay LLC	500 N DEARBORN ST, SUITE 400, CHICAGO IL 60654	ACTIVE
Wal-Mart Super Center	650	Centre of New England Blvd	Coventry, RI 02816	Wal-Mart Stores, Inc.	2001 SE10th St., Bentonville, AR 72716	ACTIVE
BJ's Wholesale Club	790	Centre of New England Blvd	Coventry, RI 02816	BJ's Wholesale Club	Commerce Park Associates 5 LLC	ACTIVE
Applebee's	830	Centre of New England Blvd	Coventry, RI 02816	Applebee's, c/o Commerce Park Realty Assoc.	207 Quaker Lane, 3rd Floor, West Warwick, RI 02893	ACTIVE
Hampton Inn	850	Centre of New England Blvd	Coventry, RI 02816			ACTIVE
Dave's Marketplace	23	Coventry Shoppers Plark	Coventry, RI 02816	Soscia Enterprises		ACTIVE
Dunkin Donuts	24	Coventry Shoppers Plark	Coventry, RI 02816	Soscia Enterprises		ACTIVE
Riverview Healthcare Community	546	Main Street	Coventry, RI 02816	Riverview Nursing Home	546 Main St., Coventry, RI 02816	ACTIVE
Harris Bar and Grill	666	Main Street	Coventry, RI 02816	Melansi, Vasilios	705 Main St.	ACTIVE
Silver Lake Pizza	1146	Main Street	Coventry, RI 02816	Eleni Fidas		ACTIVE
Bella's Sports Pub	1152	Main Street	Coventry, RI 02816	BC Property, Inc.	1152 Main St., Coventry, RI 02816	ACTIVE
Cumberland Farms Inc.	2293	New London TPK	Coventry, RI 02816	Cumberland Farms Inc.	100 Crossing Boulevard,Framingham, MA 01702	ACTIVE
Wendy's Restaurant	2311	New London TPK	Coventry, RI 02816	Oceanview Foods, Inc.	887 Greenwich Av. Warwick RI 02886	ACTIVE
Mealworks	1600	Nooseneck Hill Road	Coventry, RI 02816	Mealworks, c/o VSH Realty, Inc., Attn: A/P V40605	777 Dedham St., Canton, MA 02021-1484	ACTIVE
Cumberalnd Farms Nooseneck	1600	Nooseneck Hill Road	Coventry, RI 02816	Cumberland Farms ,	100 Crossing Blvd Framingham, MA 01702	ACTIVE
Westcott House	1650	Nooseneck Hill Road	Coventry, RI 02816	Boston Neck Realty Corp.		ACTIVE
The Olde Theater Diner	33	Sandy Bottom Rd.	Coventry, RI 02816	Melanis, George	15 Sandy Bottom Road, Coventry, RI 02816	ACTIVE
The Cozy Grill	473	Tiogue Ave.	Coventry, RI 02816	Jason Pilderian		ACTIVE
Fat Belly's Irish Pub and Grille	760	Tiogue Ave.	Coventry, RI 02816	Kaufman Properties	187 North Main street, P.O. Box 1384 Providence RI 02901	ACTIVE
Borrelli's Pastry Shop	765	Tiogue Ave.	Coventry, RI 02816	Borrelli, Alexander P. & June M.	765 Tiogue Ave., Coventry, RI 02816	ACTIVE
Newport Creamery	781	Tiogue Ave.	Coventry, RI 02816	Renaissance Development Corp.	35 Sockanosset Crossroads, Cranston 02920	ACTIVE
Taco Bell	784	Tiogue Ave.	Coventry, RI 02816	L/M Taco RI, Inc., Attn: Mary, Accounts Payable	45 Walpole St., Suite 6, Norwood, MA 02062	ACTIVE
Cumberland Farms	789	Tiogue Ave.	Coventry, RI 02816	Cumberland Farms	777 Dedham St., Canton, MA 02021-1484	ACTIVE
D'Angelos	795	Tiogue Ave.	Coventry, RI 02816	Kaufman Associates Inc.	PO Box 1384, Providence, RI 02901	ACTIVE
DePetrillo's Pizza & Bakery	797	Tiogue Ave.	Coventry, RI 02816	Kaufman Associates Inc.	PO Box 1384, Providence, RI 02901	ACTIVE
Dunkin Donuts	800	Tiogue Ave.	Coventry, RI 02816	Henderson, John & Delores	25 Greenhill Way , East Greenwich RI 02818	ACTIVE
Tom's Market	821	Tiogue Ave.	Coventry, RI 02816	DeAngelis, Thomas	36 River Run, East Greenwhich, RI 02818	ACTIVE
Kentucky Fried Chicken	824	Tiogue Ave.	Coventry, RI 02816	Nerard, Inc.	118 Comstock Ave, Providence , RI 02903	ACTIVE
Stop & Shop Store 720	900	Tiogue Ave.	Coventry, RI 02816	Purity Supreme / Stop & Shop 10-720, c/o Churchill & Banks Properties	167 Point St., Providence, RI 02903	ACTIVE
Filippou's Twisted Pizzeria Coventry LLC	915	Tiogue Ave.	Coventry, RI 02816	Simas Properties, LLC	165 Lakehurst Ave., Coventry, RI 02816	ACTIVE
Gellinas Ice Cream	975	Tiogue Ave.	Coventry, RI 02816	Karapatakis, Steve D.	851 South Road, East Greenwich, RI 02816	ACTIVE
China Star	1028	Tiogue Ave.	Coventry, RI 02816	Coventry Plaza, LLC	46 Howard Street, Paxton, MA 01612	ACTIVE
Papa Gino's, Inc.	1080	Tiogue Ave.	Coventry, RI 02816	Papa Gino's, Inc.	600 Providence Hwy., Dedham, MA 02026-6848	ACTIVE
McDonald's Corporation	1100	Tiogue Ave.	Coventry, RI 02816	McDonald's Corporation	c/o Joseph Napoli, P.O. Box 2313, Hanover, MA 02339	ACTIVE

TABLE 2-2
GREASE INTERCEPTOR LIST

COMPANY NAME	STREET#	STREET	TOWN / CITY	OWNER	OWNER'S ADDRESS	STATUS
LaQuinta Inn	4	Universal Bld	Coventry, RI 02816			ACTIVE
Britay's Deli &Catering, LLC	435	Washington St.	Coventry, RI 02816	426 Coventry Reality	383 Smithfield Ave. Pawtucket, RI 02860	ACTIVE
A. Pagliarini's Family Restaurant, Inc.	637	Washington St.	Coventry, RI 02816	Nelmore Realty	1375 Warwick Ave., Warwick, RI	ACTIVE
Haven Health Center of Coventry	10	Woodland Drive	Coventry, RI 02816	Coventry Health Center / Brookside Villa	Attn: Carol A. Mancini, 10 Woodland Dr., Coventry, RI 02816-6715	ACTIVE
Dave's Marketplace	1000	Division Street	East Greenwich, RI 02818	E & A Portofolio Limited Partnership	1901 Main St., Suite 900, Columbia, SC 29201	ACTIVE
Panera Bread	1000	Division Street	East Greenwich, RI 02818	E & A Portfolio Limited Partnership	1901 Main St., Suite 900, Columbia, SC 29201	ACTIVE
Dave's Commissary	1000	Division Street	East Greenwich, RI 02818	E & A Portfolio Limited Partnership	1901 Main St., Suite 900, Columbia, SC 29201	ACTIVE
McDonald's	1000	Division Street	East Greenwich, RI 02818	E & A Portfolio Limited Partnership	1901 Main St., Suite 900, Columbia, SC 29201	ACTIVE
Ruby Tuesdays	1000	Division Street	East Greenwich, RI 02818	E & A Portfolio Limited Partnership	1901 Main St., Suite 900, Columbia, SC 29201	ACTIVE
Piezone	1000	Division Street	East Greenwich, RI 02818	E & A Portfolio Limited Partnership		ACTIVE
Outback Steakhouse	1000	Division Street	East Greenwich, RI 02818	E & A Portfolio Limited Partnership	1901 Main St., Suite 900, Columbia, SC 29201	ACTIVE
McDonald's Corporation	2500	New london Turnpike	East Greenwich, RI 02818	McDonald's Corporation	Springs, FL, 32701	ACTIVE
Sunoco Subway	629	Bald Hill Rd.	Warwick , RI 02886	Kokila Arvid Metha LLC	629 Bald Hill Road, Warwick , RI 02886	ACTIVE
Dunkin Donuts	699	Bald Hill Rd.	Warwick , RI 02886	Epstein Rhode Island, LLC	6 State St.	ACTIVE
Warwick Ice Cream	743	Bald Hill Road	Warwick , RI 02886	Bucci, Thomas	743 Bald Hill Rd.	ACTIVE
Taco Bell	877	Bald Hill Road	Warwick , RI 02886	L/M TacoRI, Inc.d.b.a.Taco Bell Corp.	79 North Main St.,Mansfield, MA 02048	ACTIVE
Chick-fil-A, Inc	1500	Bald Hill Road	Warwick , RI 02886	Link Commercial Properties, LLC	1150 New London Ave., Cranston, RI 02920	ACTIVE
The Power Bar	1500	Bald Hill Road	Warwick , RI 02886	Bald Hill Management LLC c/o The Grossman Co	859 Willard Street, Suite 501, Quincy, MA 02169	ACTIVE
Bob's Furniture	1500	Bald Hill Road	Warwick , RI 02886	Charter Warwick	8441 Cooper Creek Blvd., University Park, FL 34201	ACTIVE
TGI Friday's	989	Centerville Road	Warwick , RI 02886	ARC CAFEHLDOO1. LLC	American Realty Capital,200 Dryden Rd E, Suite 1100,Dresher, PA 19025-1067	ACTIVE
The Treehouse Tavern	1094	Centerville Road	Warwick , RI 02886	Gerard, Aline C. & Gerald J.	c/o 1200 Main St.	ACTIVE
1149	1149	Division Street	Warwick , RI 02886	J.T. Development Group	1149 Division St.	ACTIVE
Dunkin Donuts	1239	Division Street	Warwick , RI 02886	Kingston Management Co., LLC	Rock Donuts/Attn: J. Catafalmo, 251 Smith St., Providence, RI 02903	ACTIVE
Valley Country Club	251	New London Ave.	Warwick , RI 02886	Sixty, Inc., c/o Valley Country Club	251 New London Ave., Warwick, RI 02886	ACTIVE
Subway	345	Providence St.	Warwick , RI 02886	Honey Dew Donuts, c/o Whitney Group, Inc.	Attn: Alex Kaufman, P.O. Box 1384, Providence, RI 02901	ACTIVE
Ampex Brands Pizza of NE, Inc. d/b/a Pizza Hut Pi	10	Quaker Lane	Warwick , RI 02886	Edward P. Flannagn Jr.	80 Umiak Ave.,Jamestown, RI 02835	ACTIVE
Coffee Plus (Kent County Courthouse)	200	Quaker Lane	Warwick , RI 02886	Kent County Courthouse, State of RI Facilities & Operations	Attn: Julie Good, 250 Benefit St., Room 418	ACTIVE
Stop & Shop	300	Quaker Lane	Warwick , RI 02886	AC Cowesett Purchaser, c/o AMCAP, Inc.	1281 East Main St., Suite 200	ACTIVE
Three Dragons, Inc. (d/b/a New Asia House)	300	Quaker Lane	Warwick , RI 02886	AC Cowesett Purchaser, c/o AMCAP, Inc.	1281 East Main St., Suite 200	ACTIVE
Five Guy's Burgers & Fries	300	Quaker Lane	Warwick , RI 02886	AC Cowesett Purchaser, c/o AMCAP, Inc.	1281 East Main St., Suite 200	ACTIVE
Moe's Southwest Grill	300	Quaker Lane	Warwick , RI 02886	AC Cowesett Purchaser, c/o AMCAP, Inc.	1281 East Main St., Suite 200	ACTIVE
Side By Each Inc. d/b/a Menchies 281	300	Quaker Lane	Warwick , RI 02886	AC Cowesett Purchaser, c/o AMCAP, Inc.	1281 East Main St., Suite 200	ACTIVE
Applebee's Neighborhood Grill & Bar	300	Quaker Lane	Warwick , RI 02886	SPP Real Estate(Cowesett) Inc.c/o TA AssociatesRealty	28 state st 10 th floor , Boston MA 02109	ACTIVE
Agaves,LLC d/b/a Agave's Mexican Grill	444	Quaker Lane	Warwick , RI 02886	Quaker Real Estate Enterprises, LLC	2790 South County Trail, East Greenwich, RI 02818	ACTIVE
Denny's	444	Quaker Lane	Warwick , RI 02886	Quaker Real Estate Enterprises, LLC	2790 South County Trail, East Greenwich, RI 02818	ACTIVE
Met Life	700	Quaker Lane	Warwick , RI 02886	Met Life, Attn: David Chen, One Met Life Plaza - Area 5C	2701 Queens Plaza North, Long Island City, NY 11101	ACTIVE
Wendy's Restaurant	926	Quaker Lane	Warwick , RI 02886	Bald Hill Foods, Inc., c/o Robert D. Wieck, Esq.	101 Dyer St., Providence, RI 02903	ACTIVE
Texas Roadhouse	1200	Quaker Lane	Warwick , RI 02886	Texas Roadhouse of Warwick, LLC	6040 Dutchmans Lane, Louisville, KY 40205	ACTIVE
Showcase Cinemas	1200	Quaker Lane	Warwick , RI 02886	Nairi, Inc., Attn: Accounts Payable	200 Elm St., Dedham, MA 02026	ACTIVE
Classic Deli	24 C	Quaker Lane	Warwick , RI 02886	KLP Properties LLC	560 Aquidneck Ave Middletown, RI 02842	ACTIVE
Residence Inn by Marriot	775	Centre of New England Blvd	West Greenwich, RI 02917	Rhode Island Heritage Inn of West Greenwich	1201 Page Dr., Fargo, ND 58103	ACTIVE

TABLE 2-2
GREASE INTERCEPTOR LIST

COMPANY NAME	STREET#	STREET	TOWN / CITY	OWNER	OWNER'S ADDRESS	STATUS
Denny's Dinner	795	Centre of New England Blvd	West Greenwich, RI 02917	CKL Diners, LLC	Commerce Park Realty, LLC, 207 Quaker Lane, West Warwick, RI 02893	ACTIVE
Cracker Barrel Store 452	825	Centre of New England Blvd	West Greenwich, RI 02917	Cracker Barrel Store 452, Attn: Accounts Payable	P.O. Box 787	ACTIVE
Immunex RI	40	Technology Way	West Greenwich, RI 02917	Immunex of Rhode Island, Attn: Steve Bryant	40 Technology Way, West Greenwich, RI 02817	ACTIVE
G-Tech	55	Technology Way	West Greenwich, RI 02917	G-TECH / WGI, Attn: Rick Ellis	55 Technology Way, West Greenwich, RI 02817-1717	ACTIVE
JC Butcher Shop	65	Brookside Ave.	West Warwick, RI 02893	Ana Matos		ACTIVE
Maisie Quinn Elementry School	1	Brown Street	West Warwick, RI 02893	West Warwick Public Schools	10 Harris Avenue, West Warwick, RI 02893	ACTIVE
On the Roch's	1593 1595	Centerville Road	West Warwick, RI 02893	Roch, Jerome D.	1595 Centerville Rd., Warwick, RI 02886-4251	ACTIVE
West Warwick Elks #1697	60	Clyde St.	West Warwick, RI 02893	West Warwick Lodge No. 1697 of Elks of the U.S.A.	60 Clyde St.	ACTIVE
Fresco Also Inc d/b/a Fresco	115	Cowesett Ave.	West Warwick, RI 02893	Schiavulli, Dominic	36 East Hopkins Rd., North Scituate, RI 02857	ACTIVE
Cowesett Inn	226	Cowesett Ave.	West Warwick, RI 02893	Cowesett Inn, Inc.	226 Cowesett Ave.	ACTIVE
Azo's Pizza	250	Cowesett Ave.	West Warwick, RI 02893	Reservoir Realty Co., Inc.	141 Power Rd., Pawtucket, RI 02860	ACTIVE
Khoo Restaurant LLC	255	Cowesett Ave.	West Warwick, RI 02893	Reservoir Realty Co., Inc.		ACTIVE
Dunkin Donuts	275	Cowesett Ave.	West Warwick, RI 02893	Henderson Realty	c/o Dunkin Donuts, 275 Cowesett Ave.	ACTIVE
Cumberland Farms	280	Cowesett Ave.	West Warwick, RI 02893	Cumberland Farms	100 Crossing Boulevard, Framingham, MA 01702	ACTIVE
Cowesett Subway LLC d/b/a Subway	289	Cowesett Ave.	West Warwick, RI 02893	U S A Realty, Inc.	293 Cowesett Ave., S/1, West Warwick, RI 02893	ACTIVE
Silver Crystal	289	Cowesett Ave.	West Warwick, RI 02893	U S A Realty, Inc.	293 Cowesett Ave., S/1, West Warwick, RI 02893	ACTIVE
Cowesett Pizza	306	Cowesett Ave.	West Warwick, RI 02893	Albert S. Castelli Sr	151 Drum Rock Rd. Warwick, RI 02886	ACTIVE
Riccotti's	250	Cowwesett Ave	West Warwick, RI 02893	Ronald OaksReservior Realty	141 power Road , Pawtucket, RI 02860	ACTIVE
Millonzi's	11	Curson St.	West Warwick, RI 02893	Lombardi, Dominic	88 West Warwick Ave., West Warwick, RI 02893	ACTIVE
Amtrol, Inc.	1400	Division Rd.	West Warwick, RI 02893	Amtrol, Inc.	1400 Division Road	ACTIVE
Papa Gino's	700	East Greenwich Ave.	West Warwick, RI 02893	Quaker Valley Mall Associates	600 Providence Hwy., Dedham, MA 02026-6848	ACTIVE
West Warwick Senior Citizens Center Inc	20	Factory St.	West Warwick, RI 02893	West Warwick Seniors Building Fund, Inc.	8 Factory St.	ACTIVE
Greenbush Elementary School	127	Greenbush Road	West Warwick, RI 02893	West Warwick Public Schools	10 Harris Avenue, West Warwick, RI 02893	ACTIVE
Crompton Veterans Organization	37	Hepburn St.	West Warwick, RI 02893	Crompton Veterans Organization World War II	37 Hepburn St.	ACTIVE
Cox Communication	9	James P. Murphy Hgwy	West Warwick, RI 02893	Cox Communications	11 Comstock Parkway, Cranston, RI 02921	ACTIVE
West View Health Care	239	Legris Ave.	West Warwick, RI 02893	Quaker Associates, c/o P.F.C. Corporation	C/O West View Health Care, 239 Legris Ave.	ACTIVE
Cumberland Farms	295	Legris Ave.	West Warwick, RI 02893	Cumberland Farms	100 Crossing Bld. Frqamingham, MA 01702	ACTIVE
Bill's Place	707	Main St.	West Warwick, RI 02893	Melanis, Vasilios	705 Main St.	ACTIVE
Phenix Sportsmens Club	715	Main St.	West Warwick, RI 02893	Phenix Sportsmens Club	715 Main St.	ACTIVE
Fraternal order of Eagles	826	Main St.	West Warwick, RI 02893	Warwick Area No. 1313 Fraternal Order of Eagles	826 Main St.	ACTIVE
Club Instruccao e Recreio Portuguez	918	Main St.	West Warwick, RI 02893	Club Instruccao E Recreio Portuguez	918 Main St. West Warwick, RI	ACTIVE
Sweet November. Inc. d/b/a Messy's Cafe	919	Main St.	West Warwick, RI 02893	BSK Enterprises, Inc.	P.O. Box 1131	ACTIVE
Subway	923	Main St.	West Warwick, RI 02893	Riggins, John	1420 Main St., Coventry, RI 02816	ACTIVE
Diggy's Ice Cream	925	Main St.	West Warwick, RI 02893	Riggins, John	1420 Main St., Coventry, RI 02816	ACTIVE
Our Family Diner	943	Main St.	West Warwick, RI 02893	Rossi, Joe	11 Lakewood Dr, Johnston, RI 02919	ACTIVE
Domino's Pizza	957	Main St.	West Warwick, RI 02893	J.A.P. Realty	54 Contour Road, Warwick, RI 02886	ACTIVE
Clyde Donuts inc.	960	Main St.	West Warwick, RI 02893	970 Main Street Realty, LLC	970 Main St.	ACTIVE
Fen's Express	975	Main St.	West Warwick, RI 02893	Fanigan, Ed	981 A Main St., West Warwick, RI 02893	ACTIVE
Ronzio Pizza & Subs	1013	Main St.	West Warwick, RI 02893	Harutun Auakyan	22 Briar Hill Drive, Cranston, RI 02921	ACTIVE
Club Fomtenac/Touch of Class Catering	1143	Main St.	West Warwick, RI 02893	Club Frontenac, Inc.	1143 Main St.	ACTIVE
D'Angelo Sandwich Shop	1199	Main St.	West Warwick, RI 02893	Jonasa Realty, Inc.	1231 Main St.	ACTIVE
The Panini Club	1207	Main St.	West Warwick, RI 02893	Ilias I. Zarokostas	Ilias I. Zarokostas	ACTIVE
Matos Bakery Inc.	1236	Main St.	West Warwick, RI 02893	Matos, Marco	23 Chestnut St., Cumberland, RI 02864	ACTIVE

TABLE 2-2
GREASE INTERCEPTOR LIST

COMPANY NAME	STREET#	STREET	TOWN / CITY	OWNER	OWNER'S ADDRESS	STATUS
Ferucci's New York System	1246	Main St.	West Warwick, RI 02893	O'Brien, Robin	33 West Warwick Ave.	ACTIVE
A J's Restaurant	1365	Main St.	West Warwick, RI 02893	Brown, Arthur	183 Greenbush Rd.	ACTIVE
Roch's Market	1475	Main St.	West Warwick, RI 02893	Ting Chan	1475 Main St.	ACTIVE
Famous Lefas Pizza, Inc.	1738	Main St.	West Warwick, RI 02893	Famous Pizza, Inc.	1738 Main St.	ACTIVE
Gel 's Kitchen Inc.	1745	Main St.	West Warwick, RI 02893	Mutual Properties New London, LLC / Rhode Island Limited Liability Co.	One James P. Murphy Hwy.	ACTIVE
A Taste Of China	1745	Main St.	West Warwick, RI 02893	Mutual Properties New London, LLC / Rhode Island Limited Liability Co.	One James P. Murphy Hwy.	ACTIVE
Cumberland Farms Inc.	704-712	Main St.	West Warwick, RI 02893	Cumberland Farms	100 Crossing Bld. Frqamingham, MA 01702	ACTIVE
Ye express	1117	Main Street	West Warwick, RI 02893	Wu Qing Ye	1117 Main Street,West Warwick, RI 02893	ACTIVE
Phenix Square Restaurant	9	Pleasant St.	West Warwick, RI 02893	Lucas, Alan P.	90 Hawthorne St.	ACTIVE
Spring Villa, Inc.	59	Pleasant St.	West Warwick, RI 02893	PIANKA PROPERTIES LLC		ACTIVE
Jerry's Supermarket	25	Providence St.	West Warwick, RI 02893	Jerry's Supermarket, Inc., c/o BRS Real Estate	22 Coventry Shoppers Park	ACTIVE
All Stars	49	Providence St.	West Warwick, RI 02893	Blain, David D.. Et Ux, Blain, Kay E. TE	140 Wakefield St.	ACTIVE
House of Wu & Chen	52	Providence St.	West Warwick, RI 02893	Wu, George & May , Trustees, Wu Living Trust	52 Providence St.	ACTIVE
Providence Donuts Inc. (d/b/a Dunkin Donuts)	283	Providence St.	West Warwick, RI 02893	Lacroix, Roy A. & Nancy E. TE	1988 Phenix Ave.	ACTIVE
RC Enlerprises, Inc. (d/b/a Wicked Good Pizza of West Warwi	291	Providence St.	West Warwick, RI 02893	Ho, Henry	3 Lantern Lane, West Roxbury, MA 02132	ACTIVE
Fuse Bar & Grill, LLC (d/b/a Millworks Tavern)	293	Providence St.	West Warwick, RI 02893	Ho, Henry	3 Lantern Lane, West Roxbury, MA 02132	ACTIVE
Alexis Ice cream	300	Providence St.	West Warwick, RI 02893	John Capwell	721 Mattesun Rd., Coventry, RI 02816	ACTIVE
Westcott House of Pizza	346	Providence St.	West Warwick, RI 02893	Amerada Hess Corporation	One Hess Plaza, Woodbridge, NJ 07095 Attn: John Rockwell	ACTIVE
Ruiqing Lei, Inc. (d/b/a Fu Ming West Warwick)	350	Providence St.	West Warwick, RI 02893	Amerada Hess Corporation	One Hess Plaza, Woodbridge, NJ 07095 Attn: John Rockwell	ACTIVE
Filippou's Twisted Pizza West Warwick, Inc	570	Providence St.	West Warwick, RI 02893	SJNF Realty, LLC	P.O. Box 1595, North Kingstown, RI 02852	ACTIVE
Mixed Grill (Post 74)	681	Providence St.	West Warwick, RI 02893	Vitalo, Paul	681 Providence St., West Warwick RI	ACTIVE
Friendly Guy Pizza	53	Providence St.	West Warwick, RI 02893	Richard Houle	53 Providence St.	ACTIVE
Emilio's Bakery Inc.	35	Quaker Lane	West Warwick, RI 02893	UNIVERSAL TRUCK & EQUIPMENT	35 Quaker Lane West Warwick, RI 02893	ACTIVE
Miss Cranston Diner II, LLC	45	Quaker Lane	West Warwick, RI 02893	Miss Cranston II Realty LLC	45 Quaker Lane, West Warwick, RI	ACTIVE
KFC of America	305	Quaker Lane	West Warwick, RI 02893	Joe's Service Station	ARI Corporation, 88 Woodcove Dr.	ACTIVE
Aquillante's Bistro & Tavern	701	Quaker Lane	West Warwick, RI 02893	QVM LLC, c/o Stone Tower Properties	545 S Main St., Providence, RI 02903	ACTIVE
Aloha Pizza	126	Robert St.	West Warwick, RI 02893	ZBIGNIEW, c/o Aloha Pizza	126 Robert St.	ACTIVE
West Warwick Country Club	335	Wakefield St.	West Warwick, RI 02893	Forewest Group, LLC	450 Wakefield St.	ACTIVE
Wakefield Heights Elementry School	505	Wakefield St.	West Warwick, RI 02893	Town of West Warwick	1170 Main St.	ACTIVE
Hong Kong Restaurant	77	Washington St.	West Warwick, RI 02893	Sit, Kwok Kin & Jian Hua TE	1516 Frenchtown Rd.	ACTIVE
West Warwick Senior Center	145	Washington St.	West Warwick, RI 02893	West Warwick Dept. of Human Services	145 washington	ACTIVE
Tides Family Services	215	Washington St.	West Warwick, RI 02893	BROS OF CHRISTIAN SCHOOLS	215 Washington	ACTIVE
L A Cafe	245	Washington St.	West Warwick, RI 02893	Anzevina Realty, LLC	245 Washington St.	ACTIVE
Café Jericho	257	Washington St.	West Warwick, RI 02893	Forcier, Lillian & Raymond O.	66 Sagamore St., Warwick, RI 02886	ACTIVE
Bone Heads Wing Bar, Inc.	131-133	Washington St.	West Warwick, RI 02893	Aristocrat Properties		ACTIVE
West Warwick High School	1	Webster Knight Dr.	West Warwick, RI 02893	Town of West Warwick	1170 Main St.	ACTIVE
Robert Donahue Pizza, Inc.d/b/a Donahue Pizza	72	West Warwick Ave.	West Warwick, RI 02893	Donahue, Robert	65 Maple Valley Road, Coventry RI 02816	ACTIVE
West Donuts Inc. d/b/a Dunkin Donuts	88	West Warwick Ave.	West Warwick, RI 02893	Domenic Lombardi Realty	Attn: Dunkin Donuts, P.O. Box 456, West Warwick, RI 02893	ACTIVE

TABLE 2-3
SILVER USER LIST
DENTAL OFFICE CATEGORY

PARCEL ID	ACCOUNT NO.	#	LOCATION		USER	OWNER
838-0124-0-001	CV-8192-00-SW	121	Sandy Bottom Rd.	Coventry	Erik George, DMD	Erik George, DMD
828-1200-0-000	CV-9201-61-SW	325	South Main St.	Coventry	Dr. Jamie M. Italiane-DeCubellis	Luca Realty
241-0034-1-000	WA-2182-00-SW	1775	Bald Hill Road	Warwick	Pediatric Dental Care of Rhode Island, Inc	Superior Renalty
250-0005-0-000	WA-2190-00-SW	1121	Centerville Rd.	Warwick	Alfred J. Coletti	Alfred J. Coletti
028-0544-0-000	13-1956-00-SW	247 251	Quake Lane	West Warwick	Wayne Mollohan, DMD	Cumberland, RI 02864
241-0028-0-000	WA-2166-00-SW	80	Quaker Lane	Warwick	Jaimini A. Desai, D.M.D., Inc.	Baltic Quaker, LLC
253-0010-0-000	WA-2875-00-SW	1120	Tollgate Rd.	Warwick	Dr. Wilfred Sancianco	RPB Properties
028-0274-0-000	01-0589-00-SW	336	Cowesett Ave.	West Warwick	Dr. Antony Tilelli, DDS	Appolonia, Erma J. Trustee of
004-0081-0-000	01-0613-00-SW	1079	Main St.	West Warwick	Dr. Albert Arcand, DDS	Arcand Management, LLC
005-0626-0-000	05-0180-00-SW	1219	Main St.	West Warwick	Thundermist Health Assoc., Inc.	Thundermist Health Assoc. Inc.
006-0086-0-000	07-0404-10-SW	1425	Main St.	West Warwick	Dr. Andrew Gazerro DDS	Cris An, LLC
010-0448-0-000	07-0840-00-SW	64	Tiogue Ave.	West Warwick	Dr. Richard Barkin, DDS	Giusti, Margaret

TABLE 2-4
SILVER USER LIST
PHOTO FINISHERS

PARCEL ID	ACCOUNT NO.	#	LOCATION	USER	OWNER	
009-0610-0-000	01-0746-50-SW	1	Cowesett Ave.	Walgreen's	Artista West Warwick, LLC	450 Station Ave., Yarmouth, MA 02664
910-0006-0-000	EG-9001-00-SW	1000	Division St.	Walgreen's	E & A Portfolio Limited Partnership	Attn: Property Accounting, 1901 Main St., Suite 900
005-0148-0-000	13-0547-00-SW	1125	Main St.	CVS	Marnett Corporation - CVS #00397-01	c/o ACIS - Mail Stop 363, P.O. Box 36280
005-0023-0-000	16-0015-61-SW	1185	Main St.	Brooks	P J C Realty Co., Inc.	c/o Brooks Pharmacy
009-0008-0-000	13-0284-00-SW	1734	Main St.	CVS	Main St. Remainder Business Trust	CVS #2323-01, c/o Propety Tax Dept.
007-3400-0-000	CV-9201-88-SW CV-9201-89-SW	2250	New London Turnpike	CVS	Eagle America Investo, LLC	64 Old North Road, Coventry, RI
040-0147-0-000	05-0008-80-SW	834	Providence St.	CVS	East Avenue Realty	CVS #02384-02, c/o ACIS - Mail Stop 363, P.O. Box 36280
838-0105-0-000	CV-8108-00-SW	763	Tiogue Ave.	CVS	Coventry Lake CVS #00621-01	c/o ACIS - Mail Stop 363, P.O. Box 36280
029-0025		875	Tiogue Ave.	Walgreen's	Artista Development	520 Providence Highway, Suite 9, Norwood, MA 02762

TABLE 2-5
GRIT TRAP LIST

Parcel ID	#	Location	User	Owner	Owner Address	Status
249-0014-0-000	51	Aster St.	Balise Collision Repair Center	BAR RI2, LLC	1400 Post Road, Warwick, RI 02888	ACTIVE
260-0010-0-000	857	Bald Hill Rd.	Bald Hill Car Wash	MARACAP, LLC	1615 Pontiac Ave., Cranston, RI	ACTIVE
249-0003-0-000	1390	Bald Hill Rd.	Scrub-a- Dub	R & D Realty (d/b/a Scrub-A-Dub)	172 Worcester Rd.	ACTIVE
013-0552-0-000	1515	Bald Hill Rd.	Inskip Motors	Inskip, UAG West Bay AM, LLC	1515 Bald Hill Rd.	ACTIVE
028-0418-0-000	1035	Ball Hill Rd.	Bald Hill Dodge, Chrysler & Kia, Inc.	Bald Hill Realty	1035 Bald Hill Rd.	ACTIVE
029-0415-0-000	1075	Centerville Rd.	Inskip Motors	Car War LLC, Capital Automotive	8270 Greensboro, Dr., #950, McLean, VA 22102	ACTIVE
master meter	140	Centre of New England Blvd.	Romancing the Stone Inc.	MNZ Realty, LLC	230 Shady Hill Drive, East Greenwich, RI 02818	ACTIVE
028-0396-0-000	650	Centre of New England Blvd.	WAL-MART Supercenter	Wal Mart Stores,Inc	2001 SE10th St., Bentonville, AR 72716	ACTIVE
012-0331-0-000	700	Centre of New England Blvd.	Home Depot	Roadepot & Keyserton, c/o Home Depot USA	P.O. Box 105842	ACTIVE
018-0118-0-000	128	Cowesett Ave.	Sunoco Sevice Center	Carlum, Vincent H. Et Ux	c/o Sun Co., Inc.	ACTIVE
004-0419-0-000	242	Cowesett Ave.	Cowesett Car Wash	Colbea Enterprises LLC		ACTIVE
017-0041-0-000	265	Cowesett Ave.	Ultra Carwash	Dimension Associates, Inc.	265 Cowesett Ave.	ACTIVE
009-0098-0-000	294	Cowesett Ave.	Shell Food Mart	ABAA Investments, LLC	195 James P. Murphy Hwy.	ACTIVE
010-0103-0-000	99	James P. Murphy Hwy.	Paul Aspin	Rhode Island Idustrial Facilities Corp.	c/o Arpin Associates	ACTIVE
829-0078-0-000	938	Main St.	Euro Motor Car	Maglioli, Enrico & Filomena	Maglioli, Antonio JT	ACTIVE
017-0015-0-000	1086	Main St.	Metropolitan Gas Station	Zampa, Lena (Sole Trustee)	1086 Main St.	ACTIVE
035-0010-0-000	1657	Main St.	Scotti's Auto Body Inc Ca	Lima, Abel L.	411 Cowesett Rd.	ACTIVE
039-0213-0-000	1776 1780	Main St.	Texaco	Begos, Frank Jr. & Alvira and Begos, Bonnie Co.-Trustees of the Alvira	Begos Revocable Trust	ACTIVE
002-0477-0-000	1612	Nooseneck Hill Rd.	Starbright Carwash	Boston Neck Realty Corp., c/o John Assalone	1A Liena Rose Way	ACTIVE
029-0041-0-000	334	Providence St.	Barber's Auto Sales & Body Works	Folgo Realty, LLC	334 Providence St.	ACTIVE
029-0019-0-000	929	Providence St.	Brookfield Sevice Station	Silva, Paul & Adelaide	271 Country View Dr.	ACTIVE
029-0390-0-000	185 125	Providence St.	Royal Mills at Riverpoint (Ace Dye)	Striver Brothers Eccles & Rouse	Rising Sun's Mill	ACTIVE
226-0013-0-000	375	Quaker Lane	Pep Boys	Pep Boys (Manny, Joe & Jack of Delaware, Attn: Tax Dept.)	P.O. Box 5720	ACTIVE
03-0658-70-SW	509	Quaker Lane	Balise Honda of West Warwick	BAR RI2, LLC	1400 Post Road, Warwick, RI 02888	ACTIVE
226-0003-0-000	525	Quaker Lane	Balise Volkswagen	Balise	A RI Corp.	ACTIVE
	561	Quaker Lane	Balise Subaru, Inc.	QLP-1. LLC	122 Doty Circle, Wesl Springfield. MA 01089	ACTIVE
215-0030-0-000	870	Quaker Lane	Tesla	Century Properties, c/o Mark Sjoberg	200 Centerville Rd.	INACTIVE
	885	Quaker Lane	Speedcraft Acura LLC	Speedcraft Acura LLC		ACTIVE
028-0551-0-000	883	Quaker Lane	Speedcraft Nissan LLC	Speedcraft Nissan LLC	883 Quaker Lane West warwick, RI 02893	ACTIVE
010-0449-0-000	966	Quaker Lane	Arlington R.V. Supercenter Inc	SLS Realty	966 Quaker Lane	ACTIVE
010-0011-0-000	1190	Quaker Lane	Shell Carwash	Colbea Enterprises, LLC	2050 Plainfield Pike	ACTIVE
010-0426-0-000	697 693	Quaker Lane	Jenning Bros.	QVM, LLC	c/o Stone Tower Properties	ACTIVE
006-0791-0-000	60	Tiogue Ave.	Astro Wrecker Service	Cotnoir, James ½ Undiv. Int. & J.E. & T.W. Andrade ½ Int.	24 MacArthur Blvd.	ACTIVE

TABLE 2-5
GRIT TRAP LIST

Parcel ID	#	Location	User	Owner	Owner Address	Status
003-0305-0-000	93	Tiogue Ave.	West Warwick Auto	Casacalenda, Philip	93 Tiogue Ave.	ACTIVE
262-0133-0-000	291	Washington St.	Kostyla Service STA	Kostyla Service Station, Inc.	291 Washington St.	ACTIVE
master meter	6	Westly St.	Harrison Auto Body	HAYDEN HARRISON F	6 Westly St.	ACTIVE
CV-8181-00-SW	561	Quaker Lane	Balise Subaru	QLP-1. LLC	122 Doty Circle. Wesl Springfield. MA 01089	ACTIVE
	2	Szydlo Drive	Virginia Transportation Corp.	141	141 James Murphy Hgwy, West Warwick RI	ACTIVE
master meter	755	Centre of New England Bld.	Bridgestone Retail Operations, LLC d/b/a Firestone	Bridgestone Retail Operations, LLC	535 Marriott Drive, Nashville, TN 37214	ACTIVE

TABLE 2-6
LINT TRAP USER LIST

Parcel ID	Account No.	#	Location	User	Owner	Owner Address
007-0266-0-000	12-2418-01-SW	88	West Warwick Ave.	Riz Laundromat	Dominic Lombardi Realty, Attn: Laundry	P.O. Box 456
273-0001-0-000	WA-2838-00-SW	245	West Natick Rd.	Extended Stay	BRE/ESA Prop. LLC, c/o Blackstone Real Estate Acquisition IV, LLC	P.O. Box 2440
		4	Universal Blvd.	LaQunita Inn	MYSTIC HARIKRISHNA, LLC	4 UNIVERSAL BL
010-0181-0-000	18-1496-70-SW	71	Tiogue Ave.	Cleanery	Mitura, Diane E. & Krzysztof JT	9 Maplewood Dr., Coventry, RI
006-0172-0-000	03-1258-40-SW	126	Robert St.	Arctic Laundromat	Mitura, Elizbieta & Zbigniew TE	291 Pulaski St., Coventry, RI
240-0001-0-000	WA-2140-00-SW	300	Quaker Lane, Warwick	Deluxe Cleaners	AC Cowesett Purchaser LLC, c/o AMCAP, Inc.	1281 East Main St., Suite 200
240-0001-0-001	WA-2140-00-SW WA-2141-00-SW	300	Quaker lane	Petco	AC Cowesett Purchaser LLC, c/o AMCAP, Inc.	1281 East Main St., Suite 200
029-0390-0-000	03-1123-00-SW	693	Quaker Lane	Superb Cleaners	QVM LLC	c/o Stone Tower Properties
036-0076-0-000	02-1177-75-SW	560	Providence St.	Thorpes Laundromat	Bochner, Ronald S. & Meredith A. TE	49 Crest Dr., Cranston, RI
		59	Pleasant St.	Spring Villa, Inc.	Pianka Properties Inc.	57 Mountaindale Road Smithfield, RI 02917
828-0078-0-000	CV-8076-00-SW	1612	Nooseneck Hill Rd.	Star Bright Laundry	Boston Neck Realty Corp., Attn: ASCO Group	1A Liena Rose Way
029-0137-0-000	01-0084-00-SW	22	Monterey Dr.	Kansal's One Stop Laundry & Dry Cleaning		
004-0214-0-000	18-0355-00-SW	1015	MainSt.	Ray's Polyclean	Ray's Polyclean Centers, Inc.	1015 Main St.
002-0581-0-000	12-2179-00-SW	755	Main St.	Hudson's Dry Cleaners & Laundromat Inc	Levy Barry, Et Ux Levy, Dorothy JT	755 Main St.
030-0092-0-000	11-0295-20-SW	10	Keyes Way	Comfort Suites	NEHA/RUCHI LLC	d/b/a Comfort Suites
030-0083-0-000	18-0657-20-SW	14	James P. Murphy Hwy.	Fairfield Suites	Kent Hotel Associates LP	One Citizens Plaza, Suite 810
		685	East Ave.	East Avenue Laundromat	Marley-Cole, Jennifer	P.O. box 9493, Warwick, RI 02889
030-0032-0-000	05-0222-50-SW	1235	Divison Road	Extended Stay	ESA Rhode Island, Inc., c/o BRE/ESA Properties, LLC	c/o Blackstone Real Estate ACQ IV
	WA-2141-00-SW	1	Coventry Shoppers Park	Crystal Cleaners	Marcotte, William	1 Coventry Shoppers Park
		600	Centre of New England Blvd.	BKD New England Bay, LLC d/b/a Brookdale	Coventry Care Group, LLC	5307 Mockingbird Lane, Dallas, TX 75206
		637	Centre of New England Blvd.	RI Heritage Inn of West Greenwich	RI Heritage Inn of West Greenwich	1201 Page Dr., Fargo, ND 58103
807-0006-0-000	CV-8162-10-SW	850	Centre of New England Blvd.	Hampton Inn	Coventry Lodging Associates, LLC (d/b/a Hampton Inn, Coventry)	8441 Copper Creek Blvd.
009-0072-0-000	13-1148-50-SW	1705	Main St.	Tumble town	JAC Realty	2408 Warwick Ave., Warwick, RI 02889

CHAPTER 3.0

3.0 MONITORING ACTIVITIES

The monitoring of industries located within the West Warwick sewer service region is conducted using several different methods. The purpose of this section is to elaborate on these various methods.

SELF-MONITORING

Industries classified as Class i, ii, iii are required to self-monitor their production wastewater and report results to the Industrial Pretreatment Program. The self-monitoring is done on a quarterly basis.

ANNUAL SIU INSPECTIONS

The West Warwick Industrial Pretreatment Program conducts yearly inspections of all Significant Industrial Users (SIUs) located within the service area, as specified by 40CFR403.12(B)(2)(v). Annual inspections are conducted in accordance with the guidance manual entitled Industrial User Inspection and Sampling Manual for POTW's, Environmental Protection Agency, April 1994.

In addition to the annual inspections, the Industrial Pretreatment Program also conducts random surprise inspections (or visits) to any industrial facility (SIU or otherwise) it deems necessary. In general, each SIU is randomly visited (unannounced) in order to discuss pretreatment events or problems. Occasionally, even a brief tour of the facility is conducted in order to assure continued compliance with pretreatment requirements, or simply just to express an interest in the company. Such visits are not deemed as "official" inspections, as no standard checklist is followed, and the reasons for said visit may vary based upon the time of year and type of industry. Such visits may also be in response to problems existing at the Treatment Facility or in the collection system. Such visits may be conducted at the largest industrial user in the region, or at the smallest commercial facility. Under most conditions, these "miscellaneous inspections" are conducted randomly, and are documented by inter-office memorandums. Should the situation or circumstance warrant documentation in the form of a letter, or in extreme cases an enforcement action and permit issuance by the Program, then the inspection is documented in the appropriate format.

PERIODIC NON-SIU INSPECTIONS

It has been a longstanding policy of the Program to express a "hands on" interest of all commercial and industrial users of the service area. In 2017 and 2018, the Program continued the unannounced visits to many users, especially restaurants, with regards to grease interceptor requirements, and gas stations for oil/water separators.

2017 – 2018 INSPECTIONS

All of the Significant Industrial Users were given Annual SIU Inspections and sampled by the Program, as demonstrated in Table 3-1. During the reporting year, all SIUs were inspected. The date of the sample is when the last sample is collected. The testing coincided with the inspection in most cases.

TABLE 3-1
SIU INSPECTION CHECKLIST

Industry	Permit No.	Date Inspected	Date Tested
Amtrol	WW-033	3/29/18	3/29/18
Bradford Soap Works	WW-008	10/17/17-10/18/17	10/17/17-10/18/17
Immunex of Rhode Island (Amgen)	WW-020	12/4/17-12/5/17	12/4/17-12/5/17
Warwick Ice Cream	W-01	9/12/18-9/13/18	9/12/18-9/13/18
Rhodes Technologies 498 Washington	C-34	5/3/18	5/2/18
Rhodes Technologies 500 Washington	C-35	5/8/18-5/9/18	5/8/18-5/9/18
Rhodes Pharmaceuticals 500 Washington	C-36	5/8/18-5/9/18	5/8/18-5/9/18

CHAPTER 4.0

4.0 ENFORCEMENT ACTIVITIES

The purpose of this section is to review permitting and enforcement activities of the West Warwick Industrial Pretreatment Facility over the previous reporting year.

4.1 PERMITTING

The Industrial Pretreatment Program currently permits seven (7) Significant Industrial Users. Two users have a categorical process; none discharge prohibited pollutants; five (5) discharge conventional pollutants; and no Significant Industrial Users have the potential of discharging pollutants into the collection system. Each permit issued to a User that discharges production wastewater into the collection system contains, at a minimum, the following requirements:

(A) Statement of duration (in no case more than five years);

(B) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;

(C) Effluent limits based on applicable general pretreatment standards in 40CFR403 categorical pretreatment standards, local limits, and State and local law;

(D) Quarterly self-monitoring, sampling, reporting, notification and record keeping requirements, including an identification of pollutants to be monitored, sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in part 403, categorical pretreatment standards, local limits, and State and local law;

(E) Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule;

(F) Fact Sheet; and

(G) Graphic delineation of sample location, if applicable.

In summary, the permits issued by the Program are in accordance with 40CFR403.8(f)(iii).

The modifications reflect the following changes:

- The permit for Amtrol was modified to clearly state the facility is a significant Industrial user.

- The Permit for Rhodes Technologies (498 Washington Street, Coventry) was modified to reflect the facility is connected in accordance with the Coventry–West Warwick Intermunicipal Agreement

- Rhodes Technologies (500 Washington Street, Coventry) had similar reference to the Intermunicipal Agreement and the historical average was included in the Fact Sheet

4.2 PERMITTING ACTIONS

TABLE 4-1
SIU PERMIT CHECKLIST

Industry	Permit No.	Date Issued	Expiration Date	New Permit Issued	Type	New Permit Expires
Amtrol	WW-033	Feb. 21, 2012	Feb. 28, 2015	Feb. 20, 2015 Apr. 25, 2018	Renewal	Feb. 28, 2020
Bradford Soap Works	WW-008	Mar. 15, 2013	Mar. 31, 2016	Mar. 17, 2016	Renewal	Mar. 17, 2021
Immunex of RI (Amgen)	WW-020	Feb 5, 2013	Mar. 31, 2015	Mar. 24, 2015	Renewal	Mar. 31, 2020
Rhodes Technologies	C- 34	Mar 15, 2013 Nov. 25, 2013	Mar. 31, 2015	Mar. 24, 2015 Apr. 25, 2018	Renewal	Mar. 31, 2020
Warwick Ice Cream	W-01	Feb. 15, 2013 Jan. 27, 2015	Feb. 28, 2016	Feb.25, 2016	Renewal	Feb. 28, 2020
Rhodes Technologies 500 Washington St.	C-35	May 27, 2014	May 31, 2019	May 27, 2014 July 28, 2015 Apr. 25, 2018	Renewal	May 31, 2019
Rhodes Pharmaceuticals, L.P. 500 Washington St.	C-36	May 20, 2013 Oct. 11, 2013 Nov. 6, 2013	May 31, 2014	May 27, 2014	Renewal	May 31, 2019

4.3 PERMIT BREAKDOWN

The following is a summary of the classifications of each SIU serviced by the Regional Facility:

CATEGORICAL INDUSTRIES

Rhodes Technologies (Pharmaceutical [Chemical Synthesis Products]) SIC: 2024 / Flow: 8,708 GPD) was originally issued a categorical permit in the 4th quarter of 2010.

Warwick Ice Cream has been designated a Categorical User without Categorical standards. The User is classified under Dairy Products processing point source category Subpart H-Ice Cream, Frozen Desserts, Novelties and Other Dairy Desserts Subcategory.

Flow: 9,907 GPD.

This year, additional companies have been moved into the categorical list based on comments from the Pretreatment Compliance Audit. These industries have point source categories but do not have pretreatment standards.

Original Bradford Soap Works: The user is a soap manufacturer (by batch kettle) as described in 40 CFR 417. No Pretreatment standards apply.

Rhodes Technologies, 500 Washington St. and Rhodes Pharmaceuticals, L.P are pharmaceutical research facilities defined in 40 CFR 439 (E). No Pretreatment standards apply.

A brief descriptive summary of these industries is presented in Table 4-2.

TABLE 4-2
CATEGORICAL SIU DESCRIPTION

Rhodes Technologies Pharmaceutical (40 CFR 439.37) SIC: 3433 Flow: 7,870 GPD	Warwick Ice Cream Ice Cream Maker Dairy products processing point source category Subpart H—Ice Cream, Frozen Desserts, Novelties and Other Dairy Desserts Subcategory 40 CFR 405.84 SIC: 2024 Flow: 4,989 GPD
Original Bradford Soap Works Soap Manufacturer SIC: 2841 Flow: 7,133 GPD	Rhodes Technologies, 500 Washington St. Pharmaceutical Research SIC 2834 Flow: 379 GPD
Rhodes Pharmaceuticals, L.P, 500 Washington St. Pharmaceutical Research SIC 2834 Flow:7,217 GPD	

INDUSTRIES DISCHARGING TOXIC OR PROHIBITED POLLUTANTS

There are no industries served by the Program which are classified as discharging toxic or prohibited pollutants.

SIGNIFICANT NON-CATEGORICAL INDUSTRIES

Currently, the Town of West Warwick has listed five (5) significant, non-categorical industries. A brief descriptive summary of these industries is presented in Table 4-3.

TABLE 4 - 3 NON-CATEGORICAL SIU DESCRIPTION	
Immunex of Rhode Island, a subsidiary of Amgen, Inc. Pharmaceutical (not covered under 40 CFR 439) SIC: 3433 Flow: 102,601GPD	Amtrol, Inc. Metal Tank Manufacturer SIC: 3433 Flow: 3,736 GPD

POTENTIAL DISCHARGERS

Both Cal Chemical and Dryvit Systems have "Zero" process discharge. These Users are considered non-significant, but are issued a permit and required to submit certification (twice per year) that no process waste is discharged. The industries may, in the future, elect to discharge. These users are not included in the report, as they are categorized as non-significant. The reason for the reporting is related to billing purposes. These users certify (on a semi-annual basis) that their facility has no process wastestream.

In addition, Ethide Laboratories and New England Testing Laboratory, Inc. have been issued non-significant wastewater permits, but will also be required to report twice a year. In this case, the users will also provide analytical data. Both industries have stringent collection and handing polices and the vast majority of the waste is shipped off site. The volume discharged to the sewer from the process is less than 100 gallons per day (mainly from washing of glassware).

PROPOSED DISCHARGERS

Boston Scientific (8 Industrial Drive, Coventry) has submitted additional information regarding the process and a potential treatment system. The company will install the equipment and test the discharge prior to a permit being issued. The discharge will continue to be trucked offsite until the discharge is accepted. The facility sterilizes pre-packaged medical equipment using Ethylene Oxide.

COMPLETE SIU SUMMARY

Table 4-4 (at the end of this chapter) has been prepared in order to provide a quick but accurate representation of the permitted industrial users previously discussed. This table gives a unique perspective not only to the size of the industry, but also to the volume of pollutants (both conventional nutrients and metals). As can be seen, only one of the dischargers contributes large quantities (over 25,000 GPD) of wastewater, with high organic and nutrient concentrations. A review of the metal results reveals no serious metal contributions.

4.4 ENFORCEMENT ACTION SUMMARY

UNRESOLVED ISSUES

The results for the second quarter of 2018 showed Warwick Ice cream exceeded the permit limit for the parameter of oil and grease (O&G). Due to the timing, the facility will re-test and report after the close of the year.

ENFORCEMENT 2017 - 2018

The past reporting year was one in which compliance was generally achieved by the permitted facilities. Overall, compliance with local industrial limitations for Metals and Cyanide were accomplished. The following are the official enforcement actions taken by the Program. Not included are letters issued by the Program to resolve simple matters or obtain information. A Notice of Violation is denoted by "**NOV**". A Notice of Violation that is considered significant, as defined by 40CFR403.8(F)(2), is denoted by "**SNOV**".

Immunex of Rhode Island (a subsidiary of Amgen, Inc.) No enforcement action.

Amtrol

Self-Monitoring Repot for the first quarter 2018 showed the results for the parameter of oil and grease (O&G) on March 7, 2018 was 280 mg/l, and on March 29, 2018 the level of O&G was found to be 317 mg/l, exceeding the permit limit of 100 mg/l. The violation was determined to be significant based on the technical review criteria (TRC). An **SNOV** was issued which required the user to re-test, submit a report regarding the plan to avoid future violations, and submit a $500.00 administrative penalty.

The Self-Monitoring Report for the month of April 2018 showed the results for the parameter of oil and grease (O&G). On April 4, 2018 the level of O&G was 150 mg/l, and on April 5, 2018 the level of O&G was found to be 140 mg/l, exceeding the permit limit of 100 mg/l. The violation was determined to be significant based on the TRC. An **SNOV** was issued which required the user to re-test, submit a report regarding the plan to avoid future violations, and submit a $500.00 administrative penalty.

The Self-Monitoring Report for May 20, 2018 showed the results for the parameter of oil and grease (O&G) was 140 mg/l, exceeding the permit limit of 100 mg/l. The violation was not determined to be significant. An **NOV** was issued which required the user to re-test, submit a report regarding the plan to avoid future violations, and submit a $500.00 administrative penalty.

The enforcement was not escalated based on the cooperation of the user which hired a consultant and make process changes to the pretreatment system. The user returned to compliance.

Original Bradford Soap Works No enforcement action.

Warwick Ice Cream

The results for June 18, 2018 indicated the facility exceeded the permit limits for the parameter of oil and grease (O&G). The permit limit for O&G is 100 mg/l and the results showed the concentration to be 170 mg/l. The violation was not determined to be significant. An **NOV** was issued which required the user to re-test in July. Due to the timing, the results will be reported next year.

Rhodes Technologies (498 Washington St.)

The Self-Monitoring Report submitted for the month of March 2018 showed the level of Acetone was 9.1 mg/l, exceeding the categorical monthly maximum of 8.2 mg/l. The violation was not found to be significant. An **NOV** was issued which required the user to re-test and investigate the cause of the incident. The user re tested and returned to compliance.

Rhodes Technologies (500 Washington St.) No enforcement action.

Rhodes Pharmaceuticals, L.P. (500 Washington St.) No enforcement action.

PRETREATMENT ANNUAL REPORT SUMMARY AND SNC NOTICE

The Pretreatment Annual Report Summary (PARS) is presented in Appendix A. The ad was published in the Providence Journal on September 27, 2017 and is presented in Appendix B. The ad for this year is presented in Appendix C.

4.5 NOTIFICATION OF SUBSTANTIAL CHANGE IN VOLUME OR CHARACTER OF POLLUTANTS

There was no notification of substantial change in volume or character of pollutants.

4.6 REPORTING

AMTROL			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
3rd QTR 2017	10/15/2017	9/25/2017	
4th QTR 2017	1/15/2018	1/8/2018	
1st QTR 2018	4/15/2018	4/6/2018	O&G

AMTROL			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
April SMR 2018	5/15/2018	5/1/2018	O&G
May SMR 2018	6/15/2018	6/7/2018	O&G
2nd QTR 2018	7/15/2018	7/11/2018	

IMMUNEX OF RHODE ISLAND			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
July-September 2017	10/15/2017	10/11/2017	
October-December 2017	1/15/2017	1/5/2017	
January-March 2018	4/15/2018	4/5/2018	
April- June 2018	7/15/2018	7/16/2018	

ORIGINAL BRADFORD SOAP WORKS			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
July-September 2017	10/15/2017	10/10/2017	
October-December 2017	1/15/2018	1/9/2018	
January-March 2018	4/15/2018	4/6/2018	
April- June 2018	7/15/2018	7/9/2018	

WARWICK ICE CREAM			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
July-September 2017	10/15/2017	10/13/2017	
October-December 2017	1/15/2018	1/12/2018	
January-March 2018	4/15/2018	4/12/2018	
April- June 2018	7/15/2018	7/13/2018	O&G

RHODES TECHNOLOGIES			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
Jul-17	8/15/2017	8/14/2017	
Aug-17	9/15/2017	9/14/2017	
July-September 2017	10/15/2017	10/11/2017	
Oct-17	11/15/2017	11/10/2017	
Nov-17	12/15/2017	12/15/2017	
October-December 2017	1/15/2018	1/15/2018	
Jan-18	2/15/2018	2/13/2018	
Feb-18	3/15/2018	3/15/2018	
January-March 2018	4/15/2018	4/13/2018	Acetone (monthly

RHODES TECHNOLOGIES			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
Apr-18	5/15/2018	5/15/2018	
May-18	6/15/2018	6/8/2018	
April-June 2018	7/15/2018	7/12/2018	

RHODES TECHNOLOGIES (500 Washington St.)			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
July-Dec 2017	1/15/2018	1/12/2018	
April 2018	6/15/2018	6/8/2018	
Jan-June 2018	7/15/2018	7/13/208	

RHODES PHARMACEUTICALS, L.P. (500 Washington St.)			
Reporting Period	**Due Date**	**Date Received**	**Type of Violation**
July-Dec 2017	1/15/2018	1/12/2018	
April 2018	6/15/2018	6/8/2018	
Jan-June 2018	7/15/2018	7/13/2018	

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

AMTROL, INC.
1400 DIVISION ROAD, PO BOX 1008
WEST WARWICK, RI, 02893
CONTACT: ROBERT PERROTTI

PERMIT NUMBER: WW-033
PHONE: 884-6300
FAX: 885-2567

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS

*DENOTES TRIAL RUN DATA
BLUE TYPEFACE INDICATES "LESS THAN" VALUE
GREEN TYPEFACE INDICATES SAMPLING BY PRETREATMENT PROGRAM
RED BORDER INDICATES A VIOLATION

	LIMITS:	2,000	2,000	N.A.	100	20	700	800	150	1	1,000	240	600	190	QUARTERLY					1,000		
	FLOW (gpd)	BOD (mg/l)	TSS (mg/l)	COD (mg/l)	O&G (mg/l)	CADMIUM (ug/l	CHROM. (ug/l	COPPER (ug/l	LEAD (ug/l	MERCURY (ug/l	NICKEL (ug/l	SILVER (ug/l	ZINC (ug/l	CYANIDE (ug/l	FLOW (gals.)	pH	pH	pH	pH	PHENOL (ug/l	T.NITRO (mg/l)	PHOS (mg/l)
9/6/2017	4,678	3	27	2,600	2.1	1	6.8	19	5.8	0.2	6.4	2	56	10		9.0	9.0	9.0	9.0	29	163	13
9/7/2017	4,842	630	16	3,400	7.7	1	11.0	22	14	0.2	6.2	2	75	10	323,698	9.0	9.0	9.0	9.0	10	185	12
12/5/2017	2,308	360	140	2,300	4.8	1	3.5	50	5.5	0.2	5.6	1	31	10		9.2	9.2	9.2	9.2	10	235	29
12/6/2017	2,496	430	230	2,400	12	1	3.9	69	10	0.2	4.9	1	43	10	192,972	9.3	9.3	9.3	9.3	20	213	9.6
3/29/2018		1,270	49	8,340	317	0.2	8	35	11	2.0	16.8	2	104	52		8	8.4	8.5	8.4	184	225	11
3/7/2018	2,513	1,100	90	7,500	280	2	11.0	67.0	13	0.5	12	2	160	60		9.1	9.0	9.0	9.0	20	220	4.3
3/8/2018	4,665	1,300	53	6,000	58	2	14.0	56.0	20	0.5	8	2	110	30	236,260	9.1	9.1	9.1	9.1	20	220	4.3
4/4/2018	2,371				150																	
4/5/2018	5,015				140																	
5/17/2018	4,108				12																	
5/18/2018	4,015				15																	
5/19/2018	4,298				14																	
5/20/2018	4,301				140																	
5/30/2018	4,480				11																	
6/12/2018	2,082	430	13	2,900	7.8	5	10	32.0	5	0.2	12	10	62	38		9.1	9.1	9.1	9.1	60	125	32
6/13/2018	4,485	530	28	3,700	3.3	5	10	78.0	5.6	0.2	10	10	38	18	329,144	9.1	9.1	9.1	9.1	60	125	22
6/14/2018	2,321				34											9.0	9.0	9.0	9.0			
6/15/2018	4,536				34											9.1	9.1	9.1	9.1			
Average	**4,030**	**981**	**96**	**4,273**	**95**	**6**	**26**	**322**	**53**	**0.5**	**28**	**12**	**456**	**31**	**2,394,393**	**8.6**	**8.6**	**8.6**	**8.6**	**284**	**138**	**51**
Average '17- "18	**3,736**	**919**	**77**	**5,136**	**76**	**3**	**12**	**258**	**19**	**0.4**	**16**	**7**	**589**	**31**	**290,152**	**9.1**	**9.1**	**9.1**	**9.1**	**68**	**206**	**20**

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

IMMUNEX RHODE ISLAND (a.k.a. AMGEN)
WEST GREENWICH TECHNOLOGY PARK
40 TECHNOLOGY WAY
WEST GREENWICH, RI 02817

CONTACT:Drew Peters
PERMIT NUMBER WW-020
PHONE: (401) 392-8781
FAX: 392-3796

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
PRODUCTION "B"

BLUE TYPE INDICATES "LESS THAN " VALUES.
GREEN TYPE INDICATES PRETREATMENT PROGRAM INSPECTION SAMPLE.

	LIMITS:	2,000	2,000	N.A.	100	20	700	700	1	150	1,000	80	600	190	QUARTERLY	6.0 to 10.0		1000		
	FLOW	BOD	TSS	COD	O&G	CADMIUM	CHROM.	COPPER	MERCURY	LEAD	NICKEL	SILVER	ZINC	CYANIDE	FLOW	pH	pH	PHENOL	PHOSHORUS	T. NITRO
	(gpd)	(mg/l)	(mg/l)	(mg/l)		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	(gals.)	S.U.	S.U.	ug/l		
9/12/2017	108,512	243	100	1,170	5	10	20	155	0.2	20	50	10	56	20	10,656,273	7.9	7.9	100	121	611
9/13/2017	119,056	260	136	987															128	500
12/5/2017	87,024	309	710	1,640	3.4	2	7.5	9.7	0.2	5.8	5	2	108	50		7.5	7.8	34	123	128
12/5/2017	87,024	296	870	1,710	5	10	20	20	0.2	20	50	10	100	20	10,274,564	7.5	7.8	100	105	177
12/6/2017	73,176	179	327	1,130															93	84
3/6/2018	111,336	177	553	900	5	10	20	5	0.2	20	50	10	50	20	10,862,441	8	8.3	100	124	142
3/7/2018	131,296	197	640	1300															120	136
6/5/2018	91,904	54	248	672	6	10	20	80	0.2	20	50	10	62	20	9,285,449	8	7.9	100	81.4	292
6/6/2018	114,080	81	250	807															100	423
AVERAGE	99,106	312	255	996	5	9	19	74	0.4	32	37	9	76	31	8,467,941	8.17	8.27	106	138	285
Average '17-'18	102,601	200	426	1,146	5	8	18	54	0.2	17	41	8	75	26	10,269,682	7.78	7.94	87	111	277

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

ORIGINAL BRADFORD SOAP WORKS
PO BOX 1001, 200 PROVIDENCE STREET
WEST WARWICK, R.I. 02893
CONTACT: CHRISTIAN JEDSON, DIRECTOR OF ENGINEERING

PERMIT NUMBER: WW-008
PHONE: 821-2144
FAX: 821-5960
381-6276

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS

BLUE TYPEFACE INDICATES "LESS THAN" VALUE
GREEN TYPEFACE INDICATES SAMPLING BY PRETREATMENT PROGRAM
YELLOW INDICATES THE PARAMETER EXCEED THE PERMIT LIMIT

	LIMITS:	2,000	2,000	N.A.	20	700	800	150	1	1,000	80	600	190	QUARTERLY					100	1000		
	FLOW (gpd)	BOD (mg/l)	TSS (mg/l)	COD (mg/l)	CADMIUM (µg/l)	CHROM. (µg/l)	COPPER (µg/l)	LEAD (µg/l)	MERCURY (µg/l)	NICKEL (µg/l)	SILVER (µg/l)	ZINC (µg/l)	CYANIDE (µg/l)	FLOW (gals.)	pH	pH	pH	pH	O&G (mg/l)	PHENOL ug/l	T.NITRO (mg/l)	PHOS (mg/l)
																6.0-10s.u.						
9/19/2017	10,976	3.8	15	26	2	3	13	2	0.5	2	2	14	10	104,693	8.9	9.0	9.0	9.2	1.5	10	1.35	0.78
9/20/2017	8,062	3.4	13	27											9.0	9.1	9.2	9.3	1.6	10	1.47	0.68
10/18/2017		8.16	37	63.9	2	2.2	25.9	3	0.2	5	2	38	10									
12/6/2017	10,905	4.1	17	32	2	3.0	10	2	0.5	4	2	8	10	100,638	8.2	8.0	8.5	8.8	2	10	1.45	1.4
12/7/2017	5,412	5.9		32											8.8	8.8	8.8	9.0	1.6	10	1.45	1.1
1/8/2018			14																			
3/21/2018	6,637	7.2	6.7	24	2	2	27	3	0.5	4	2	10	10	198,241	8.9	8.7	8.4	8.2	0.5	10	1.28	0.3
3/22/2018	5,293	5.2	9.3	14											7.8	7.5	7.6	7.5	0.5	10	1.18	0.28
6/18/2018	4,291	3	23	26	2	2	6	2	0.5	14	2	14	10	150,670	6.7	6.8	7.0	7.1	0.7	10	1.30	1.4
6/19/2018	5,490	3	29	26											7.6	7.6	8.1	8.4	0.8	10	1.25	2.8
Average	15,856	1,461	116	2,738	5	22	212	30	0.4	33	11	172	10	1,230,573	8.0	8.0	8.0	8.0	20	28	1.71	1.2
Average '17-'18	7,133	5	18	30	2	2	16	2	0.4	6	2	17	10	138,561	8.2	8.2	8.3	8.4	1	10	1.34	1.1

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

WARWICK ICE CREAM
743 BALD HILL ROAD
WARWICK, RI 02886
CONTACT: TOM OR JERRY BUCCI, PRES,

PERMIT NUMBER: W-01
PHONE: 821-8403
FAX:821-8404

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS

NOTE: BLUE TYPEFACE INDICATES "LESS THAN" VALUE
NOTE: GREEN TYPEFACE INDICATES TOWN SAMPLE

	LIMIT:	2,000	2,000	N.A.	100	6-10 ssu	6-10s.u	6-10s.u	6-10s.u	QUARTERLY	20	700	800	150		1,000	80	600	190	1000		
	FLOW	BOD	TSS	COD	O&G	pH	pH	pH	pH	FLOW	CADMIUM	CHROM.	COPPER	LEAD	MERCURY	NICKEL	SILVER	ZINC	CYANIDE	PHENOL	PHOSPHORUS	T. NITRO
DATE	(gpd)	(mg/l)	(mg/l)	(mg/l)	(mg/l)					GALS.	(µg/l)	(µg/l)	(µg/l)	(µg/l)		(µg/l)	(µg/l)	(µg/l)	(µg/l)			
9/13/2017		801	222	1800	79						2	4.2	50.1	10.0	0.23	8.0	2	130	10		33.5	36.3
9/19/2017	9,633	337	83	644	83	9.0	8.5	8.4	8.4												14.5	14.2
9/20/2017	1,643	191	41	375	52	8.5	8.8	8.2	8.3	388,914											8.7	8.9
12/18/2017	1,249	82	37	193	47	6.2	6.4	7.1	6.5												1.3	7.0
12/19/2017	5,807	200	49	469	95	6.9	8.2	8.4	8.2	336,661											10.6	10.5
3/19/2018	7,019	252	242	525	43	6.5	6.7	6.5	8.4												4.6	46.2
3/20/2018	2,192	3	5	13	53	8.2	8.0	6.9	6.6	290,460											0.8	11.3
6/18/2018	2,815	143	68	752	170	7.3	7.9	8.4	8.3												6.7	10.5
6/19/2018	9,552	514	160	789	65	7.6	8.0	7.0	8.3	387,319											8.5	16.1
Average	3,615	1,095	244	1,800	90	7.1	7.2	7.4	7.5	225,431	3	11	55	20	0.3	14	6	163	10	260	8.7	14
Average '17 -'18	4,989	280	101	618	76	7.5	7.8	7.6	7.9	350,838	2	4	50	10	0.2	8	2	130	10		9.9	18

Attachment B

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

RHODES TECHNOLOGIES
500 WASHINGTON STREET
COVENTRY , RI 02816

CONTACT:Robert E. Deady, Jr.
PERMIT NUMBER C-35
PHONE: ((401) 262-9142

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
PRODUCTION

BLUE TYPE INDICATES "LESS THAN " VALUES.
GREEN TYPE INDICATES PRETREATMENT PROGRAM INSPECTION SAMPLE.

	LIMITS:	2,000	2,000	N.A.	100	20	700	700	1	150	1000	80	600	190	2 QUARTER	6.0 to 10.0				1000		
	FLOW	BOD	TSS	COD	O&G	CADMIUM	CHROM.	COPPER	MERCURY	LEAD	NICKEL	SILVER	ZINC	CYANIDE	FLOW	pH	pH	pH	pH	PHENOL	PHOSHORUS	T. NITRO
	(gpd)	(mg/l)	(mg/l)	(mg/l)		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	(gals.)	S.U.	S.U.	S.U.	S.U.	ug/l	(mg/l)	(mg/l)
12/13/2017	266	5.4	2	16	2.1	2	2.5	22	0.5	2	2	2	19	10	156,210	6.63	7.26	7.32	8.05	10	0.55	0.5
5/9/2018	524	3.2	27.2	179	4.4	2	2	36	0.2	7.8	5	2	63	10		7.05	6.93	6.86	7.41	44	1.20	1.4
5/9/2018	524	3.0	14	12	1.4	2	2	33	0.5	4.0	6.0	2	49	10		7.05	6.93	6.86	7.41	10	1.1	0.8
6/14/2018	202	4.8	31	32	2.7	2	2.9	41	0.5	7.5	5.7	2	84	10	145,691	7.07	7.33	7.26	7.04	10	3.5	1.8
Average	1,203	9	18	57	3.9	2.3	5	33	0.4	12	7	6	82	10	126,138	7.38	7.51	7.66	7.41	22	3.2	2.2
Average '17-'18	379	4	19	60	2.7	2.0	2	33	0.4	5	5	2	54	10	150,951	6.95	7.11	7.08	7.48	19	1.6	1.1

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

RHODES TECHNOLOGIES
500 WASHINGTON STREET
COVENTRY , RI 02816

CONTACT:Robert E. Deady, Jr.
PERMIT NUMBER C-35
PHONE: ((401) 262-9142

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
PRODUCTION

BLUE TYPE INDICATES "LESS THAN " VALUES.
GREEN TYPE INDICATES PRETREATMENT PROGRAM INSPECTION SAMPLE.

	LIMITS:	2,000	2,000	N.A.	100	20	700	700	1	150	1000	80	600	190	2 QUARTER	6.0 to 10.0				1000		
	FLOW	BOD	TSS	COD	O&G	CADMIUM	CHROM.	COPPER	MERCURY	LEAD	NICKEL	SILVER	ZINC	CYANIDE	FLOW	pH	pH	pH	pH	PHENOL	PHOSHORUS	T. NITRO
	(gpd)	(mg/l)	(mg/l)	(mg/l)		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	(gals.)	S.U.	S.U.	S.U.	S.U.	ug/l	(mg/l)	(mg/l)
12/13/2017	266	5.4	2	16	2.1	2	2.5	22	0.5	2	2	2	19	10	156,210	6.63	7.26	7.32	8.05	10	0.55	0.5
5/9/2018	524	3.2	27.2	179	4.4	2	2	36	0.2	7.8	5	2	63	10		7.05	6.93	6.86	7.41	44	1.20	1.4
5/9/2018	524	3.0	14	12	1.4	2	2	33	0.5	4.0	6.0	2	49	10		7.05	6.93	6.86	7.41	10	1.1	0.8
6/14/2018	202	4.8	31	32	2.7	2	2.9	41	0.5	7.5	5.7	2	84	10	145,691	7.07	7.33	7.26	7.04	10	3.5	1.8
Average	1,203	9	18	57	3.9	2.3	5	33	0.4	12	7	6	82	10	126,138	7.38	7.51	7.66	7.41	22	3.2	2.2
Average '17-'18	379	4	19	60	2.7	2.0	2	33	0.4	5	5	2	54	10	150,951	6.95	7.11	7.08	7.48	19	1.6	1.1

RHODES TECHNOLOGIES
498 WASHINGTON STREET
COVENTRY , RI 02816

CONTACT:Robert E. Deady, Jr.
PERMIT NUMBER C-34
PHONE: ((401) 262-9142

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
CATAGORICA LPRODUCTION

Date	FLOW	Acetone	4-methyl-2-pentanone	Isobutyraldehyde	n-Amyl acetate	n-Butyl acetate	Ethyl acetate	Isopropyl acetate	Methyl formate	Isopropyl ether	Tetrahydrofuran	Benzene	Toluene	Xylenes	n-Heptane	n-Hexane	Methylene chloride	Chloroform	1,2-dichloroethane	Chlorobenzene	p-Dichlorobenzene	Diethyl amine	Triethyl amine	Cyanide
DAILY MAX.		20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	9.2 mg/l	3.0 mg/l	.3 mg/l	3.0 mg/l	3.0 mg/l	3.0 mg/l	3.0 mg/l	0.1mg/l	20.7 mg/l	3.0 mg/l	20.7 mg/l	255mg/l	255mg/l	255mg/l
MONTHLY AVE.		8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	3.4 mg/l	0.7mg/l	0.2 mg/l	0.7 mg/l	0.7 mg/l	0.7 mg/l	0.7 mg/l	0.03 mg/l	8.2 mg/l	0.7 mg/l	8.2 mg/l	100 mg/l	100 mg/l	.190mg/l
methord		524.2	524.2	1666	1666	1666	1666	1666	1666	1666	1666	524.2	524.2	1666	1666	1666	524.2	524.2	524.2	524.2	524.2	1666	1666	
9/6/2017	7,579	3.7	0.01	0.01	0.005	0.005	0.01	0.01	0.01	0.005	0.01	0.0005	0.0005	0.01	0.01	0.01	0.0005	0.0081	0.00005	0.00005	0.00005	50	50	0.01
9/7/2017	8,006	3.5	0.01	0.01	0.005	0.005	0.01	0.01	0.01	0.005	0.01	0.0005	0.0005	0.01	0.01	0.01	0.0005	0.0090	0.00005	0.00005	0.00005	50	50	0.01
12/4/2017	8,087	0.58	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0062	0.0057	0.00005	0.00005	0.00005	50	50	0.01
12/5/2017	4,716	0.64	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0059	0.0089	0.00005	0.00005	0.00005	50	50	0.01
3/5/2018	14,540	9.2	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.050	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0007	0.0056	0.00005	0.00005	0.00005	50	50	0.01
3/6/2018	6,423	9.9	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.050	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0018	0.0041	0.00005	0.00005	0.00005	50	50	0.01
3/20/2018	6,985	3.4																						
3/22/2018	7,666	6.5																						
3/26/2018	7,402	7.5																						
3/28/2018	6,485	18																						
4/9/2018	5,037	5.7																						
4/10/2018	3,129	5.1																						
5/2/2018	7,290	1.02	0.05	0.05	0.025	0.025	0.05	0.05	0.5	0.025	0.1	0.005	0.005	0.005	0.05	0.05	0.005	0.005	0.005	0.005	0.005			0.01
5/2/2018	7,290	1.3	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0038	0.052	0.0005	0.0005	0.0005	50	50	0.01
6/7/2018	7,134	9.6	0.01	0.05	0.025	0.025	0.01	0.05	0.025	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.00052	0.0076	0.0005	0.0005	0.0005	50	50	0.01
6/8/2018	8,054	7.7	0.01	0.05	0.025	0.025	0.01	0.05	0.025	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0005	0.0098	0.0005	0.0005	0.0005	50	50	0.01
6/19/2018	9,143	1.8																						
6/20/2018	4,940	0.77																						
AVERAGE	8,906	5.8	0.07	0.03	0.02	0.02	0.03	0.03	0.27	0.02	0.098	0.005	0.006	0.03	0.04	0.03	0.03	0.01	0.01	0.01	0.01	50	50	0.01
Average '17-'18	7,217	5.3	0.01	0.04	0.02	0.02	0.03	0.04	0.31	0.03	0.019	0.001	0.001	0.04	0.04	0.04	0.00	0.01	0.00	0.001	0.00	50	50	0.01

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

RHODES TECHNOLOGIES
498 WASHINGTON STREET
COVENTRY , RI 02816

CONTACT:Robert E. Deady, Jr.
PERMIT NUMBER C-34
PHONE: ((401) 262-9142

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
PRODUCTION "B"

BLUE TYPE INDICATES "LESS THAN " VALUES.
GREEN TYPE INDICATES PRETREATMENT PROGRAM INSPECTION SAMPLE.
RED TYPE INDICATES DATA WHICH IS SUSPECT

	LIMITS:	2,000	2,000	N.A.		100	20	700	700	1	150	1000	80	600	190	QUARTERLY	6.0 to 10.0				1000		
	FLOW	BOD	TSS	COD	TOC	O&G	CADMIUM	CHROM.	COPPER	MERCURY	LEAD	NICKEL	SILVER	ZINC	CYANIDE	FLOW	pH	pH	pH	pH	PHENOL	PHOSHORUS	T. NITRO
	(gpd)	(mg/l)	(mg/l)	(mg/l)	(mg/l)		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	(gals.)	S.U.	S.U.	S.U.	S.U.	ug/l	(mg/l)	(mg/l)
7/10/2017	9,903	31	4	66	2.21																		
8/8/2017	8,690	41	8	65	2.62																		
9/6/2017	7,579	27	4	42	1.63	0.50	2	5	10	0.5	2	2	2	17	10		7.7	7.6	7.4	7.5	10	0.1	0.5
9/7/2017	8,006	23	4	44	1.36	1.20	2	3	4	0.5	2	2	2	15	10	518,840	7.6	7.4	7.2	7.3	10	0.12	0.5
10/9/2017	6,418	30	6	64	1.45																		
11/6/2017	7,922	20	4	35	1.28																		
12/4/2017	8,087	14	4	25	1.56	4.70	2	2	43	0.5	2	5	2	48	10		7.2	7.4	7.3	7.2	10	0.2	0.53
12/5/2017	4,716	8	6	18	1.46	0.50	2	3	28	0.5	2	4	2	36	10	451,674	7.7	7.8	7.6	7.3	10	0.19	0.53
1/9/2018	5,952	73	5	110	1.25																		
2/5/2017	5,652	24	11	140	11.99																		
3/5/2018	14,540	3	11	93	0.21	0.70	2	2	23	0.5	5	5	2	110	10		7.6	7.5	7.6	7.5	10	0.28	1.75
3/6/2018	6,423	36	5	56	0.23	2.80	2	2	13	0.5	2	4	2	64	10	495,255	7.8	7.9	7.8	7.8	10	0.17	0.77
4/4/2018	10,188	21	5	38	0.43																		
5/2/2018	7,290	44	13	108		11.0	2	3.9	36	0.2	12	5	2	251	10		7.7	7.1	7.1	7.2	64	0.177	0.908
5/2/2018	7,290	120	17	76	1.42	1.90	20	20	38	0.5	20	20	20	170	10		7.7	7.1	7.1	7.2	10	0.18	0.7
6/7/2018	7,134	38	8	51	0.48	1.40	2	2.5	21	0.5	19	5	2	79	10		7.2	7.6	7.4	7.6	10	0.12	0.54
6/8/2018	8,006	20	7	29	0.67	2.30	2	2	17	0.5	12	3	2	58	10	505,169	6.6	7.1	7.2	7.2	10	0.14	0.25
AVERAGE	9,529	38	10	122	22.45	2	3	5	27	0	21	8	11	82	10	628,699	7.3	7.3	7.3	7.3	14	0.2	1.4
Average '17-'18	7,870	34	7	62	1.89	3	4	5	23	0	8	5	4	85	10	492,735	7.5	7.5	7.4	7.4	15	0.2	0.7

TABLE 4-4

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

RHODES PHARMA
500 WASHINGTON STREET
COVENTRY , RI 02816

CONTACT:Robert E. Deady, Jr.
PERMIT NUMBER C-34
PHONE: ((401) 262-9142

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
PRODUCTION "B"

BLUE TYPE INDICATES "LESS THAN " VALUES.
GREEN TYPE INDICATES PRETREATMENT PROGRAM INSPECTION SAMPLE.
RED TYPE INDICATES DATA WHICH IS SUSPECT

	LIMITS:	2,000	2,000	N.A.	100	20	700	700	1	150	1000	80	600	190	QUARTERLY	6.0 to 10.0				1000		
	FLOW	BOD	TSS	COD	O&G	CADMIUM	CHROM.	COPPER	MERCURY	LEAD	NICKEL	SILVER	ZINC	CYANIDE	FLOW	pH	pH	pH	pH	PHENOL	PHOSHORUS	T. NITRO
	(gpd)	(mg/l)	(mg/l)	(mg/l)		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	(gals.)	S.U.	S.U.	S.U.	S.U.	ug/l	(mg/l)	(mg/l)
12/13/2018	119	3	2	15	1.8	2	3	69	0.5	2.0	2		32	10	32,440	6.89	6.42	7.11	7.52	10	0.78	0.5
5/9/2018	173	2	10	27	10	2	2	69	0.2	3	5	2	45.3	10		7.10	7.56	7.65	7.84	72.0	1.12	0.4
5/9/2018	173	3	2	19	1.6	2	2	63	0.5	2.0	2	2	37	10		7.10	7.56	7.65	7.84	10	1.1	0.0
6/15/2018	186	3	3	14	1.7	2	2	29	0.5	2	2	2	30	10	36,373	7.44	7.41	7.37	6.68	10	0.9	0.3
AVERAGE	249	4	3	19	4	2	4	96	0.4	11	6	7	35	12	26,693	7.3	7.4	7.8	7.5	21	1	0.7
Average '17-'18	163	3	4	19	4	2	2	57	0.4	2	3	2	36	10	34,407	7.1	7.2	7.4	7.5	26	1	0.3

RHODES TECHNOLOGIES
498 WASHINGTON STREET
COVENTRY , RI 02816

CONTACT:Robert E. Deady, Jr.
PERMIT NUMBER C-34
PHONE: ((401) 262-9142

INDUSTRIAL DISCHARGER WASTEWATER CHARACTERISTICS
CATAGORICA LPRODUCTION

Date	FLOW	Acetone	4-methyl-2-pentanone	Isobutyraldehyde	n-Amyl acetate	n-Butyl acetate	Ethyl acetate	Isopropyl acetate	Methyl formate	Isopropyl ether	Tetrahydrofuran	Benzene	Toluene	Xylenes	n-Heptane	n-Hexane	Methylene chloride	Chloroform	1,2-dichloroethane	Chlorobenzene	0-Dichlorobenzene	Diethyl amine	Triethyl amine	Cyanide
DAILY MAX.		20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	20.7 mg/l	9.2 mg/l	3.0 mg/l	.3 mg/l	3.0 mg/l	3.0 mg/l	3.0 mg/l	3.0 mg/l	0.1mg/l	20.7 mg/l	3.0 mg/l	20.7 mg/l	255mg/l	255mg/l	255mg/l
MONTHLY AVE.		8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	8.2 mg/l	3.4 mg/l	0.7mg/l	0.2 mg/l	0.7 mg/l	0.7 mg/l	0.7 mg/l	0.7 mg/l	0.03 mg/l	8.2 mg/l	0.7 mg/l	8.2 mg/l	100 mg/l	100 mg/l	.190mg/l
methord		524.2	524.2	1666	1666	1666	1666	1666	1666	1666	1666	524.2	524.2	1666	1666	1666	524.2	524.2	524.2	524.2	524.2	1666	1666	
3/5/2018	14,540	9.2	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.050	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0007	0.0056	0.00005	0.00005	0.00005	50	50	0.01
3/6/2018	6,423	9.9	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.050	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0018	0.0041	0.00005	0.00005	0.00005	50	50	0.01
3/20/2018	6,985	3.4																						
3/22/2018	7,666	6.5																						
3/26/2018	7,402	7.5																						
3/28/2018	6,485	18	9.0833333																					
4/9/2018	5,037	5.7																						
4/10/2018	3,129	5.1																						
5/2/2018	7,290	1.02	0.05	0.05	0.025	0.025	0.05	0.05	0.5	0.025	0.1	0.005	0.005	0.005	0.05	0.05	0.005	0.005	0.005	0.005	0.005			0.01
5/2/2018	7,290	1.3	0.01	0.05	0.025	0.025	0.05	0.05	0.5	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0038	0.052	0.0005	0.0005	0.0005	50	50	0.01
6/7/2018	7,134	9.6	0.01	0.05	0.025	0.025	0.01	0.05	0.025	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.00052	0.0076	0.0005	0.0005	0.0005	50	50	0.01
6/8/2018	8,054	7.7	0.01	0.05	0.025	0.025	0.01	0.05	0.025	0.025	0.01	0.0005	0.0005	0.05	0.05	0.05	0.0005	0.0098	0.0005	0.0005	0.0005	50	50	0.01
6/19/2018	9,143	1.8																						
6/20/2018	4,940	0.77																						

CHAPTER 5.0

The purpose of this section is to discuss events which have transpired concerning both the Industrial Pretreatment Program and the West Warwick Treatment Facility, in general, over the past reporting year.

5.1 ACHIEVEMENTS

The reporting year of 2017-2018 was one in which many significant accomplishments were achieved. Below is a brief synopsis of those achievements.

Sewer Subcommittee

The Sewer Subcommittee continued its practice to meet monthly throughout the year and to resolve a variety of sewer and pretreatment related issues. The largest benefit of the Subcommittee is that it requires the participation of two Town Councilors and the Town Manager, the highest ranking officials in Town. The regional counterparts are also invited to attend. Their involvement allows decisions to be rendered quickly and with authority.

The Subcommittee, as well as the Sewer Commission (a/k/a The West Warwick Town Council, the highest governing body of the Town), has taken an active interest in the management of the Treatment Facility. Plant performance, personnel matters, operating budget and pretreatment compliance are all issues with which these committees are involved. The meetings between plant personnel (Director of Administration, Superintendent, and Pretreatment Program) and Subcommittee allow for a free discussion of all sewer-related problems, resulting in the formulation of solutions endorsed by the Town Council members. This approach has resulted in a direct accountability of the various aspects in running the facility, and has enabled quick resolutions to be undertaken when necessary.

Tertiary Treatment

The phosphorus removal system was able to meet the permit limits again this year of 0.1 mg/l. The average discharge for the season was 0.07 mg/l.

The Nitrogen removal system continues to perform well this year. The Treatment Facility was able to reduce the Total Nitrogen levels below permit requirement of 8.0 mg/l. The average for the season was 7.2 mg/l.

The level of Ammonia averaged 0.2 mg/l, meeting the seasonal limit of 2.00 mg/l during the peak season, and 0.16 mg/l for the entire year.

The Copper permit level to 40 µg/l. The plant averaged 3.6 µg/l.

The permit limits, based on the 2008 permit, can be found in Table 5-1.

Intermunicipal Agreements

There have been no changes to the Intermunicipal Agreements.

Collection System Growth

This year, there were few new connections, and no major growth is planned for next year.

The total average flow to the Treatment Facility showed little change with a very slight increase mainly due to seasonal influence.

Inspections

The Industrial Pretreatment Program continued to enforce the Town's grease interceptor requirements regarding proper maintenance and cleaning. As in past years, a main goal of the Program is to provide a present and ongoing relationship with all users in the sewer district. The Program typically performed unscheduled inspections, and in some cases, re-visited establishments to remind all users of their obligations under the Ordinance.

5.2 PROGRAM EFFECTIVENESS

Chapter 6.0 contains a full presentation of the Treatment Plant in graphic form. A review of this data shows that the removal of conventional pollutants has been very successful. Metal concentrations of the effluent are generally not a concern due to the specific industries in the service area. Overall, the Plant's RIPDES compliance has been excellent.

The Enforcement Response Program has proven to be adequate to effectively reduce Significant Noncompliance. This year, there was only one instance of Significant Noncompliance. The use of Consent Orders and Compliance Schedules has proven effective.

TABLE 5-1
WWTF PERMIT LIMITS
(effective December 1, 2008)

Effluent Characteristics	Discharge Limitations Quantity (lbs./day)		
	Avg. Monthly	Max. Daily	Avg. Monthly *(Minimum)
Flow	10.5 MGD	- - -	
BOD_5 (Nov. 1 - May 31)	2,267 lbs./day	4,379 lbs./day	30 mg/l
$CBOD_5$ (Jun. 1 - Jun. 30 & Oct. 1 - Oct. 31)	1,314 lbs./day	1,751 lbs./day	15 mg/l
(Jul. 1 - Sep. 30)	876 lbs./day	1,314 lbs./day	10 mg/l
BOD_5 - % Removal (Nov. 1 - May 31)			85%
$CBOD_5$ - % Removal (Jun. 1 – Oct. 31)			85%
TSS (Nov. 1 - May 31)	2,627 lbs./day	4,379 lbs./day	30 mg/l
(Jun. 1 - Jun. 30 & Oct. 1 - Oct. 31)	2,189 lbs./day	2,627 lbs./day	25 mg/l
(Jul. 1 - Sep. 30)	1,751 lbs./day	2,627 lbs./day	20 mg/l
TSS - % Removal			85%
Fecal Coliform			200 MPN / 100 ml
Total Residual Chlorine (TRC)			20 µg/l
pH		(9.0 ssu)	(6.0 ssu)*
Dissolved Oxygen (Jun. 1 - Oct. 31)			(6.0 mg/l)
Phosphorus, Total (Nov. 1 – Mar. 31)			**1.0 mg/l**
(Apr. 1 – Oct. 31)			**0.1 mg/l**
Ammonia, Total (as N) (Nov. 1 – Apr. 30)			**14.2 mg/l**
(May 1 - May 31)			**5.4 mg/l**
(Jun. 1 - Oct. 31)			**2.0 mg/l**
Nitrogen, Total (TKN + Nitrate + Nitrite, as N)			
(Nov. 1 – April 30)	**- - - lbs/day**		**- - - mg/l**
(May 1 – Oct. 31)	**701 lbs./day**		**8.0 mg/l**
Lead, Total			0.34 µg/l[1]
Zinc, Total			127 µg/l
Copper, Total			**40 µg/l**
Cyanide			7.5 µg/l[1]
Cadmium, Total			1.0 µg/l[1]

[1] The limit at which compliance/noncompliance determinations will be based is the Quantitative Limit which is defined as 10.0 µg/l for Cyanide, and 3.0 µg/l for Lead. These values may be reduced by permit modifications as EPA and the State-approve more sensitive methods.

5.3 LOCAL LIMITS EVALUATION

A Local Limits Derivation was approved in 2008. The new limits became effective February 27, 2008. The local limits are intended to be dynamic and the Program continually tracks and monitors the effects of changes in volumes and characteristics of the influent. A review of the local limits was completed in 2016. The Program continues to monitor the levels of all pollutants of concern and calculate removal efficiencies.

5.4 SUFFICIENCY OF PROGRAM FUNDING AND STAFFING LEVELS

The West Warwick Sewer Commission provided for adequate funding of the Pretreatment Program. The following shows the fees collected for last year from permitting:

Type of Permit	Quantity	Amount
Significant Industrial User Permits	7	$42,000.00
Non-significant Industrial user	2	$ 3,000.00
Grease Interceptor Permit Fees	159	$63,600.00
Grit Traps	40	$10,000.00
Photo Finishing	10	$ 2,000.00
Silver Users	12	$ 1,200.00
Lint Traps	19	$ 3,800.00

The permit fees were re-evaluated in 2010. The fees were adjusted to provide for the projected Program requirements.

In addition to the above list, a new category was added: "Privately Owned Wastewater Treatment Facilities (POTW)". The Program has, in the past, monitored the maintenance of privately owned pumps stations, force mains and collection systems for areas that are known problems. Currently, twenty three (23) private wastewater treatment facilities (collection systems) have been identified. An Operations & Maintenance Manual is now required for each POTW.

The implementation of the Pretreatment Program is contracted to James J. Geremia & Associates, Inc. The full resources of the firm are available to the Program as required. In addition to the Pretreatment Coordinator and the related clerical staff, engineering and technical support are provided. The West Warwick Sewer Commission provides for funding for the Program based entirely on permit fees. All analytical work is conducted by a third party certified laboratory. The staffing and funding is adequate to fully implement the Pretreatment Program.

5.5 INTERFERENCE AND PASS-THROUGH

This year, the Treatment Facility did not experience any known interference or pass-through. The Program continues to investigate any incident which may affect the treatment process.

5.6 PUBLIC PARTICIPATION

As in the past years, the Program has made efforts to keep its industries and the public aware of issues involving pretreatment and the Wastewater Treatment Facility. The Town's website has proven to be an effective way of communicating with the users. The Town's Sewer Use Ordinance and Standard Sanitary Sewer Requirements, and many of the forms and applications, are available on the Town's website: http://www.westwarwickri.org.

5.7 ADDITIONAL PROGRAM RESOURCES

The Program continues to scan and digitally file all significant industrial user correspondence and self-monitoring reports. The Program has a large format and high speed scanning ability available which has made the task of preserving any type or size document possible. The data is kept locally and backed up to an off-site secured server. This system will allow for data recovery in the event of a disaster. In addition, the original documents are not needed for daily handling and, therefore, can be better preserved. Data can be accessed remotely using a tablet or laptop computer. The remote availability of the data has proven to be useful during inspections and investigations, and particularly during the off hours.

West Warwick uses a Supervisory Control and Data Acquisition System (SCADA) to monitor its collection system. The system is valuable in locating the source of problems. The pump stations are equipped with flow, pH and temperature sensors. The data is continuously gathered and can be plotted to locate abnormalities. The system has been particularly useful in locating infiltration.

CHAPTER 6.0

TABLE OF CONTENTS

6.1 POLLUTANT ANALYSES

The 2018-2018 flows to the Treatment Plant averaged 5.45 MGD. The five year average was 5.24 MGD. The flows have been stable over the period with minor variations due to weather conditions. The data is presented in Figures 6-1 through 6-3.

The limits for BOD/CBOD and TSS were easily met during this year. The data is presented in Figures 6-4 through 6-10. The data shows a continued decline in the influent BOD/CBOD loading. The TSS load is presented in Figures 6-11 though 6-16. Figure 6-15 also shows a continuing decline in the TSS influent over the five year period.

Table 6-1B shows the BOD removal for the year continued to exceed 98%. The table also shows the average influent to be 23% of design capacity, and the effluent was 4% of the allowable discharge limit. The data for CBOD shows the influent to be 25% of design capacity, and < 6 % of the permitted discharge. Similarly, Table 6-2B shows the TSS removal to also be above 98% and the average influent to be 9% of the design loading, and < 8.5 % of the allowable discharge.

Figures 6-25 through 6-29 show Total Nitrogen and its components. Table 6-17 shows the average removal for Total Nitrogen to be 53% with removals of 81% achieved during the summer period. Figure 6-29 shows a dramatic reduction in Nitrogen during the permit seasons. Figure 6-25 shows the ammonia levels.

Figure 6-30 similarly shows the reduction in Phosphorus. Table 6-18 shows the average removal for phosphorus to be 92% and an average level of discharge for the year to be 0.44 mg/l. This data includes the startup data and first season of the new phosphorus removal upgrade. The Treatment Facility is currently meeting the new permit limit for phosphorus of 0.1 mg/l.

The limits for the Metals were easily achieved. Many of the metals sampled were below detectable limits. In this case, the Program previously reported the level at the detection limit. Due to a change in the reporting requirement, RIDEM requires results below the detection limits to be reported as zero.

The following graphs (Figures) are provided to show the operational data of the Treatment Plant:

6-1 Average & Peak Daily Flows (July 2017 to June 2018)

6-2 Average - Monthly Flow vs. Monthly Limit (July 2017 to June 2018)

6-31 Sludge Volume Index (July 2017 to June 2018)

6-32 Fecal Monthly Geo Mean (July 2017 to June 2018)

During the course of the reporting year, the Pretreatment Program organized data in order to observe the behavior of the many characteristics which affect the operations of the Treatment Facility.

6.2 SLUDGE/COMPOST

The sludge data is presented in Appendix C. The facility discontinued composting, therefore, no data is included in this report

6.3 LOCAL LIMITS MONITORING

In order to develop local limits, additional parameters are sampled on a quarterly basis. The results of this testing is summarized in the following tables:

6-1A Summary of Local Limits Sampling for BOD

6-1B Summary of BOD Loading and Removal

6-2A Summary of Local Limits Sampling for TSS

6-2B Summary of TSS Loading and Removal

6-3 Summary of Local Limits Sampling for Oil and Grease

6-4 Summary of Local Limits Sampling for TPH

6-5 Summary of Local Limits Sampling for Phenol

6-6 Summary of Local Limits Sampling for Arsenic

6-7 Summary of Local Limits Sampling for Cadmium

6-8 Summary of Local Limits Sampling for Cyanide

6-9 Summary of Local Limits Sampling for Chromium

6-10 Summary of Local Limits Sampling for Copper

6-11 Summary of Local Limits Sampling for Iron

6-12A Summary of Local Limits Sampling for Lead

6-12B Summary of Lead Loading and Removal

6-13 Summary of Local Limits Sampling for Mercury

6-14 Summary of Local Limits Sampling for Nickel

6-15 Summary of Local Limits Sampling for Silver

6-16A Summary of Local Limits Sampling for Zinc

6-16B Summary of Zinc Loading and Removal

6-17 Summary of Local Limits Sampling for Nitrogen

6-18 Summary of Local Limits Sampling for Phosphorus

6.4 BIOASSAY DATA

In 2017-2018, the Treatment Facility sampled its wastewater on a quarterly basis. The data has previously been submitted and has not been included in this report.

TABLE 6-1A

SUMMARY OF LOCAL LIMITS SAMPLING FOR BOD

BOD REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	mg/l	Mass in Pounds				
7/24/2013	4.27	140	76	46%	15	89%	4.7	97%	4.6	97%		4,986	2,706	534	167	164
10/23/2013	4.50	210	69	67%	32	85%	5.2	98%	11	95%	1000	7,881	2,590	1,201	195	413
1/29/2014	6.70	100	92	8%	8.2	92%	2.5	98%	2	98%		5,588	5,141	458	140	112
5/7/2014	7.01	180	99	45%	25	86%	4.8	97%	5.6	97%		10,523	5,788	1,462	281	327
7/30/2014	3.55	200	130	35%	43	79%	4.1	98%	4.4	98%		5,921	3,849	1,273	121	130
10/1/2014	3.25	220	81	63%	17	92%	3.9	98%	2.7	99%	1300	5,963	2,196	461	106	73
1/7/2015	5.87	120	59	51%	26	78%	2.9	98%	2	98%		5,875	2,888	1,273	142	98
5/6/2015	5.31	130	81	38%	7.7	94%	5.1	96%	11	92%		5,757	3,587	341	226	487
7/30/2015	5.43	200	130	35%	10	95%	4.1	98%	4.4	98%		9,057	5,887	453	186	199
10/14/2015	4.53	280	90	68%	10	96%	2.6	99%	2.1	99%	1100	10,578	3,400	378	98	79
1/20/2016	6.64	110	55	50%	6.8	94%	2	98%	2	98%		6,092	3,046	377	111	111
4/19/2016	6.42	71	18	75%	3	96%	3	96%	2.7	96%		3,802	964	161	161	145
8/17/2016	4.19	130	53	59%	2.4	98%	2	98%	2	98%		4,543	1,852	84	70	70
11/30/2016	4.26	120	90	25%	6.30	95%	2	98%	2	98%	800.0	4,263	3,198	224	71	71
2/1/2017	6.99	69	48	30%	3.90	94%	2	97%	2	97%		4,022	2,798	227	117	117
4/19/2017	6.62	61.3	63	-3%	4.76	92%	5.52	91%	5.03	92%		3,384	3,495	263	305	278
7/26/2017	2.98	125	71	43%	4.69	96%	2	98%	2	98%		3,107	1,767	117	50	50
11/8/2017	4.78	129	97.9	24%	2.17	98%	2	98%	2	98%	3310.0	5,143	3,903	87	80	80
1/31/2018	7.02	97.4	50.3	48%	2	98%	2	98%	2	98%		5,702	2,945	117	117	117
6/13/2018	4.44	178	83.1	53%	6	97%	2	99%	2	99%		6,591	3,077	222	74	74
AVE	5.55	148	94	33%	15	90%	4.3	97%	5.3	96%	786	6,586	4,250	664	203	247
AVE 5 year	5.24	144	77	43%	12	92%	3.2	97%	3.7	97%	1,502	5,939	3,254	486	141	160
AVE '17-18	4.81	132	76	42%	4	97%	2.0	98%	2.0	98%	3,310	5,136	2,923	136	80	80

Design load 21,893 LBS/D

% of design load 23%

AHL 16,757 LBS/D

% allowable discharge 6%

Yellow indicates data that is outside the normal range

Values in Blue are less than the detectable limits

TABLE 6-1B
TOWN OF WEST WARWICK
WATER POLLUTION FACILITY
BOD LOADING

BOD CONCENTRATION						
MONTH	MONTH AVG FLOW	BOD OR CBOD INFLUENT DAY. MAX.	BOD OR CBOD INFLUENT 30 DAY AVG.	BOD OR CBOD EFFLUENT DAY. MAX.	BOD OR CBOD EFFLUENT 30 DAY AVG.	BOD OR CBOD REMOVAL
	MGD	mg/l	mg/l	mg/l	mg/l	%
Jul-17	5.1	174	122.0	3.3	0.0	100
Aug-17	4.0	211	164.2	8.2	2.4	99
Sep-17	3.7	244	188.8	8.0	3.7	98
Oct-17	3.9	266	188.7	5.8	1.5	99
Nov-17	5.0	279	176.9	2.3	2.0	99
Dec-17	5.0	232	167.4	36.3	5.3	97
Jan-18	6.6	235	129.0	4.5	2.1	98
Feb-18	8.3	130	94.1	7.6	2.5	97
Mar-18	9.0	130	84.0	2.2	2.0	97
Apr-18	6.7	149	97.9	22.9	7.2	93
May-18	5.8	132	107.0	6.7	2.6	98
Jun-18	4.4	187	142.8	2.6	2.6	98
AVERAGE	**5.6**	**197**	**138.6**	**9.2**	**3**	**98**

BOD MASS								
MONTH/YEAR	BOD INFLUENT AVE LBS	BOD INFLUENT MAX LBS	BOD EFFLUENT AVE LBS	BOD EFFLUENT MAX LBS	CBOD INFLUENT AVE LBS	CBOD INFLUENT MAX LBS	CBOD EFFLUENT AVE LBS	CBOD EFFLUENT MAX LBS
	LBS/D	LBS/D	LBS/D	LBS/D	LBS/D	LBS/D	LBS/D	LBS/D
Jul-17					5,096	6,917	6	123
Aug-17					5,513	6,863	79	261
Sep-17					5,809	7,367	114	277
Oct-17					5,907	7,743	45	165
Nov-17	7,312	11,029	84	96				
Dec-17	6,954	9,539	215	1,444				
Jan-18	6,566	10,761	116	319				
Feb-18	6,625	9,779	178	648				
Mar-18	5,903	8,191	148	210				
Apr-18	3,997	6,452	181	422				
May-18	5,334	7,791	409	1,366				
Jun-18					5,219	6,184	96	305
AVERAGE	**6,099**	**9,078**	**190**	**644**	**5,509**	**7,015**	**68**	**226**
% DESIGN LOAD	**28%**	**41%**	**7%**	**15%**	**25%**	**32%**	**8%**	**17%**
MASS AVAILABLE	**15,794**	**12,815**			**16,384**	**14,878**		

Design load 21,893 LBS/D

Date	AVE. FLOW (mgd)	BOD influent	BOD primary effl	BOD sec eff	BOD BAF eff	BOD effluent	BOD REMOVAL
	MGD	mg/l	mg/l	mg/l	mg/l	mg/l	%
7/26/2017	2.98	125	71.1	4.69	2	2	98%
11/8/2017	4.78	129	97.9	2.17	2	2	98%
1/31/2018	7.02	97.4	50.3	2	2	2	98%
6/13/2018	4.44	178	83.1	6	2	2	99%
AVERAGE	**4.81**	**132**	**76**	**4**	**2**	**2**	**98%**

Values in Blue are less than the detectable limits

TABLE 6-2A
SUMMARY OF LOCAL LIMITS SAMPLING FOR TSS

TSS REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	mg/l	Mass in Pounds				
7/24/2013	4.27	81	48	41%	5.3	93%	3.7	95%	2	98%		2,885	1,709	189	132	71
10/23/2013	4.50	160	45	72%	7	96%	5.8	96%	5	97%	1100	6,005	1,689	263	218	188
1/29/2014	6.70	55	50	9%	6.6	88%	2	96%	2	96%		3,073	2,794	369	112	112
5/7/2014	7.01	100	61	39%	4.7	95%	2	98%	2	98%		5,846	3,566	275	117	117
7/30/2014	3.55	130	59	55%	10	92%	2	98%	2	98%		3,849	1,747	296	59	59
10/1/2014	3.25	210	60	71%	9.8	95%	2	99%	3.2	98%	2000	5,692	1,626	266	54	87
1/7/2015	5.87	110	42	62%	10	91%	2	98%	2	98%		5,385	2,056	490	98	98
5/6/2015	5.31	130	66	49%	2	98%	3.2	98%	2	98%		5,757	2,923	89	142	89
7/30/2015	5.43	130	59	55%	10	92%	2	98%	2	98%		5,887	2,672	453	91	91
10/14/2015	4.53	190	52	73%	5	97%	2.4	99%	2	99%	5500	7,178	1,965	189	91	76
1/20/2016	6.64	100	46	54%	2	98%	2	98%	2	98%		5,538	2,547	111	111	111
4/19/2016	6.42	53	19	64%	2	96%	2	96%	2	96%		2,838	1,017	107	107	107
8/17/2016	4.19	28	94	-236%	4.8	83%	2	93%	2	93%		978	3,285	168	70	70
11/30/2016	4.26	71	60	15%	4.0	94%	2	97%	2	97%	710	2,523	2,132	142	71	71
2/1/2017	6.99	52	44	15%	4.0	92%	2	96%	3	94%		3,031	2,565	233	117	175
4/19/2017	6.62	31.5	50	-59%	4.9	84%	5.0	84%	5	84%		1,739	2,761	271	276	276
7/26/2017	2.98	88.5	31.6	64%	6.2	93%	5	94%	5	94%		2,200	785	154	124	124
11/8/2017	4.78	76.4	63.6	17%	2.5	97%	2.5	97%	2.5	97%	3430	3,046	2,535	100	100	100
1/31/2018	7.02	95.6	58.4	39%	2.5	97%	2.5	97%	2.5	97%		5,597	3,419	146	146	146
6/13/2018	4.44	137	58	58%	5.0	96%	2.5	98%	2.5	98%		5,073	2,148	185	93	93
AVE	5.55	116	56	43%	8	92%	3.8	96%	4.5	96%	1,086	5,226	2,573	375	180	206
AVE 5 year	5.24	101	53	28%	5	94%	2.7	96%	2.6	96%	2,548	4,206	2,297	225	116	113
AVE '17-18	4.81	99	53	44%	4	96%	3.1	97%	3.1	97%	3,430	3,979	2,222	146	116	116

Design load **21,893 LBS/D**

% of design load **18%**

AHL **17,914 LBS/D**

% allowable discharge **6.6%**

Yellow indicates data that is outside the normal range

Values in Blue are less than the detectable limits

TABLE 6-2B

TOWN OF WEST WARWICK
WATER POLLUTION FACILITY
BOD LOADING

TSS CONCENTRATION					
MONTH	TSS INFLUENT		TSS EFFLUENT		TSS
	DAY. MAX.	30 DAY AVG.	DAY. MAX.	30 DAY AVG.	% REMOVAL
	mg/l	mg/l	mg/l	mg/l	%
Jul-17	208	124	0.0	0.0	100%
Aug-17	167	230	0.0	0.0	100%
Sep-17	376	179	5.0	0.4	100%
Oct-17	211	171	33.8	3.9	99%
Nov-17	167	123	2.5	2.5	98%
Dec-17	235	134	4.4	2.6	98%
Jan-18	170	91	2.5	2.5	97%
Feb-18	135	81	13.5	3.3	96%
Mar-18	123	77	14.0	3.1	95%
Apr-18	123	73	8.2	3.3	96%
May-18	158	106	3.4	2.6	98%
Jun-18	188	123	4.2	2.6	98%
AVERAGE	**188**	**126**	**7.6**	**2.2**	**98%**

TSS MASS					
MONTH	TSS INFLUENT		TSS EFFLUENT		TSS
	30 DAY AVG.	DAY. MAX.	30 DAY AVG.	DAY. MAX.	REMOVAL
	LBS/D	LBS/D	LBS/D	LBS/D	%
Jul-17	5,242	7,928	0	0	100%
Aug-17	5,585	8,210	0	0	100%
Sep-17	5,528	11,885	13	173	100%
Oct-17	5,391	6,520	90	1,212	98%
Nov-17	5,086	6,337	104	119	98%
Dec-17	5,572	9,506	108	172	98%
Jan-18	4,672	8,124	136	195	97%
Feb-18	5,688	10,156	240	1,151	96%
Mar-18	5,413	10,000	219	813	96%
Apr-18	3,997	6,452	181	422	95%
May-18	5,097	8,048	124	159	98%
Jun-18	4,504	6,695	95	160	98%
AVERAGE	**5,148**	**8,322**	**109**	**381**	**98%**
% DESIGN LOAD	**24%**	**38%**	**6%**	**15%**	
MASS AVAILABLE	**16,745**	**13,571**			

Design load **21,893 LBS/D**

Date	AVE. FLOW (mgd)	TSS influent	mg/l primary effl	sec eff	BAF eff	effluent	REMOVAL
	MGD	mg/l	mg/l	mg/l	mg/l	mg/l	%
7/26/2017	2.98	88.5	31.6	6.2	5	5	94%
11/8/2017	4.78	76.4	63.6	2.5	2.5	2.5	97%
1/31/2018	7.02	95.6	58.4	2.5	2.5	2.5	97%
6/13/2018	4.44	137	58	5	2.5	2.5	98%
AVERAGE	**4.81**	**99**	**53**	**4**	**3**	**3**	**97%**

TABLE 6-3
SUMMARY OF LOCAL LIMITS SAMPLING FOR OIL AND GREASE

O&G REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Yellow indicated data that is suspect

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	mg/l	Mass in Pounds				
7/24/2013	4.27	13	5	63%	1	92%	1	92%	2.3	82%		463	171	36	36	82
10/23/2013	4.50	12	7	43%	1	92%	1	92%	2.0	83%	26	450	255	38	38	75
1/29/2014	6.70	18	13	28%	3.6	80%	1.7	91%	4.4	76%		1,006	726	201	95	246
5/7/2014	7.01	32	17	47%	1	97%	2.8	91%	5.3	83%		1,871	994	58	164	310
7/30/2014	3.55	63	17	73%	1.0	98%	1	98%	1	98%		1,865	503	30	30	30
10/1/2014	3.25	44	22	50%	1	98%	15.0	66%	1	98%	15	1,193	596	27	407	27
1/7/2015	5.87	18	100	-456%	7.1	61%	12.0	33%	6.7	63%		881	4,896	348	587	328
5/6/2015	5.31	23	8	66%	1	96%	1	96%	1.9	92%		1,019	345	44	44	84
7/30/2015	5.43	63	17	73%	1	98%	1	98%	1	98%		2,853	770	45	45	45
10/14/2015	4.53	31	15	52%	1	97%	2.0	94%	1	97%	100	1,171	567	38	76	38
1/20/2016	6.64	22	20	9%	4.7	79%	10.0	55%	10.0	55%		1,218	1,108	260	554	554
4/19/2016	6.42	21	7	69%	4.3	80%	1.6	92%	2.8	87%		1,124	348	230	86	150
8/17/2016	4.19	40	280	-600%	1	98%	1	98%	1	98%		1,398	9,784	35	35	35
11/30/2016	4.26	26	33	-27%	1.3	95%	1	96%	1	96%	120	924	1,172	46	36	36
2/1/2017	6.99	14	12	14%	1	93%	1	92%	1	93%		816	700	58	64	58
4/19/2017	6.62	15	16	-5%	1.8	88%	2.0	87%	1	92%		850	894	99	108	66
7/26/2017	2.98	24	19	20%	4.1	83%	3.4	86%	3.8	84%		587	467	102	84	94
11/8/2017	4.78	22	20	10%	1	95%	1.4	93%	1	95%	45	877	785	41	57	48
1/31/2018	7.02	18	65	-263%	5.6	69%	10.5	42%	9.74	46%		1,054	3,829	327	615	570
6/13/2018	4.44	26	38	-43%	5	81%	5.5	79%	7.3	72%		974	1,396	185	203	269
AVE	5.55	23	32	-36%	6	74%	2.4	65%	2.1	89%	47	1,032	1,429	267	113	99
AVE '17-18	4.81	22	35	-69%	4	82%	5.2	75%	5.5	74%	45	873	1,619	164	240	245

Yellow indicates data that is outside the normal range

Values in Blue are less than the detectable limits

TABLE 6-4
SUMMARY OF LOCAL LIMITS SAMPLING FOR TPH

TPH REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Yellow indicated data that is suspect

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	mg/l	Mass in Pounds				
7/24/2013	4.27	5.3	1.3	75%	1	81%	1		2.6	51%		189	46	36	36	93
10/23/2013	4.50	2.5	9.7	-288%	1	60%	1		1	60%	4.0	94	364	38	38	38
1/29/2014	6.70	1	3.2	-220%	1	0%	1		1	0%		56	179	56	56	56
5/7/2014	7.01	19.0	7.2	62%	1	95%	1.9		3.1	84%		1,111	421	58	111	181
7/30/2014	3.55	2	9.2	-360%	1	50%	1		1	50%		59	272	30	30	30
10/1/2014	3.25	10.0	8.2	18%	1	90%	1		1	90%	13.0	271	222	27	27	27
1/7/2015	5.87	5.6	3.3	41%	1	82%	1		1	82%		274	162	49	49	49
5/6/2015	5.31	5.7	3.2	44%	1	82%	1		1	82%		252	142	44	44	44
7/30/2015	5.43	2	9.2	-360%	1	50%	1		1	50%		91	417	45	45	45
10/14/2015	4.53	9.7	2.2	77%	1	90%	1		1	90%	18.0	366	83	38	38	38
1/20/2016	6.64	6.8	2.9	57%	1	85%	1		1.7	75%		377	161	55	55	94
4/19/2016	6.42	9.0	1.4	84%	1	89%	1		1	89%		482	75	54	54	54
8/17/2016	4.19	25.0	220.0	-780%	1	96%	1		1	96%		874	7,688	35	35	35
11/30/2016	4.26	16.0	21.0	-31%	1	94%	1		1	94%	79.0	568	746	36	36	36
2/1/2017	6.99	8.0	6.2	23%	1	88%	1		1	88%		466	361	58	64	58
4/19/2017	6.62	7.4	4.6	38%	1	86%	1		1	86%		409	254	55	57	55
7/26/2017	2.98	16.4	6.2	62%	1	94%	1		1	94%		408	154	25	25	25
11/8/2017	4.78	2.8	6.0	-118%	1	63%	1		1	64%	7.5	110	239	41	41	40
1/31/2018	7.02	5.1	10.1	-98%	1	80%	1		1	64%		299	591	60	60	59
6/13/2018	4.44	9.3	13.9	-50%	1	89%	1		1	89%		343	515	38	37	39
AVE	5.55	5.3	11.4	-92%	1	65%	1.2	37%	1.2	69%	13	234	463	50	58	54
AVE '17-18	4.81	8.4	9.1	-51%	1	81%	1.0		1.0	77%	8	290	375	41	41	41

TABLE 6-5
SUMMARY OF LOCAL LIMITS SAMPLING FOR PHENOL

PHENOL REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Yellow indicated data that is suspect

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	%	mg/l	Mass in Pounds				
7/24/2013	4.27	0.47	0.30	36%	0.39	17%	0.03	93%	0.11	77%	77%		16.74	10.68	13.89	1.21	3.92
10/23/2013	4.50	0.12	0.15	-25%	0.05	57%	0.03	73%	0.07	45%	45%	0.2	4.50	5.63	1.95	1.20	2.48
1/29/2014	6.70	0.16	0.72	-350%	0.04	76%	0.09	46%	0.07	58%	58%		8.94	40.23	2.12	4.86	3.74
5/7/2014	7.01	0.23	1.20	-422%	0.30	-30%	0.03	87%	0.03	87%	87%		13.45	70.16	17.54	1.75	1.75
7/30/2014	3.55	0.29	0.32	-10%	0.83	-186%	0.09	69%	0.07	75%	75%		8.59	9.47	24.57	2.69	2.13
10/1/2014	3.25	0.15	0.03	79%	0.17	-13%	0.04	74%	0.07	51%	51%	0.8	4.07	0.84	4.61	1.06	2.01
1/7/2015	5.87	0.03	0.03	3%	0.03	0%	0.03	3%	0.03	-3%	-3%		1.47	1.42	1.47	1.42	1.52
5/6/2015	5.31	0.17	0.03	83%	0.03	83%	0.03	81%	0.30	-76%	-76%		7.53	1.28	1.28	1.42	13.29
7/30/2015	5.43	0.29	0.32	-10%	0.08	71%	0.09	69%	0.09	69%	69%		13.13	14.49	3.76	4.12	4.12
10/14/2015	4.53	0.10	0.39	-290%	0.03	71%	0.03	73%	0.03	69%	69%	0.056	3.78	14.73	1.10	1.02	1.17
1/20/2016	6.64	0.16	0.03	81%	0.04	73%	0.03	83%	0.03	81%	81%		8.86	1.66	2.44	1.55	1.72
4/19/2016	6.42	0.07	0.07	3%	0.03	56%	0.06	16%	0.03	54%	54%		3.75	3.64	1.66	3.16	1.71
8/17/2016	4.19	0.13	0.07	46%	0.033	75%	0.03	78%	0.03	76%	76%		4.54	2.45	1.15	0.98	1.08
11/30/2016	4.26	0.14	0.04	72%	0.039	72%	0.03	80%	0.03	78%	78%	0.31	4.97	1.39	1.39	0.99	1.10
2/1/2017	6.99	0.03	0.03	3%	0.03	0%	0.03	10%	0.03				1.81	1.75	1.81	1.63	1.81
4/19/2017	6.62	0.07	0.09	-18%	0.03	58%	0.03	62%	0.03	58%	58%		4.09	4.80	1.71	1.55	1.71
7/26/2017	2.98	0.15	0.20	-36%	0.06	60%	0.03	81%	0.03	79%	79%		3.73	5.07	1.49	0.70	0.77
11/8/2017	4.78	0.06	0.11	-84%	0.04	24%	0.03	52%	0.04	36%	36%	0.151	2.31	4.27	1.75	1.12	1.48
1/31/2018	7.02	0.03	0.08	-177%	0.03	0%	0.03	7%	0.03	0%			1.76	4.86	1.76	1.64	1.76
6/13/2018	4.44	0.14	0.15	-6%	0.10	34%	0.05	63%	0.07	50%	50%		5.30	5.59	3.52	1.96	2.67
AVE	5.55	0.12	0.14	-28%	0.07	37%	0.05	51%	0.05	52%	53%	0.39	5.27	6.55	2.91	2.06	2.04
AVE '17-18	4.81	0.10	0.14	-76%	0.06	29%	0.03	51%	0.04	41%	55%	0.15	3.27	4.95	2.13	1.35	1.67
EPA Removals						86%		85%		85%							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.008 mg/l Average monthly 0.36144 mg/l Max day

Q_{POTW} = 4.81 mgd

$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})}$ = 2.153 lbs/day

96.56 lbs/day % of AHL 14%

C_{Inhib} = 50 mg/l Based on maxium Daily limit AHL 93.29

AHL SEC= $\frac{8.34 (C\ Inhib_2)(Q\ POTW)}{(1 - R_{Prim})}$ = 2,003.69 lbs/day

$C_{Inhib\ nitro}$ = 4 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib\ 3)(Q\ POTW)}{(1 - R\ sec)}$ = 1,144.96 lbs/day

TABLE 6-6
SUMMARY OF LOCAL LIMITS SAMPLING FOR ARSENIC

ARSENIC REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	µg/l	Mass in Pounds				
7/24/2013	4.27	4	4		4		4		4			0.14	0.14	0.14	0.14	0.14
10/23/2013	4.50	4	4		4		4		4		4	0.15	0.15	0.15	0.15	0.15
1/29/2014	6.70	4	4		4		4		4			0.22	0.22	0.22	0.22	0.22
5/7/2014	7.01	4	4		4		4		4			0.23	0.23	0.23	0.23	0.23
7/30/2014	3.55	4	4		4		4		4			0.12	0.12	0.12	0.12	0.12
10/1/2014	3.25	4	4		4		4		4		20	0.11	0.11	0.11	0.11	0.11
1/7/2015	5.87	4	4		4		4		4			0.20	0.20	0.20	0.20	0.20
5/6/2015	5.31	4	4		4		4		4			0.18	0.18	0.18	0.18	0.18
7/30/2015	5.43	4	4		4		4		4			0.18	0.18	0.18	0.18	0.18
10/14/2015	4.53	4	4		4		4		4		8	0.15	0.15	0.15	0.15	0.15
1/20/2016	6.64	4	4		4		4		4			0.22	0.22	0.22	0.22	0.22
4/19/2016	6.42	4	4		4		4		4			0.21	0.21	0.21	0.21	0.21
8/17/2016	4.19	4	4		4		4		4			0.14	0.14	0.14	0.14	0.14
11/30/2016	4.26	4	4		4		4		4		4	0.14	0.14	0.14	0.14	0.14
2/1/2017	6.99	4	4		4		4		4			0.23	0.23	0.23	0.23	0.23
4/19/2017	6.62	4	4		4		4		4			0.22	0.22	0.22	0.22	0.22
7/26/2017	2.98	4	4		4		4		4			0.10	0.10	0.10	0.10	0.10
11/8/2017	4.78	4	4		4		4		4		4	0.16	0.16	0.16	0.16	0.16
1/31/2018	7.02	8	4		4		4		4			0.47	0.23	0.23	0.23	0.23
6/13/2018	4.44	4	4		4		4		4			0.15	0.15	0.15	0.15	0.15
AVE	**5.55**	5	4		4		4		4		6	**0.21**	**0.21**	**0.21**	**0.20**	**0.21**
AVE '17-18	**4.81**	5	4		4		4		4		4	**0.22**	**0.16**	**0.16**	**0.16**	**0.16**

TABLE 6-7
SUMMARY OF LOCAL LIMITS SAMPLING FOR CADMIUM

CADMIUM REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	0.5	0.5		0.5		0.5		0.5				0.02	0.02	0.02	0.02	0.02
10/23/2013	4.50	0.5	0.5		0.5		0.5		0.5			0.5	0.02	0.02	0.02	0.02	0.02
1/29/2014	6.70	0.5	0.5		0.5		0.5		0.5				0.03	0.03	0.03	0.03	0.03
5/7/2014	7.01	0.5	0.5		0.5		0.5		0.5				0.03	0.03	0.03	0.03	0.03
7/30/2014	3.55	0.5	0.5		0.5		0.5		0.5				0.01	0.01	0.01	0.01	0.01
10/1/2014	3.25	0.5	0.5		0.5		0.5		0.5			2.5	0.01	0.01	0.01	0.01	0.01
1/7/2015	5.87	0.5	0.5		0.5		0.5		0.5				0.02	0.02	0.02	0.02	0.02
5/6/2015	5.31	0.5	0.5		0.5		0.5		0.5				0.02	0.02	0.02	0.02	0.02
7/30/2015	5.43	0.5	0.5		0.5		0.5		0.5				0.02	0.02	0.02	0.02	0.02
10/14/2015	4.53	0.5	0.5		0.5		0.5		0.5			1.1	0.02	0.02	0.02	0.02	0.02
1/20/2016	6.64	0.5	0.5		0.5		0.5		0.5				0.03	0.03	0.03	0.03	0.03
4/19/2016	6.42	0.5	0.5		0.5		0.5		0.5				0.03	0.03	0.03	0.03	0.03
8/17/2016	4.19	0.5	0.5		1		0.5		0.5				0.02	0.02	0.03	0.02	0.02
11/30/2016	4.26	0.5	0.5		0.5		0.5		0.5			0.5	0.02	0.02	0.02	0.02	0.02
2/1/2017	6.99	0.5	0.5		0.5		0.5		0.5				0.03	0.03	0.03	0.03	0.03
4/19/2017	6.62	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
7/26/2017	2.98	1	1		1		1		1				0.02	0.02	0.02	0.02	0.02
11/8/2017	4.78	1	1		1		1		1			1	0.04	0.04	0.04	0.04	0.04
1/31/2018	7.02	2	1		1		1		1				0.12	0.06	0.06	0.06	0.06
6/13/2018	4.44	1	1		1		1		1				0.04	0.04	0.04	0.04	0.04
AVE	**5.55**	**0.7**	**0.7**	**23%**	**0.6**	**80%**	**0.6**		**0.6**		**10%**	**0.9**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**
AVE '17-18	**4.81**	**1.3**	**1.0**		**1.0**		**1.0**		**1.0**			**1.0**	**0.05**	**0.04**	**0.04**	**0.04**	**0.04**
EPA Removals				**15%**		**67%**		**50%**		**67%**							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.001 mg/l Average monthly 0.095 mg/l Max day

Q_{POTW} = 4.81 mgd

$$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})} = 0.121 \text{ lbs/day}$$

% of AHL 45%

AHL 0.07 lbs/day

C_{Inhib} = 1 mg/l

$$\text{AHL SEC} = \frac{8.34\,(C\ Inhib_2)\,(Q\ POTW)}{(1 - R_{Prim})} = 47.15 \text{ lbs/day}$$

$C_{Inhib\ nitro}$ = 5.2 mg/l

$$\text{AHL SEC} = \frac{8.34\,(C\ Inhib\ 3)\,(Q\ POTW)}{(1 - R\ sec)} = 631.46 \text{ lbs/day}$$

TABLE 6-8
SUMMARY OF LOCAL LIMITS SAMPLING FOR CYANIDE

CYANIDE REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	10	10		10		10		10				0.36	0.36	0.36	0.36	0.36
10/23/2013	4.50	10	10		10		10		10			10	0.38	0.38	0.38	0.38	0.38
1/29/2014	6.70	10	10		10		10		10				0.56	0.56	0.56	0.56	0.56
5/7/2014	7.01	10	10		10		10		10				0.58	0.58	0.58	0.58	0.58
7/30/2014	3.55	10	10		10		10		10				0.30	0.30	0.30	0.30	0.30
10/1/2014	3.25	10	10		10		10		10			10	0.27	0.27	0.27	0.27	0.27
1/7/2015	5.87	10	10		10		10		10				0.49	0.49	0.49	0.49	0.49
5/6/2015	5.31	10	10		10		10		10				0.44	0.44	0.44	0.44	0.44
7/30/2015	5.43	10	10		10		10		10				0.45	0.45	0.45	0.45	0.45
10/14/2015	4.53	10	10		10		10		10			10	0.38	0.38	0.38	0.38	0.38
1/20/2016	6.64	10	10		10		10		10				0.55	0.55	0.55	0.55	0.55
4/19/2016	6.42	10	10		10		10		10				0.54	0.54	0.54	0.54	0.54
8/17/2016	4.19	10	10		10		10		10				0.35	0.35	0.35	0.35	0.35
11/30/2016	4.26	10	10		10		10		10			10	0.36	0.36	0.36	0.36	0.36
2/1/2017	6.99	10	10		10		10		10				0.58	0.58	0.58	0.58	0.58
4/19/2017	6.62	10	10		10		10		10				0.55	0.55	0.55	0.55	0.55
7/26/2017	2.98	10	10		10		10		10				0.25	0.25	0.25	0.25	0.25
11/8/2017	4.78	10	10		10		10		10			10	0.40	0.40	0.40	0.40	0.40
1/31/2018	7.02	10	10		10		10		10				0.59	0.59	0.59	0.59	0.59
6/13/2018	4.44	10	10		10		10		10				0.37	0.37	0.37	0.37	0.37
AVE	**5.55**	10	10		10		10		10			10	**0.46**	**0.46**	**0.46**	**0.46**	**0.46**
AVE '17-18	5.35	10	10		10		10		10		#DIV/0!	10	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**
EPA Removals				27%		69%		66%		69%							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.0075 mg/l Average monthly 0.032 mg/l Max day

Q_{POTW} = 5.35 mgd

$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})}$ = 1.079 lbs/day % of AHL 37%

C_{Inhib} = 0.1 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib_2)(Q\ POTW)}{(1 - R_{Prim})}$ = 6.11 lbs/day

$C_{Inhib\ nitro}$ = 0.34 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib\ 3)(Q\ POTW)}{(1 - R\ sec)}$ = 48.94 lbs/day

TABLE 6-9
SUMMARY OF LOCAL LIMITS SAMPLING FOR CHROMIUM

CHROMIUM REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	1	2.4	-140%	1		1		1		0%		0.04	0.09	0.04	0.04	0.04
10/23/2013	4.50	1.2	2.1	-75%	1	17%	1		1	17%	17%	2.3	0.05	0.08	0.04	0.04	0.04
1/29/2014	6.70	1.2	1.0	17%	1	17%	1		1	17%	17%		0.07	0.06	0.06	0.06	0.06
5/7/2014	7.01	1	1.2	-20%	1		1		1		0%		0.06	0.07	0.06	0.06	0.06
7/30/2014	3.55	1.4	2.1	-50%	1	29%	1		1	29%	29%		0.04	0.06	0.03	0.03	0.03
10/1/2014	3.25	16.0	4.5	72%	1	94%	1		1	94%	94%	6.3	0.43	0.12	0.03	0.03	0.03
1/7/2015	5.87	1	1.8	-80%	1	0%	1		1		0%		0.05	0.09	0.05	0.05	0.05
5/6/2015	5.31	2.7	3.5	-30%	1.6	41%	1.6	41%	1.4	48%	48%		0.12	0.15	0.07	0.07	0.06
7/30/2015	5.43	1.4	2.1	-50%	1	29%	1		1	29%	29%		0.06	0.10	0.05	0.05	0.05
10/14/2015	4.53	1.1	2.1	-91%	1	9%	1		1	9%	9%	7.4	0.04	0.08	0.04	0.04	0.04
1/20/2016	6.64	1	1.5	-50%	1		1		1		0%		0.06	0.08	0.06	0.06	0.06
4/19/2016	6.42	1	1	0%	1		1		1		0%		0.05	0.05	0.05	0.05	0.05
8/17/2016	4.19	1	2.2	-120%	1		1		1				0.03	0.08	0.03	0.03	0.03
11/30/2016	4.26	1	2.6	-160%	1		1		1			2	0.04	0.09	0.04	0.04	0.04
2/1/2017	6.99	1	1.6	-60%	1		1		1				0.06	0.09	0.06	0.06	0.06
4/19/2017	6.62	1	1.4	-40%	1		1		1				0.06	0.08	0.06	0.06	0.06
7/26/2017	2.98	1.0	2	-100%	1		1		1				0.02	0.05	0.02	0.02	0.02
11/8/2017	4.78	1.0	2.6	-160%	1		1		1			1.2	0.04	0.10	0.04	0.04	0.04
1/31/2018	7.02	2	2.2	-10%	1	50%	1		1				0.12	0.13	0.06	0.06	0.06
6/13/2018	4.44	1.3	2.7	-108%	1		1		1				0.05	0.10	0.04	0.04	0.04
AVE	5.55	4.0	4.0	-38%	1.7	46%	1.7	44%	1.5	49%	42%	3.7	0.18	0.18	0.08	0.07	0.07
AVE '17-18	4.81	1.3	2.4	-94%	1.0	50%	1.0	#DIV/0!	1.0	#DIV/0!	#DIV/0!	1.2	0.06	0.10	0.04	0.04	0.04
EPA Removals				27%		67%		72%		72%							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.29 mg/l Average monthly 2.500 mg/l Max day

Q_{POTW} = 4.81 mgd

$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})}$ = 41.505 lbs/day

% of AHL 0.2% 0.1%

AHL 41.45 lbs/day

C_{Inhib} = 1 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib_2)(Q\ POTW)}{(1 - R_{Prim})}$ = 54.90 lbs/day

$C_{Inhib\ nitro}$ = 1 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib\ 3)(Q\ POTW)}{(1 - R\ sec)}$ = 80.15 lbs/day

based on Chromium V

TABLE 6-10
SUMMARY OF LOCAL LIMITS SAMPLING FOR COPPER

COPPER REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	29	8.3	71%	4.6	84%	4.6	84%	3.5	88%	88%		1.03	0.30	0.16	0.16	0.12
10/23/2013	4.50	23	7.1	69%	4.3	81%	4.2	82%	31.0	-35%	-35%	36	0.86	0.27	0.16	0.16	1.16
1/29/2014	6.70	13	15	-15%	4.2	68%	4.0	69%	3.1	76%	76%		0.73	0.84	0.23	0.22	0.17
5/7/2014	7.01	9.4	8	15%	3.1	67%	2.7	71%	2.3	76%	76%		0.55	0.47	0.18	0.16	0.13
7/30/2014	3.55	29	1.3	96%	3.3	89%	3.8	87%	2.0	93%	93%		0.86	0.04	0.10	0.11	0.06
10/1/2014	3.25	30	13	57%	5	83%	4.2	86%	2.9	90%	90%	110	0.81	0.35	0.14	0.11	0.08
1/7/2015	5.87	11	8.4	24%	3.8	65%	3.0	73%	2.1	81%	81%		0.54	0.41	0.19	0.15	0.10
5/6/2015	5.31	18	9.3	48%	2.2	88%	2.5	86%	1.6	91%	91%		0.80	0.41	0.10	0.11	0.07
7/30/2015	5.43	29	13	55%	3.3	89%	3.8	87%	2.0	93%	93%		1.31	0.59	0.15	0.17	0.09
10/14/2015	4.53	22	8.7	60%	3.1	86%	2.7	88%	2.1	90%	90%	150	0.83	0.33	0.12	0.10	0.08
1/20/2016	6.64	13	7.6	42%	3	77%	3.2	75%	2.9	78%	78%		0.72	0.42	0.17	0.18	0.16
4/19/2016	6.42	7.6	2.6	66%	2.8	63%	2.6	66%	2.8	63%	63%		0.41	0.14	0.15	0.14	0.15
8/17/2016	4.19	26	13	50%	6.6	75%	7.3	72%	4.7	82%	82%		0.91	0.45	0.23	0.26	0.16
11/30/2016	4.26	12	8.6	28%	4.8	60%	5.7	53%	4.8	60%	60%	39	0.43	0.31	0.17	0.20	0.17
2/1/2017	6.99	7.4	5.6	24%	1.9	74%	2.1	72%	1.7	77%	77%		0.43	0.33	0.11	0.12	0.10
4/19/2017	6.62	7.3	7.2	1%	6.1	16%	5.4	26%	4.7	36%	36%		0.40	0.40	0.34	0.30	0.26
7/26/2017	2.98	25.1	12.3	51%	5.7	77%	3.9	84%	3.5	86%	86%		0.62	0.31	0.14	0.10	0.09
11/8/2017	4.78	18.8	12.7	32%	4.1	78%	9.4	50%	5.6	70%	70%	16	0.75	0.51	0.16	0.37	0.22
1/31/2018	7.02	12.9	8	38%	3.1	76%	4.1	68%	6.5	50%	50%		0.76	0.47	0.18	0.24	0.38
6/13/2018	4.44	27.3	13.6	50%	8.2	70%	7.7	72%	6.3	77%	70%		1.01	0.50	0.30	0.29	0.23
AVE	**5.55**	**24.4**	**15.8**	**30%**	**7.6**	**67%**	**8.3**	**62%**	**6.8**	**71%**	**71%**	**49**	**1.09**	**0.73**	**0.36**	**0.38**	**0.32**
AVE '17-18	**4.81**	**21.0**	**11.7**	**43%**	**5.3**	**75%**	**6.3**	**69%**	**5.5**	**71%**	**69%**	**16**	**0.78**	**0.45**	**0.20**	**0.25**	**0.23**
EPA Removals				**22%**		**86%**		**85%**		**85%**							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.040 mg/l Average monthly 0.095 mg/l Max day

Q_{POTW} = 4.81 mgd

$$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})} = 5.471 \text{ lbs/day}$$

C_{Inhib} = 1 mg/l

$$\text{AHL SEC} = \frac{8.34\,(C\ Inhib_2)\,(Q\ POTW)}{(1 - R_{Prim})} = 70.18 \text{ lbs/day}$$

$C_{Inhib\ nitro}$ = 0.05 mg/l

$$\text{AHL SEC} = \frac{8.34\,(C\ Inhib\ 3)\,(Q\ POTW)}{(1 - R\ sec)} = 8.13 \text{ lbs/day}$$

% of AHL 5% 10%

AHL 7.34 lbs /day

TABLE 6-11
SUMMARY OF LOCAL LIMITS SAMPLING FOR IRON

IRON REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	660	430	**35%**	130	**80%**	75	**89%**	71	**89%**	**89%**		23.5	15.3	4.6	2.7	2.5
10/23/2013	4.50	600	50	**92%**	150	**75%**	95	**84%**	95	**84%**	**84%**	2,000	22.5	1.9	5.6	3.6	3.6
1/29/2014	6.70	420	420	**0%**	140	**67%**	60	**86%**	69	**84%**	**84%**		23.5	23.5	7.8	3.4	3.9
5/7/2014	7.01	290	320	**-10%**	72	**75%**	50	**83%**	50	**83%**	**83%**		17.0	18.7	4.2	2.9	2.9
7/30/2014	3.55	890	360	**60%**	160	**82%**	120	**87%**	110	**88%**	**88%**		26.4	10.7	4.7	3.6	3.3
10/1/2014	3.25	760	390	**49%**	130	**83%**	100	**87%**	96	**87%**	**87%**	3,600	20.6	10.6	3.5	2.7	2.6
1/7/2015	5.87	340	320	**6%**	110	**68%**	66	**81%**	54	**84%**	**84%**		16.6	15.7	5.4	3.2	2.6
5/6/2015	5.31	530	400	**25%**	100	**81%**	74	**86%**	75	**86%**	**86%**		23.5	17.7	4.4	3.3	3.3
7/30/2015	5.43	890	360	**60%**	160	**82%**	120	**87%**	110	**88%**	**88%**		40.3	16.3	7.2	5.4	5.0
10/14/2015	4.53	700	390	**44%**	130	**81%**	100	**86%**	100	**86%**	**86%**	9,100	26.4	14.7	4.9	3.8	3.8
1/20/2016	6.64	490	380	**22%**	72	**85%**	56	**89%**	54	**89%**	**89%**		27.1	21.0	4.0	3.1	3.0
4/19/2016	6.42	360	220	**39%**	79	**78%**	110	**69%**	110	**69%**	**69%**		19.3	11.8	4.2	5.9	5.9
8/17/2016	4.19	560	460	**18%**	120	**79%**	120	**79%**	120	**79%**	**79%**		19.6	16.1	4.2	4.2	4.2
11/30/2016	4.26	560	470	**16%**	150	**73%**	120	**79%**	120	**79%**	**79%**	2,000	19.9	16.7	5.3	4.3	4.3
2/1/2017	6.99	360	330	**8%**	96	**73%**	64	**82%**	60	**83%**	**83%**		21.0	19.2	5.6	3.7	3.5
4/19/2017	6.62	279	337	**-21%**	82.3	**71%**	79	**72%**	70	**75%**	**75%**		15.4	18.6	4.5	4.4	3.9
7/26/2017	2.98	563	395	**30%**	142	**75%**	137	**76%**	142	**75%**	**75%**		14.0	9.8	3.5	3.4	3.5
11/8/2017	4.78	610	575	**6%**	79.7	**87%**	89	**85%**	81	**87%**	**87%**	750	24.3	22.9	3.2	3.5	3.2
1/31/2018	7.02	477	395	**17%**	62.2	**87%**	60	**87%**	50	**90%**	**90%**		27.9	23.1	3.6	3.5	2.9
6/13/2018	4.44	745	405	**46%**	107	**86%**	112	**85%**	111	**85%**	**85%**		27.6	15.0	4.0	4.1	4.1
AVE	**5.55**	621	**451**	**23%**	**117**	**80%**	81.2	**86%**	88.9	**85%**	**85%**	**2,283**	**28**	**21**	**5.3**	**3.7**	**4.0**
AVE '17-18	**4.81**	599	**443**	**25%**	**98**	**84%**	99.5	**83%**	96.0	**84%**	**84%**	**750**	**23**	**18**	**3.6**	**3.7**	**3.4**

TABLE 6-12A
SUMMARY OF LOCAL LIMITS SAMPLING FOR LEAD

LEAD REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	2.3	1	57%	1	57%	1	57%	1	57%	57%		0.08	0.04	0.04	0.04	0.04
10/23/2013	4.50	2.3	1	57%	1	57%	1	57%	1	57%	57%	3	0.09	0.04	0.04	0.04	0.04
1/29/2014	6.70	1	1.0	0%	1	0%	1	0%	1				0.06	0.06	0.06	0.06	0.06
5/7/2014	7.01	1	1	0%	1	0%	1	0%	1				0.06	0.06	0.06	0.06	0.06
7/30/2014	3.55	3.2	1	69%	1	69%	1	69%	1	69%	69%		0.09	0.03	0.03	0.03	0.03
10/1/2014	3.25	3.5	1.2	66%	1	71%	1	71%	1	71%	71%	6.6	0.09	0.03	0.03	0.03	0.03
1/7/2015	5.87	1.0	1	0%	1	0%	1	0%	1		0%		0.05	0.05	0.05	0.05	0.05
5/6/2015	5.31	1.7	1.1	35%	1	41%	1	41%	1	41%	41%		0.08	0.05	0.04	0.04	0.04
7/30/2015	5.43	3.2	1	69%	1	69%	1	69%	1	69%	69%		0.14	0.05	0.05	0.05	0.05
10/14/2015	4.53	2.2	1	55%	1.3	41%	1	55%	1	55%	55%	6.4	0.08	0.04	0.05	0.04	0.04
1/20/2016	6.64	1.4	1	29%	1	29%	1	29%	1	29%	29%		0.08	0.06	0.06	0.06	0.06
4/19/2016	6.42	1.0	1		1	0%	1	0%	1				0.05	0.05	0.05	0.05	0.05
8/17/2016	4.19	1.6	1	38%	1	38%	1	38%	1	38%	38%		0.06	0.03	0.03	0.03	0.03
11/30/2016	4.26	1.4	1	29%	1	29%	1	29%	1	29%	29%	1.6	0.05	0.04	0.04	0.04	0.04
2/1/2017	6.99	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
4/19/2017	6.62	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
7/26/2017	2.98	1.7	1	41%	1	41%	1	41%	1	41%	41%		0.04	0.02	0.02	0.02	0.02
11/8/2017	4.78	1.5	1	33%	1	33%	1	33%	1	33%	33%	1.1	0.06	0.04	0.04	0.04	0.04
1/31/2018	7.02	2	1	50%	1		1		1				0.12	0.06	0.06	0.06	0.06
6/13/2018	4.44	3.5	1.2	66%	1		1		1	71%	71%		0.13	0.04	0.04	0.04	0.04
AVE	5.55	2.9	1.9	25%	1.3	48%	1.2	48%	1.3	52%	51%	4.0	0.13	0.09	0.06	0.05	0.06
AVE '17-18	4.81	2.2	1.1	48%	1.0	37%	1	37%	1	49%	49%	1.1	0.09	0.04	0.04	0.04	0.04
EPA Removals				57%		61%		52%		61%							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.00034 mg/l Average monthly 0.0087 mg/l Max day

Q_{POTW} 4.81 mgd

$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})}$ = 0.0349 lbs/day % of AHL 120%

0.8940 lbs/day(note 1) % of AHL 10%

Note 1 cacluated using monthly average concentration

C_{Inhib} = 1 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib_2)(Q\ POTW)}{(1 - R_{Prim})}$ = 93.19 lbs/day

$C_{Inhib\ nitro}$ = 0.5 mg/l

AHL SEC= $\frac{8.34 (C\ Inhib\ 3)(Q\ POTW)}{(1 - R\ sec)}$ = 51.38 lbs/day

TABLE 6-12B

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY
SUMMARY OF LEAD LOADING AND REMOVAL

LEAD CONCENTRATION						
MONTH/YEAR	FLOW	Total Lead (µg/L) Mo. Avg.	Day Max.	Total Lead (µg/L) Mo. Avg.	Day Max.	LEAD REMOVAL
	MGD	mg/l	mg/l	mg/l	mg/l	%
Jul-17	5.1	1.7	2.6	0	0	100%
Aug-17	4.0	1.3	3.5	0.9	2.7	31%
Sep-17	3.7	2.2	2.4	0	0	100%
Oct-17	3.9	2.4	2.7	0	0	100%
Nov-17	5.0	1.9	2.8	0	0	100%
Dec-17	5.0	1.7	2.2	0	0	100%
Jan-18	6.6	1.3	2.2	0	0	100%
Feb-18	8.3	0.6	1.2	0	0	100%
Mar-18	9.0	0.9	1.7	0	0	100%
Apr-18	6.7	1.4	0.4	0	0	100%
May-18	5.8	1.5	2.2	0	0	100%
Jun-18	4.4	1.6	2.1	0	0	100%
	4.2	2.3	2.6	0.0	0.0	94%

LEAD MASS					
MONTH/YEAR	Total Lead (lb/day) Mo. Avg.	Day Max.	Total Lead (lb/day) Mo. Avg.	Day Max.	LEAD REMOVAL
	LBS/D	LBS/D	LBS/D	LBS/D	%
Jul-17	0.07	0.11	0.00	0.00	100%
Aug-17	0.04	0.12	0.03	0.09	31%
Sep-17	0.07	0.07	0.00	0.00	100%
Oct-17	0.08	0.09	0.00	0.00	100%
Nov-17	0.08	0.12	0.00	0.00	100%
Dec-17	0.07	0.09	0.00	0.00	100%
Jan-18	0.07	0.12	0.00	0.00	100%
Feb-18	0.04	0.08	0.00	0.00	100%
Mar-18	0.07	0.13	0.00	0.00	100%
Apr-18	0.08	0.02	0.00	0.00	100%
May-18	0.07	0.11	0.00	0.00	100%
Jun-18	0.06	0.08	0.00	0.00	100%
AVERAGE	0.07	0.09	0.00	0.01	94%

Date	AVE. FLOW (mgd)	influent	primary effl	secondary effl	BAF eff	µg/l effluent	LEAD % REMOVAL	DOMESTIC
	MGD	mg/l	mg/l	mg/l	mg/l	mg/l	%	
7/26/2017	2.98	1.7	0	0	0	0	100%	
11/8/2017	4.78	1.5	0	0	0	0	100%	6.4
1/31/2018	7.02	2.0	0	0	0	0	100%	
6/13/2018	4.44	3.5	1.2	0	0	0	100%	
AVERAGE	4.81	2.2	0.3	0	0	0	100%	6.4

Date	INFLUENT	PRIMARY	SECONDARY	BAF eff	EFFLUENT	LEAD
	LBS/D	LBS/D	LBS/D	LBS/D	LBS/D	% REMOVAL
7/26/2017	0.042	0.000	0.000	0.000	0.000	100%
11/8/2017	0.060	0.000	0.000	0.000	0.000	100%
1/31/2018	0.117	0.000	0.000	0.000	0.000	100%
6/13/2018	0.130	0.044	0.000	0.000	0.000	100%
Average	0.087	0.011	0.000	0.000	0.000	100%

TABLE 6-13
SUMMARY OF LOCAL LIMITS SAMPLING FOR MERCURY

MERCURY REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
10/23/2013	4.50	0.2	0.2		0.2		0.2		0.2			0.2	0.01	0.01	0.01	0.01	0.01
1/29/2014	6.70	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
5/7/2014	7.01	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
7/30/2014	3.55	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
10/1/2014	3.25	0.2	0.2		0.2		0.2		0.2			0.48	0.01	0.01	0.01	0.01	0.01
1/7/2015	5.87	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
5/6/2015	5.31	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
7/30/2015	5.43	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
10/14/2015	4.53	0.2	0.2		0.2		0.2		0.2			1.2	0.01	0.01	0.01	0.01	0.01
1/20/2016	6.64	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
4/19/2016	6.42	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
8/17/2016	4.19	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
11/30/2016	4.26	0.2	0.2		0.2		0.2		0.2			0.2	0.01	0.01	0.01	0.01	0.01
2/1/2017	6.99	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
4/19/2017	6.62	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
7/26/2017	2.98	0.2	0.2		0.2		0.2		0.2				0.00	0.00	0.00	0.00	0.00
11/8/2017	4.78	0.2	0.2		0.2		0.2		0.2			0.2	0.01	0.01	0.01	0.01	0.01
1/31/2018	7.02	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
6/13/2018	4.44	0.2	0.2		0.2		0.2		0.2				0.01	0.01	0.01	0.01	0.01
AVE	**5.55**	**0.3**	**0.3**		**0.3**		**0.2**		**0.3**			**0.4**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
AVE '17-18	**4.81**	**0.2**	**0.2**		**0.2**		**0.2**		**0.2**			**0.2**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
EPA Removals				**10%**		**60%**		**67%**		**67%**							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.000018 mg/l Monthly average 0.003558 mg/l Max day 0.003558 mg/l Max day

Q_{POTW} = 4.81 mgd

$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})}$ = 0.0022 lbs/day % of AHL **330%**

0.4320 lbs/day **2%**

Based on monthly average

C_{Inhib} = 0.1 mg/l

AHL SEC= $\frac{8.34\ (C\ Inhib_2)\ (Q\_POTW)}{(1 - R_{Prim})}$ = 4.45 lbs/day

$C_{Inhib\ nitro}$ = n/a mg/l

AHL SEC= $\frac{8.34\ (C\ Inhib\ 3)\ (Q\_POTW)}{(1 - R\ sec)}$ = lbs/day

0%

TABLE 6-14

SUMMARY OF LOCAL LIMITS SAMPLING FOR NICKEL

NICKELREMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	1.5	1.3	13%	1.6	-7%	1.3	13%	1.2	20%	20%		0.05	0.05	0.06	0.05	0.04
10/23/2013	4.50	1.4	1.3	7%	1.5	-7%	1.4	0%	1.2	14%	14%	4.4	0.05	0.05	0.06	0.05	0.05
1/29/2014	6.70	1.0	1.2	-20%	1.4	-40%	1.1	-10%	1.0		0%		0.06	0.07	0.08	0.06	0.06
5/7/2014	7.01	1	1	0%	1	0%	1	0%	1				0.06	0.06	0.06	0.06	0.06
7/30/2014	3.55	1.6	1.4	13%	1.2	25%	1.6	0%	1.1	31%	31%		0.05	0.04	0.04	0.05	0.03
10/1/2014	3.25	2.0	5.2	-160%	1.1	45%	1.1	45%	1.2	40%	40%	12	0.05	0.14	0.03	0.03	0.03
1/7/2015	5.87	1.1	1	9%	1	9%	1	9%	1	9%	9%		0.05	0.05	0.05	0.05	0.05
5/6/2015	5.31	4.5	1.9	58%	1.1	76%	1	78%	1.1	76%	76%		0.20	0.08	0.05	0.04	0.05
7/30/2015	5.43	1.6	1.4	13%	1.2	25%	1.6	0%	1.1	31%	31%		0.07	0.06	0.05	0.07	0.05
10/14/2015	4.53	2.1	2.3	-10%	2.9	-38%	1.5	29%	1.4	33%	33%	9.2	0.08	0.09	0.11	0.06	0.05
1/20/2016	6.64	1.4	1.9	-36%	1	29%	1	29%	1	29%	29%		0.08	0.11	0.06	0.06	0.06
4/19/2016	6.42	1.8	1	44%	1.2	33%	1.5	17%	1.5	17%	17%		0.10	0.05	0.06	0.08	0.08
8/17/2016	4.19	1.8	2.3	-28%	1.0	44%	1.3	28%	1.1	39%	39%		0.06	0.08	0.03	0.05	0.04
11/30/2016	4.26	2.2	1.7	23%	1	55%	1	55%	1	55%	55%	5.4	0.08	0.06	0.04	0.04	0.04
2/1/2017	6.99	1.2	1	17%	1	17%	1	17%	1	17%	17%		0.07	0.06	0.06	0.06	0.06
4/19/2017	6.62	1.0	1.0	0%	1	0%	1		1				0.06	0.06	0.06	0.06	0.06
7/26/2017	2.98	1.4	1.0	29%	1	29%	1	29%	1	29%	29%		0.03	0.02	0.02	0.02	0.02
11/8/2017	4.78	1.2	1.0	17%	1	17%	30.8		1	17%	17%	1.8	0.05	0.04	0.04	1.23	0.04
1/31/2018	7.02	2.0	1	50%	1	50%	1	50%					0.12	0.06	0.06	0.06	
6/13/2018	4.44	1.8	1.5	17%	1.5	17%	1.6	50%	1.6	11%			0.07	0.06	0.06	0.06	0.06
AVE	5.55	7.0	6.8	6%	6.6	19%	4.3	15%	6.6	25%	25%	13.0	0.33	0.32	0.31	0.21	0.32
AVE '17-18	4.81	1.6	1.1	28%	1.1	28%	8.6	43%	1.2	19%	23%	1.8	0.07	0.04	0.04	0.34	0.04
EPA Removals				14%		42%		17%		85%							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.185 mg/l Average monthly 1.75 mg/l Max day

Q_{POTW} = 4.81 mgd

$$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})} = 9.128 \text{ lbs/day}$$

% of AHL 0.7%

AHL 9.06 lbs/day

C_{Inhib} = 1 mg/l

$$\text{AHL SEC} = \frac{8.34 (C \text{ Inhib}_2)(Q \text{ POTW})}{(1 - R_{Prim})} = 46.60 \text{ lbs/day}$$

$C_{Inhib\ nitro}$ = 0.25 mg/l

$$\text{AHL SEC} = \frac{8.34 (C \text{ Inhib } 3)(Q \text{ POTW})}{(1 - R \text{ sec})} = 13.91 \text{ lbs/day}$$

TABLE 6-15

SUMMARY OF LOCAL LIMITS SAMPLING FOR SILVER

SILVER REMOVALS

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	1	1		1		1		1				0.04	0.04	0.04	0.04	0.04
10/23/2013	4.50	1	1		1		1		1			1	0.04	0.04	0.04	0.04	0.04
1/29/2014	6.70	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
5/7/2014	7.01	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
7/30/2014	3.55	1	1		1		1		1				0.03	0.03	0.03	0.03	0.03
10/1/2014	3.25	1	1		1		1		1			5	0.03	0.03	0.03	0.03	0.03
1/7/2015	5.87	1	1		1		1		1				0.05	0.05	0.05	0.05	0.05
5/6/2015	5.31	1	1		1		1		1				0.04	0.04	0.04	0.04	0.04
7/30/2015	5.43	1	1		1		1		1				0.05	0.05	0.05	0.05	0.05
10/14/2015	4.53	1	1		1		1		1			2	0.04	0.04	0.04	0.04	0.04
1/20/2016	6.64	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
4/19/2016	6.42	1	1		1		1		1				0.05	0.05	0.05	0.05	0.05
8/17/2016	4.19	1	1		1		1		1				0.03	0.03	0.03	0.03	0.03
11/30/2016	4.26	1	1		1		1		1			1	0.04	0.04	0.04	0.04	0.04
2/1/2017	6.99	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
4/19/2017	6.62	1	1		1		1		1				0.06	0.06	0.06	0.06	0.06
7/26/2017	2.98	1	1		1		1		1				0.02	0.02	0.02	0.02	0.02
11/8/2017	4.78	1	1		1		1		1			1	0.04	0.04	0.04	0.04	0.04
1/31/2018	7.02	2	1		1		1		1				0.12	0.06	0.06	0.06	0.06
6/13/2018	4.44	1	1		1		1		1				0.04	0.04	0.04	0.04	0.04
AVE	**5.50**	**1.0**	**1**		**1**		**1**		**1**			**1**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
AVE '17-18	**5.52**	**1**	**1**		**1**		**1**		**1**			**1**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**
EPA Removals				**20%**		**75%**		**62%**		**75%**							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} n/a mg/l Average monthly 0.011 mg/l Max day

Q_{POTW} = 5.52 mgd

$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})}$ = lbs/day

2.0238 lbs/day[note 1)]

% of AHL 2%

C_{Inhib} = n/a mg/l

Note 1 cacluated using daily maximum

AHL 1.98 lbs/day

AHL SEC= $\frac{8.34\ (C\ Inhib_2)\ (Q\ POTW)}{(1 - R_{Prim})}$ = lbs/day

$C_{Inhib\ nitro}$ = n/a mg/l

AHL SEC= $\frac{8.34\ (C\ Inhib\ 3)\ (Q\ POTW)}{(1 - R\ sec)}$ = lbs/day

TABLE 6-16A
SUMMARY OF LOCAL LIMITS SAMPLING FOR ZINC

ZINC REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	Removal	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	µg/l	µg/l	%	µg/l	%	µg/l	%	µg/l	%	%	µg/l	Mass in Pounds				
7/24/2013	4.27	74	37	50%	38	49%	31	58%	32	57%	57%		2.6	1.3	1.4	1.1	1.1
10/23/2013	4.50	85	40	53%	33	61%	28	67%	25	71%	71%	320	3.2	1.5	1.2	1.1	0.9
1/29/2014	6.70	50	57	-14%	52	-4%	28	44%	28	44%	44%		2.8	3.2	2.9	1.6	1.6
5/7/2014	7.01	49	50	-2%	40	18%	36	27%	34	31%	31%		2.9	2.9	2.3	2.1	2.0
7/30/2014	3.55	94	50	47%	31	67%	30	68%	26	72%	72%		2.8	1.5	0.9	0.9	0.8
10/1/2014	3.25	84	110	-31%	30	64%	30	64%	30	64%	64%	1500	2.3	3.0	0.8	0.8	0.8
1/7/2015	5.87	58	43	26%	40	31%	35	40%	34	41%	41%		2.8	2.1	2.0	1.7	1.7
5/6/2015	5.31	160	120	25%	37	77%	37	77%	35	78%	78%		7.1	5.3	1.6	1.6	1.5
7/30/2015	5.43	94	50	47%	31	67%	30	68%	26	72%	72%		4.3	2.3	1.4	1.4	1.2
10/14/2015	4.53	92	54	41%	60	35%	30	67%	30	67%	67%	1400	3.5	2.0	2.3	1.1	1.1
1/20/2016	6.64	88	58	34%	36	59%	37	58%	38	57%	57%		4.9	3.2	2.0	2.0	2.1
4/19/2016	6.42	76	39	49%	43	43%	27	64%	40	47%	47%		4.1	2.1	2.3	1.4	2.1
8/17/2016	4.19	96	88	8%	83	14%	44	54%	39	59%	59%		3.4	3.1	2.9	1.5	1.4
11/30/2016	4.26	160	110	31%	45	72%	57	64%	52	68%	68%	520	5.7	3.9	1.6	2.0	1.8
2/1/2017	6.99	94	81	14%	40	57%	59	37%	40	57%	57%		5.5	4.7	2.3	3.4	2.3
4/19/2017	6.62	108	116	-7%	45.3	58%	46	57%	41.2	62%	62%		6.0	6.4	2.5	2.5	2.3
7/26/2017	2.98	90	50.6	44%	51.7	43%	37.4	58%	36.4	60%	60%		2.2	1.3	1.3	0.9	0.9
11/8/2017	4.78	81.1	6.05	93%	29.4	64%	250	-208%	31.9	61%	61%	178	3.2	0.2	1.2	10.0	1.3
1/31/2018	7.02	52.9	56	-6%	36.5	31%	43.1	19%	42.4	20%	20%		3.1	3.3	2.1	2.5	2.5
6/13/2018	4.44	103	60.3	41%	51.8	50%	50.2	51%	45.1	56%	56%		3.8	2.2	1.9	1.9	1.7
AVE	5.50	87	59	29%	37	55%	36	56%	33	60%	60%	434	3.89	2.71	1.68	1.65	1.50
AVE '17-18	4.81	82	43	43%	42	47%	44	-20%	39	49%	49%	178	3.10	1.75	1.63	3.82	1.58
EPA Removals				27%		79%		78%		79%							

Removal efficencies based on EPA Local Limts Development Guidence (july 2004)

C_{RIPDES} 0.127 mg/l Average monthly 0.187 mg/l Max day

Q_{POTW} = 4.81 mgd

$$AHL_{RIPDES} = \frac{(8.34)(C_{RIPDES})(Q_{POTW})}{(1 - R_{POTW})} = 9.993 \text{ lbs/day}$$

C_{Inhib} = 0.3 mg/l

$$\text{AHL SEC} = \frac{8.34\,(C\ Inhib_2)\,(Q\ POTW)}{(1 - R_{Prim})} = 21.08 \text{ lbs/day}$$

$C_{Inhib\ nitro}$ = 0.08 mg/l

$$\text{AHL SEC} = \frac{8.34\,(C\ Inhib\ 3)\,(Q\ POTW)}{(1 - R\ sec)} = 6.021 \text{ lbs/day}$$

% of AHL 51%

AHL 2.93 lbs/day

TABLE 6-16B

TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

ZINC LOADING AND REMOVAL

MONTH/YEAR	FLOW	Total Zinc (µg/L) Mo. Avg.	Total Zinc (µg/L) Day Max.	Total Zinc(µg/L) Mo. Avg.	Total Zinc(µg/L) Day Max.	ZINC REMOVAL
	MGD	µg/l	µg/l	µg/l	µg/l	%
Jul-17	5.1	84.0	84.0	34.0	34.0	60%
Oct-17	3.9	98.9	98.9	36.0	36.0	64%
Jan-18	6.6	90.0	90.0	46.4	46.4	48%
Apr-18	6.7	60.4	60.4	42.4	42.4	30%
AVERAGE	5.6	83	83	40	40	50%

MONTH/YEAR	Total Zinc (lb/day) Mo. Avg.	Total Zinc (lb/day) Day Max.	Total Zinc (lb/day) Mo. Avg.	Total Zinc (lb/day) Day Max.	ZINC % REMOVAL
	LBS/D	LBS/D	LBS/D	LBS/D	%
Jul-17	3.57	3.57	1.45	1.45	60%
Oct-17	3.22	3.22	1.17	1.17	64%
Jan-18	4.95	4.95	2.55	2.55	48%
Apr-18	3.38	3.38	2.37	2.37	30%
AVERAGE	3.78	3.78	1.89	1.89	50%

Date	AVE. FLOW (mgd)	influent	primary effl	secondary effl	BAF eff	µg/l effluent	ZINC % REMOVAL	DOMESTIC
	MGD	µg/l	µg/l	µg/l	µg/l	µg/l	%	µg/l
7/26/2017	2.98	90	50.6	51.70	37.4	36.4	60%	
11/8/2017	4.78	81.1	6.05	29.40	250	31.9	61%	178
1/31/2018	7.02	52.9	56	36.50	43.1	42.4	20%	
6/13/2018	4.44	103	60.3	51.80	50.2	45.1	56%	
AVERAGE	4.81	82	43	42	95	39	49%	178

Date	INFLUENT LBS/D	PRIMARY LBS/D	SECONDARY LBS/D	BAF eff LBS/D	EFFLUENT LBS/D	ZINC % REMOVAL
7/26/2017	2.237	1.258	1.285	0.930	0.905	60%
11/8/2017	3.233	0.241	1.172	9.966	1.272	61%
1/31/2018	3.097	3.279	2.137	2.523	2.482	20%
6/13/2018	3.814	2.233	1.918	1.859	1.670	56%
Average	3.10	1.75	1.63	3.82	1.58	49%

TABLE 6-17

SUMMARY OF LOCAL LIMITS SAMPLING FOR NITROGEN

NITROGEN REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	mg/l	Mass in Pounds				
7/24/2013	4.27	48.05	39.78	17%	29.56	38%	12.14	75%	12.77	73%		1,711	1,417	1,053	432	455
10/23/2013	4.50	63.07	41.12	35%	26.6	58%	11.45	82%	11.54	82%	120.1	2,367	1,543	998	430	433
1/29/2014	6.70	25.10	28.18	-12%	17.26	31%	14.90	41%	15.65	38%		1,402	1,575	964	833	875
5/7/2014	7.01	8.02	25.73	-221%	16.95	-111%	9.95	-24%	9.96	-24%		469	1,504	991	582	582
7/30/2014	3.55	45.04	37.11	18%	25.2	44%	7.17	84%	7.68	83%		1,334	1,099	746	212	227
10/1/2014	3.25	48.04	36.03	25%	24.0	50%	7.42	85%	6.42	87%	380.4	1,302	977	651	201	174
1/7/2015	5.87	32.02	33.47	-5%	15.7	51%	17.00	47%	17.01	47%		1,568	1,639	766	832	833
5/6/2015	5.31	39.05	35.05	10%	18.0	54%	8.05	79%	8.18	79%		1,729	1,552	795	356	362
7/30/2015	5.43	45.04	37.01	18%	20.2	55%	7.17	84%	7.68	83%		2,040	1,676	915	325	348
10/14/2015	4.53	53.03	39.02	26%	36.0	32%	7.60	86%	7.10	87%	140.2	2,004	1,474	1,361	287	268
1/20/2016	6.64	23.11	21.85	5%	13.0	44%	15.60	32%	13.00	44%		1,279	1,210	721	864	720
4/19/2016	6.42	24.16	22.71	6%	22.0	9%	7.69	68%	7.24	70%		1,294	1,216	1,178	412	388
8/17/2016	4.19	40.03	29.02	28%	22.0	45%	6.30	84%	7.52	81%		1,399	1,014	769	220	263
11/30/2016	4.26	47.18	44.02	7%	37.0	22%	36.03	24%	37.02	22%	110.3	1,676	1,564	1,315	1,280	1315
2/1/2017	6.99	29.58	27.28	8%	17.1	42%	17.00	43%	17.13	42%		1,724	1,590	994	991	999
4/19/2017	6.62	29.82	30.79	-3%	18.2	39%	9.42	68%	9.79	67%		1,647	1,700	1,005	520	541
7/26/2017	2.98	35.14	27.84	21%	17.4	50%	11.65	67%	17.53	50%		873	692	433	290	436
11/8/2017	4.78	29.52	30.23	-2%	15.1	49%	18.92	36%	15.93	46%	80.8	1,177	1,205	602	754	635
1/31/2018	7.02	24.81	24.16	3%	16.3	34%	15.10	39%	14.90	40%		1,453	1,414	954	884	872
6/13/2018	4.44	50.33	38.84	23%	21.7	57%	7.18	86%	7.83	84%		1,864	1,438	804	266	290
AVE	**5.50**	**37**	**32**	**7%**	**24**	**32%**	**12.96**	**60%**	**13.01**	**59%**	**116.0**	**1,552**	**1,382**	**1,022**	**595**	**584**
AVE '17-18	**5.41**	**35**	**31**	**8%**	**18**	**47%**	**13.1**	**54%**	**12.9**	**57%**	**80.8**	**1,498**	**1,352**	**787**	**635**	**599**

Data not included in final removal

Design load 3,503 lbs/d
remaining at BAF 2,716 lbs/d
based on the loading for at the BAF

% of Design load 43%

TABLE 6-18

SUMMARY OF LOCAL LIMITS SAMPLING FOR PHOSPHORUS

PHOSPHORUS REMOVAL

BLUE INDICATES LESS THAN DETECTION LIMIT

Date	Flow	Influent	Primary	Removal	Secondary	Removal	BAF	Removal	Effluent	TOTAL Removal	Domestic	Influent	Primary	Secondary	BAF	Effluent
	mgd	mg/l	mg/l	%	mg/l	%	mg/l	%	mg/l	%	mg/l	Mass in Pounds				
7/24/2013	4.27	6.9	2.7	61%	1.40	80%	1.10	84%	1.20	83%		246	96	50	39	43
10/23/2013	4.50	8.5	1.9	78%	0.85	90%	0.64	92%	0.65	92%	16.0	319	71	32	24	24
1/29/2014	6.70	3.1	3.3	-6%	1.50	52%	1.30	58%	1.20	61%		173	184	84	73	67
5/7/2014	7.01	2.9	2.8	3%	1.20	59%	0.99	66%	0.96	67%		170	164	70	58	56
7/30/2014	3.55	6.6	4.6	30%	2.30	65%	1.60	76%	1.50	77%		195	136	68	47	44
10/1/2014	3.25	8.7	4.3	51%	1.10	87%	0.51	94%	0.50	94%	42.0	236	117	30	14	14
1/7/2015	5.87	4.3	3.2	26%	1.20	72%	0.85	80%	0.80	81%		211	157	59	42	39
5/6/2015	5.31	5.3	4.7	11%	1.50	72%	1.10	79%	1.10	79%		235	208	66	49	49
7/30/2015	5.43	6.6	4.6	30%	2.30	65%	1.60	76%	1.50	77%		299	208	104	72	68
10/14/2015	4.53	7.8	3.2	59%	0.67	91%	0.34	96%	0.31	96%	55.0	295	121	25	13	12
1/20/2016	6.64	3.8	2.7	29%	0.62	84%	0.52	86%	0.57	85%		210	150	34	29	32
4/19/2016	6.42	4.4	0.77	83%	0.46	90%	0.46	90%	0.05	99%		236	41	25	25	3
8/17/2016	4.19	6.1	3.1	49%	1.40	77%	0.87	86%	0.08	99%		213	108	49	30	3
11/30/2016	4.26	7.5	4.7	37%	1.20	84%	1.20	84%	1.10	85%	22.0	266	167	43	43	39
2/1/2017	6.99	3.8	2.9	24%	0.57	85%	0.44	88%	0.44	88%		222	169	33	26	26
4/19/2017	6.62	4.7	4.09	12%	1.30	72%	0.14	97%	0.16	97%		257	226	72	8	9
7/26/2017	2.98	7.2	4.46	38%	1.44	80%	0.06	99%	0.07	99%		179	111	36	2	2
11/8/2017	4.78	4.8	4.96	-3%	1.25	74%	0.84	82%	1.07	78%	8.9	191	198	50	34	43
1/31/2018	7.02	3.9	3.06	22%	0.53	86%	0.47	88%	0.51	87%		228	179	31	28	30
6/13/2018	4.44	6.2	4.61	25%	2.62	57%	0.23	96%	0.23	96%		228	171	97	9	9
AVE	**5.39**	**5.8**	**3.6**	**33%**	**1.43**	**74%**	**0.93**	**83%**	**0.95**	**82%**	**19**	**250**	**160**	**63**	**41**	**44**
AVE '17-18	**4.81**	**5.5**	**4.3**	**20%**	**1.46**	**74%**	**0.26**	**91%**	**0.47**	**90%**	**9**	**207**	**165**	**53**	**18**	**21**

Design load 876 lbs/day
AHL 669 lbs/day

% of Design load 24%

FIGURE 6-1
AVERAGE & PEAK DAILY FLOWS
JULY 2017 TO JUNE 2018

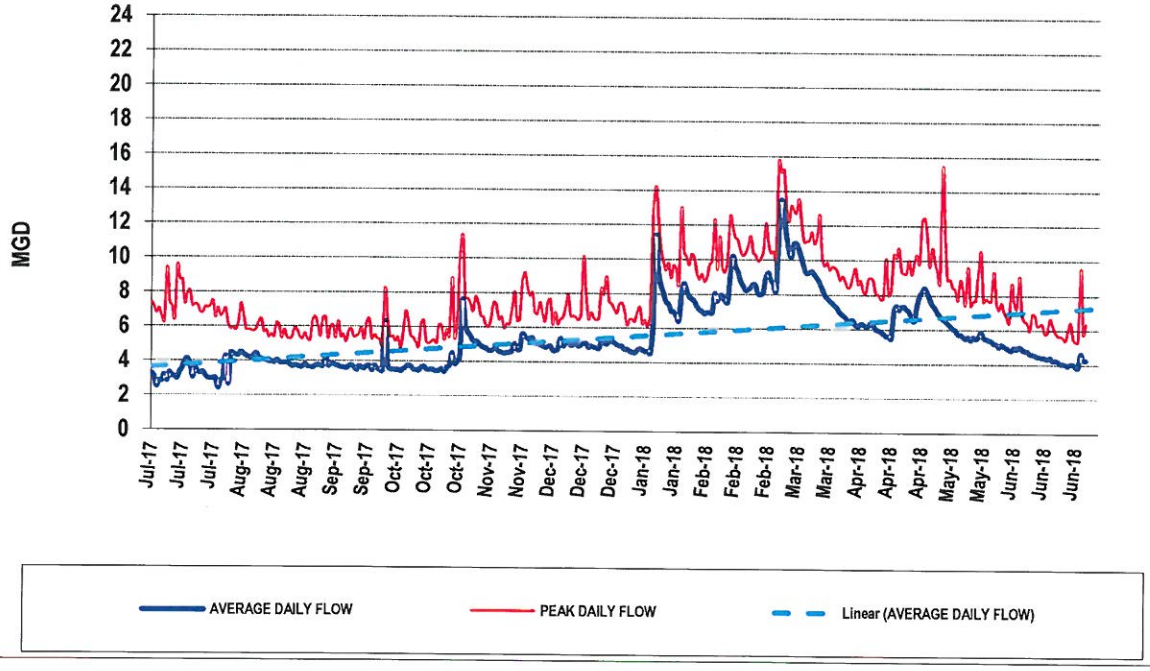


FIGURE 6-2
AVERAGE - MONTHLY FLOW VS MONTHLY LIMIT
DECEMBER 2013 TO JUNE 2018

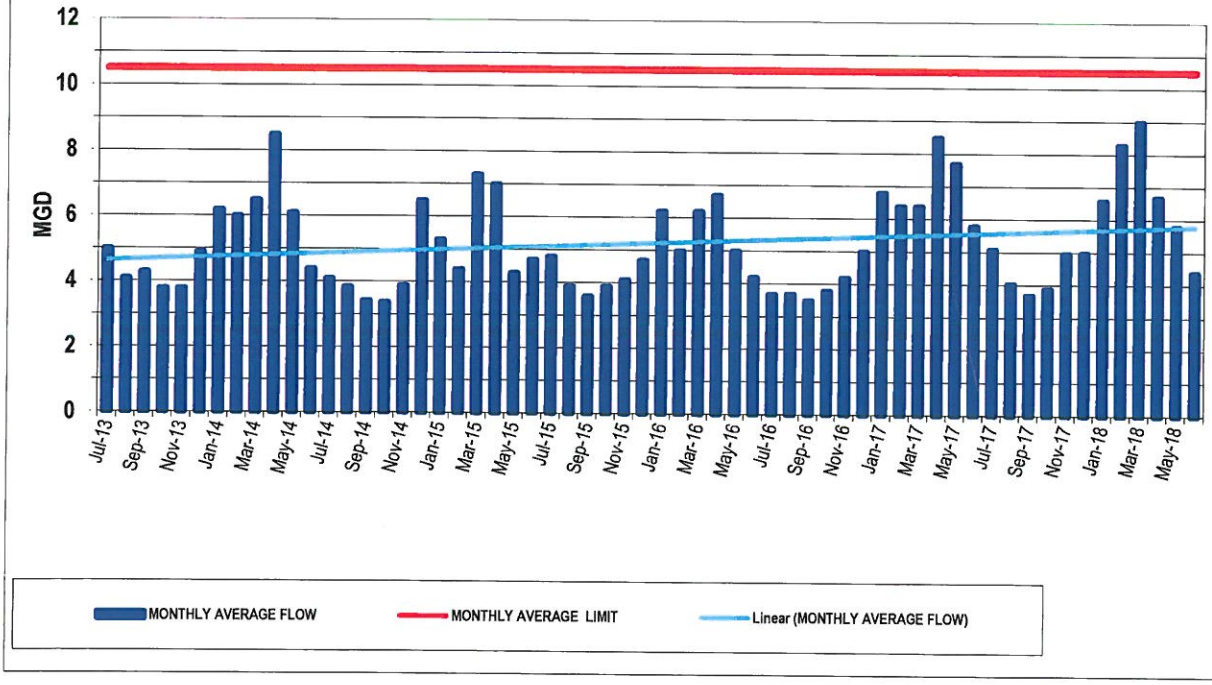


FIGURE 6-3
AVERAGE- DAILY AND MONTHLY FLOW VS MONTHLY LIMIT
JULY 2017 TO JUNE 2018

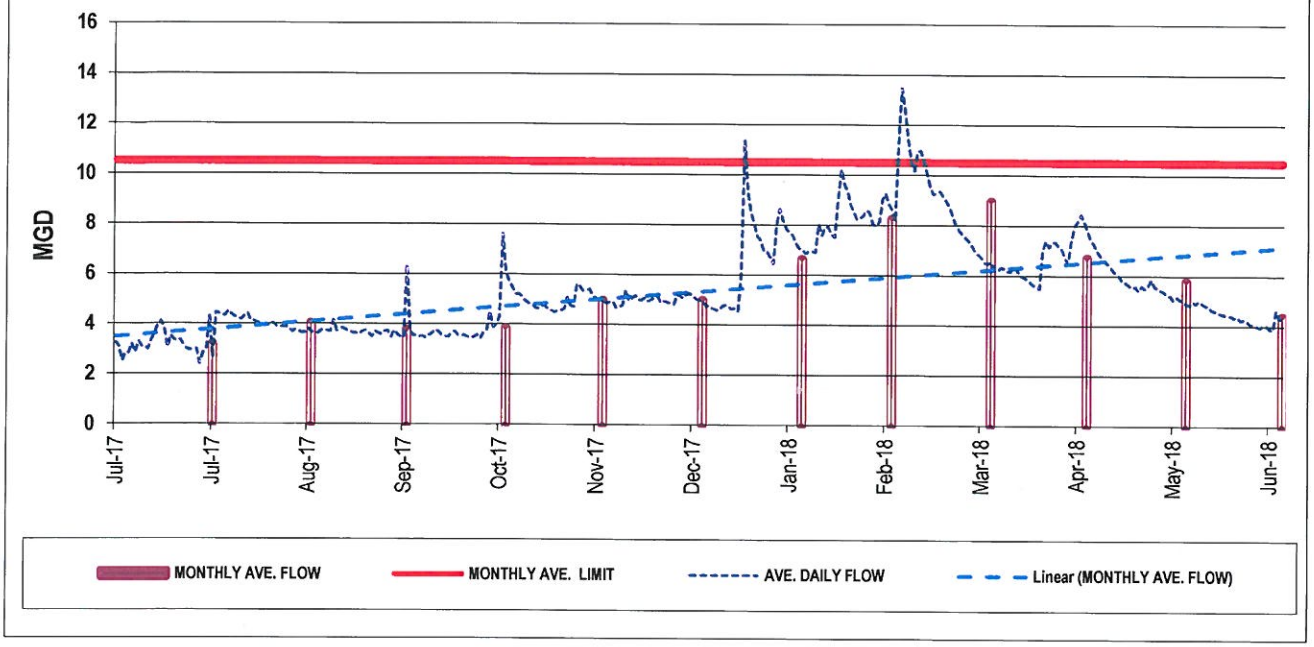


FIGURE 6-4
BOD &CBOD MONTHLY VS LIMITS
JULY 2013 TO JUNE 2018

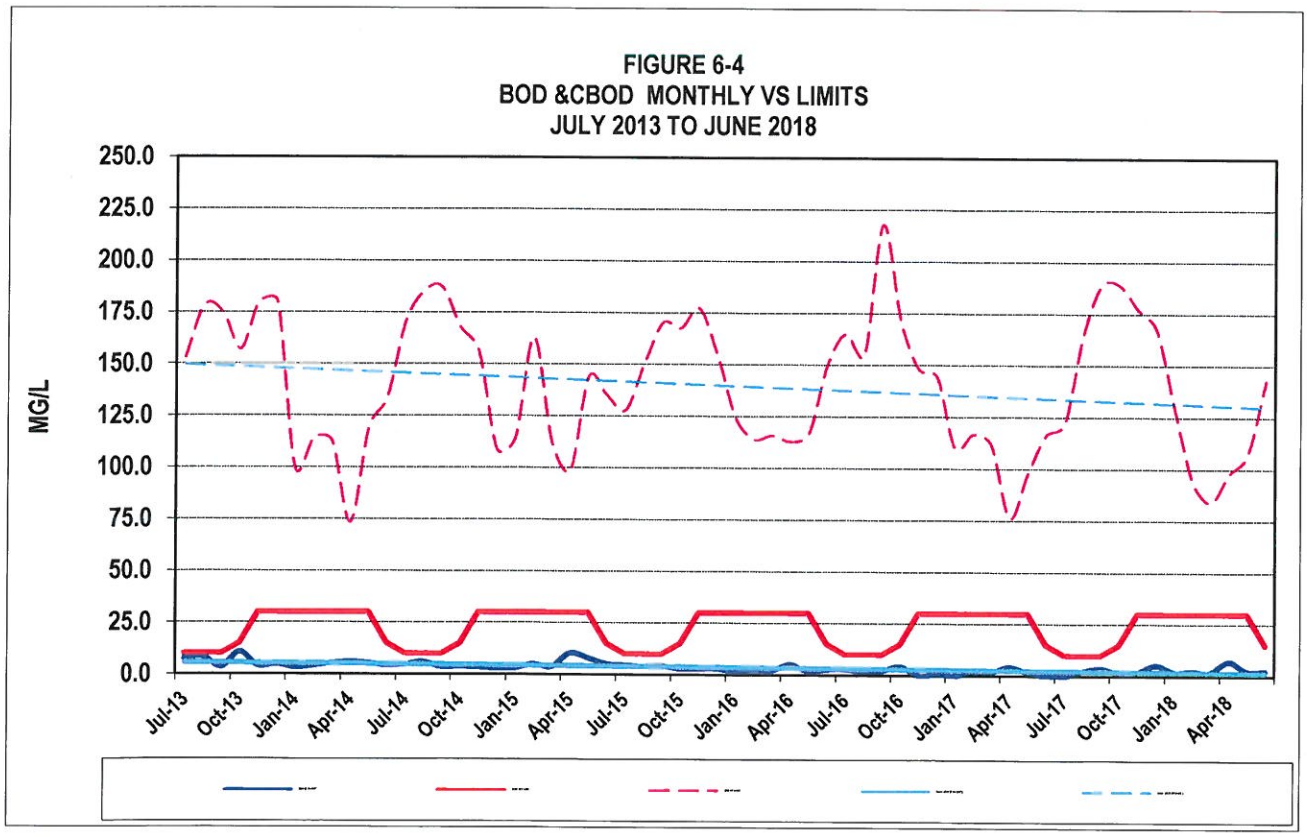


FIGURE 6-5
BOD & CBOD MONTHLY VS LIMITS
JULY 2017- JUNE 2018

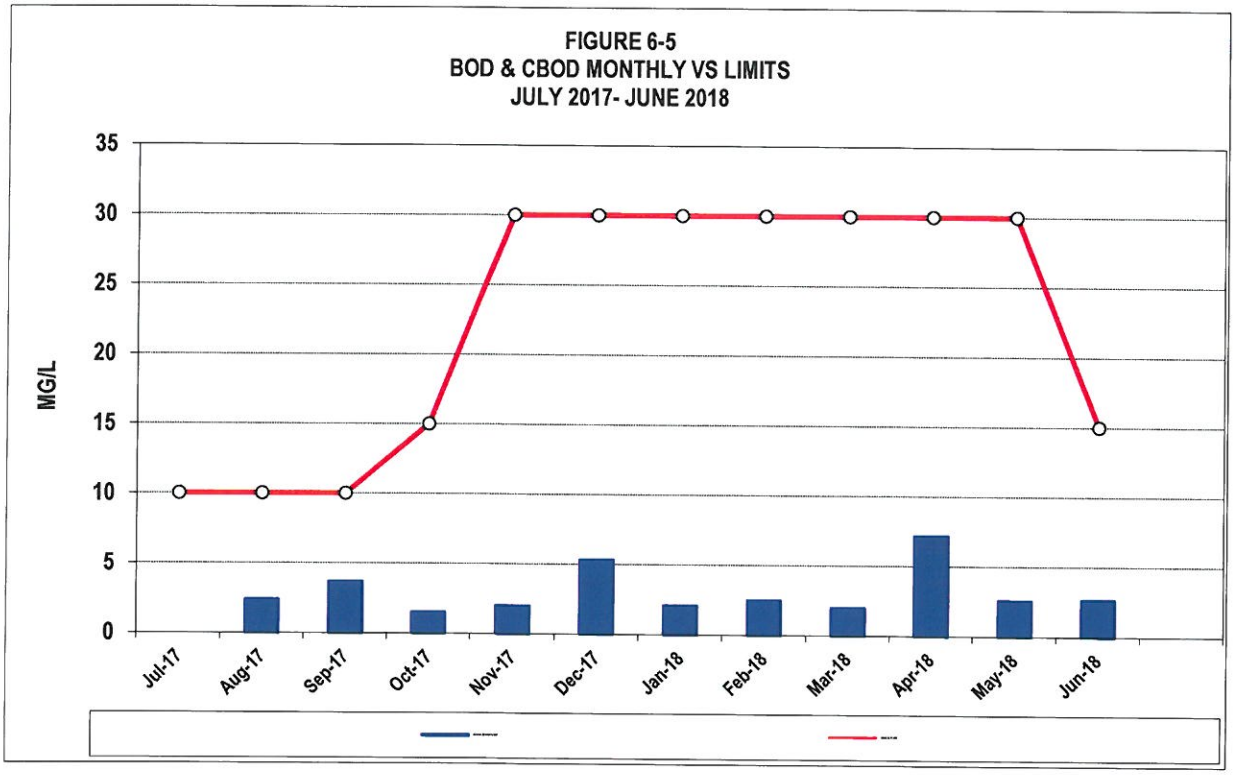


FIGURE 6-6
BOD & CBOD EFFLUENT WEEKLY LIMITS
JULY 2017 TO JUNE 2018

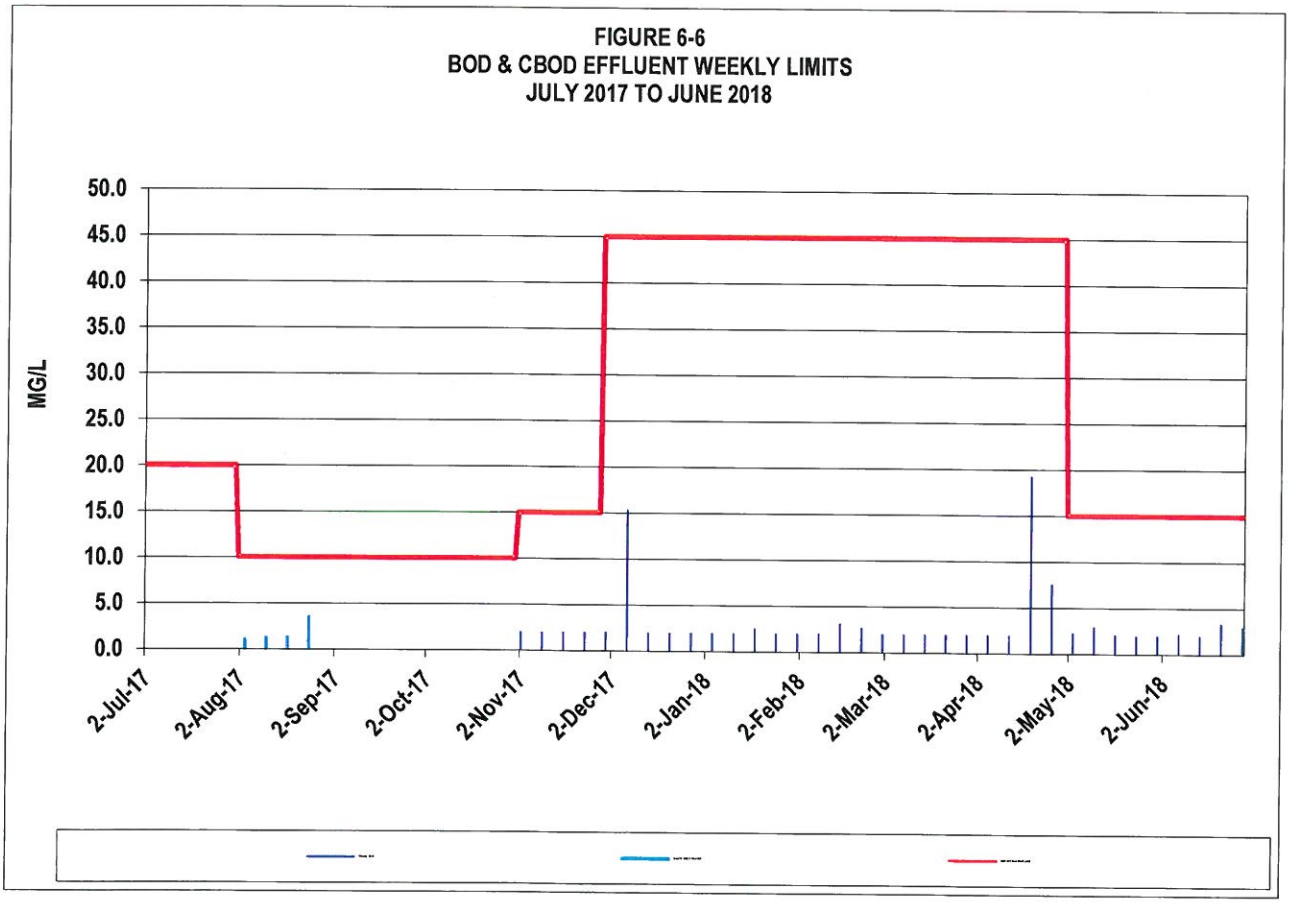


FIGURE 6-7
BOD & CBOD EFFLUENT DAILY LIMITS
JULY 2017 TO JUNE 2018

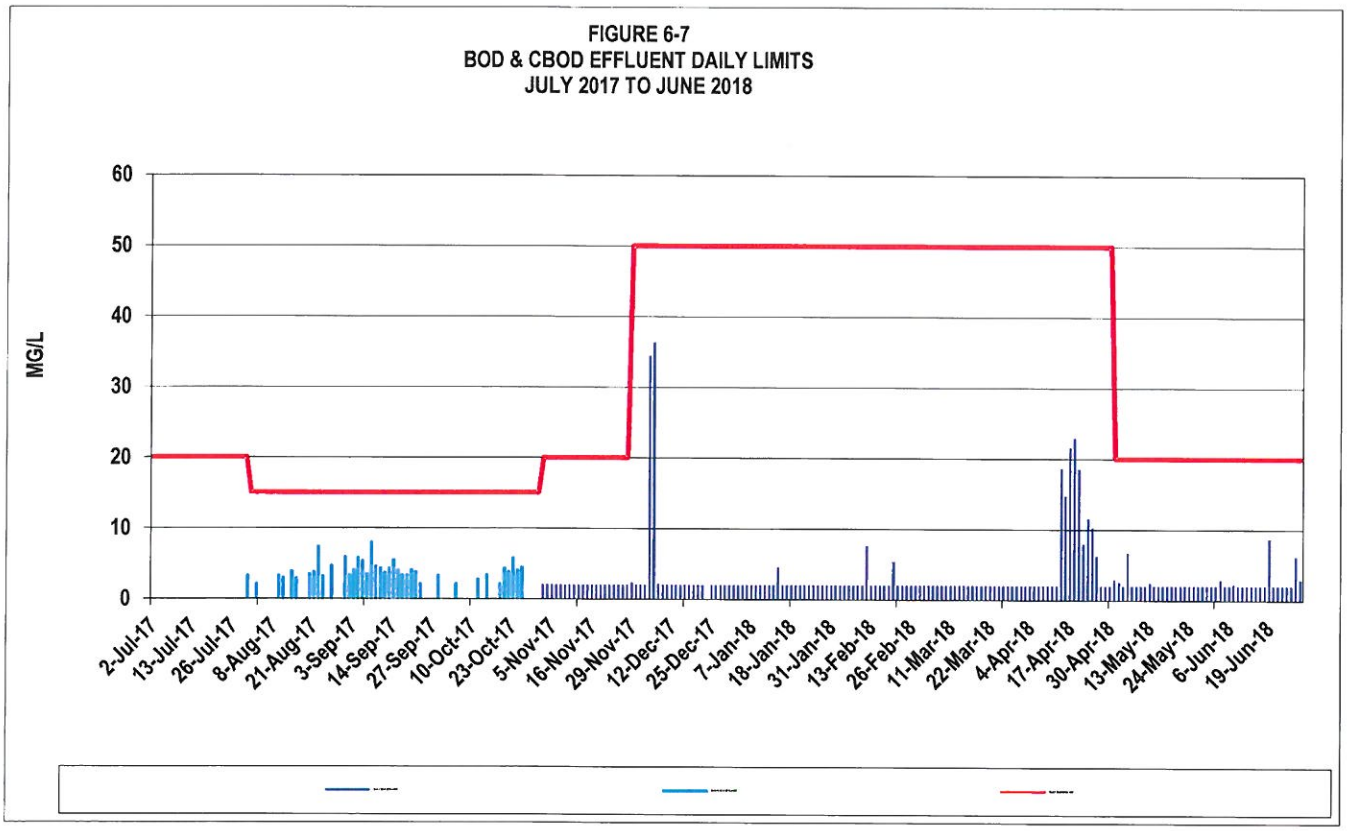


FIGURE 6-8
BOD & CBOD VS LIMIT AVERAGE MONTHLY MASS LOADING
JULY 2013 TO JUNE 2018

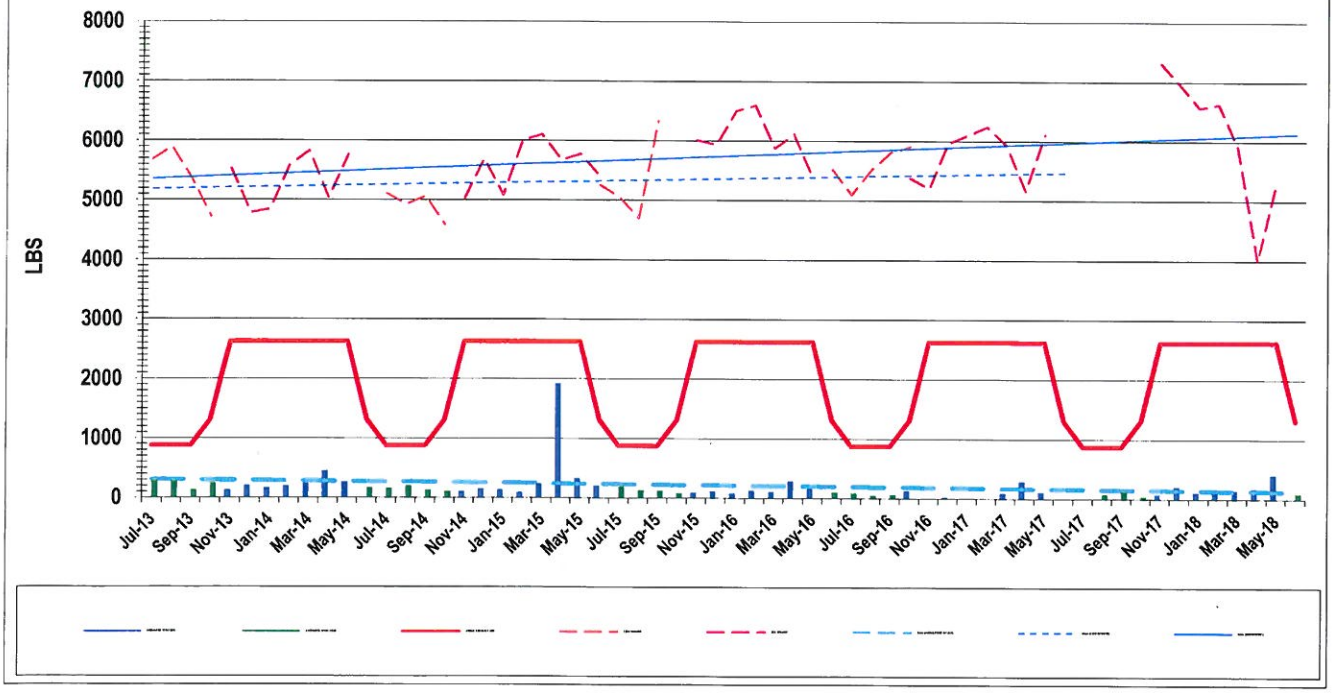


FIGURE 6-9
BOD & CBOD VS AVERAGE MONTHLY MASS LIMIT
JULY 2017 TO JUNE 2018

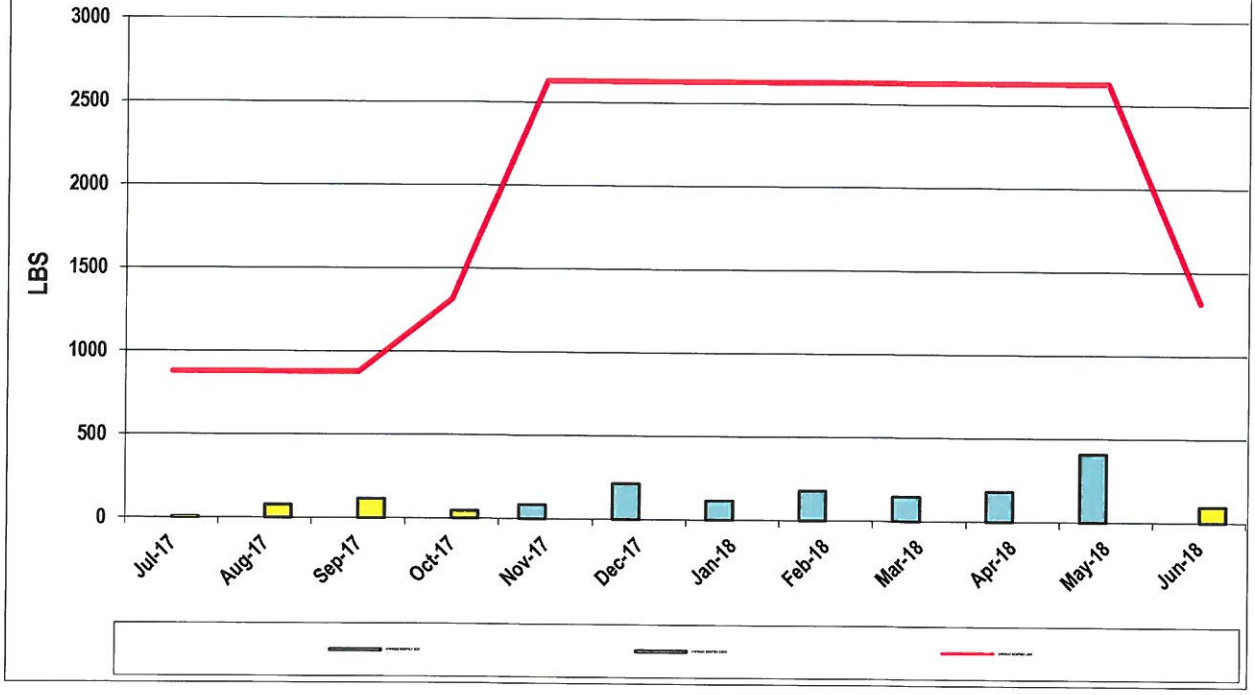


FIGURE 6-10
BOD & CBOD VS LIMIT DAILY MAXIMUM POUNDS/DAY
JULY 2017 - JUNE 2018

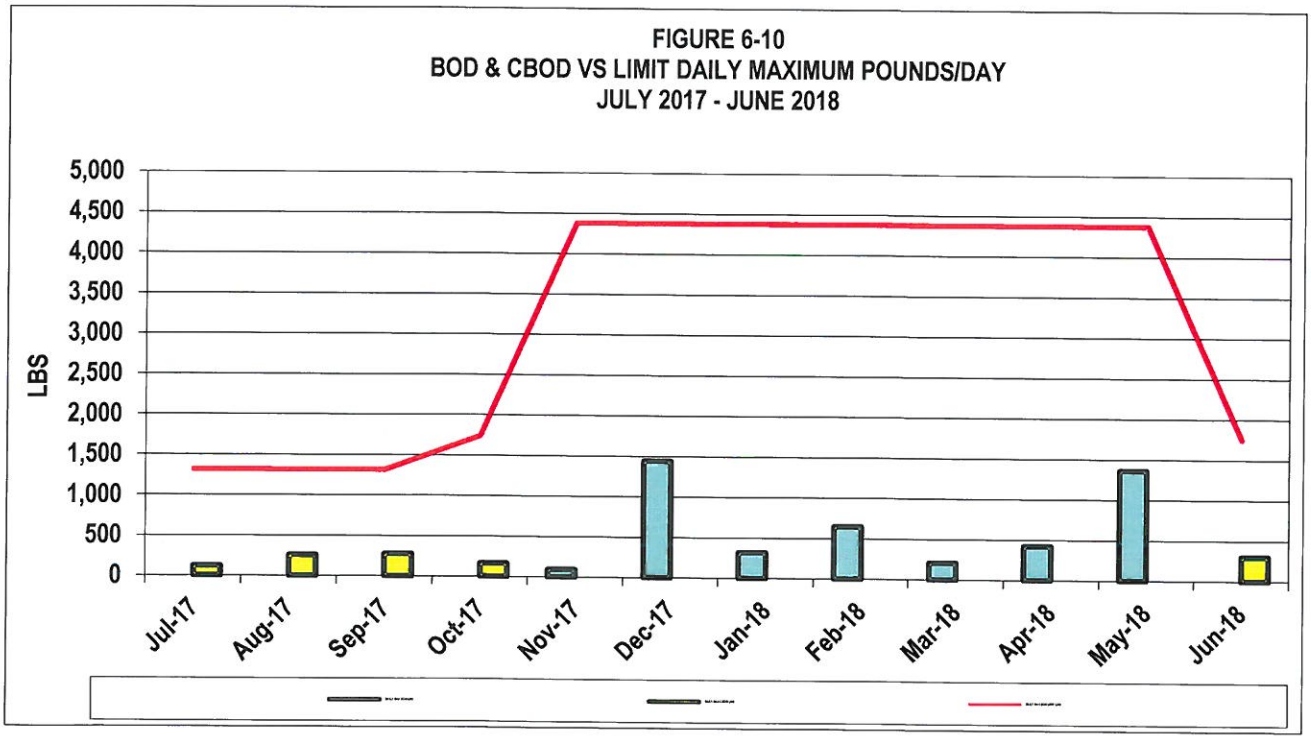


FIGURE 6-11
TSS MONTHLY VS LIMITS
JULY 2013 TO JUNE 2018

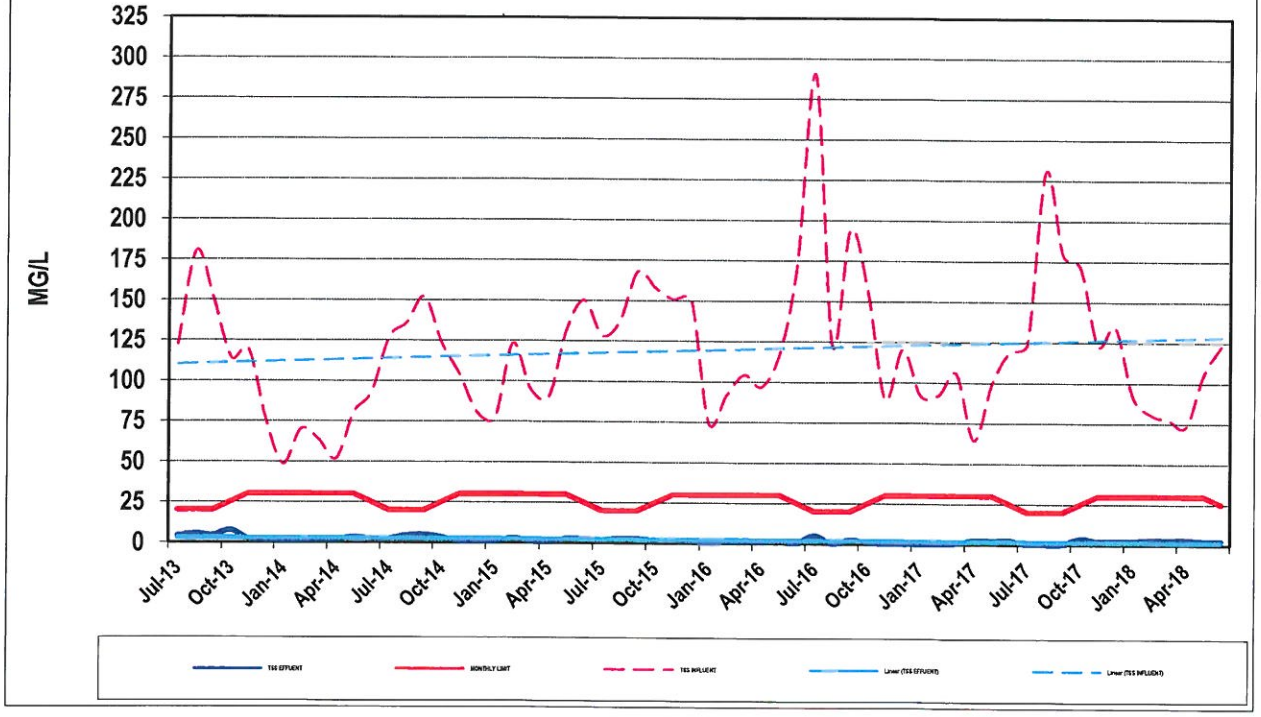


FIGURE 6-12
TSS MONTHLY VS LIMITS
JULY 2017 JUNE 2018

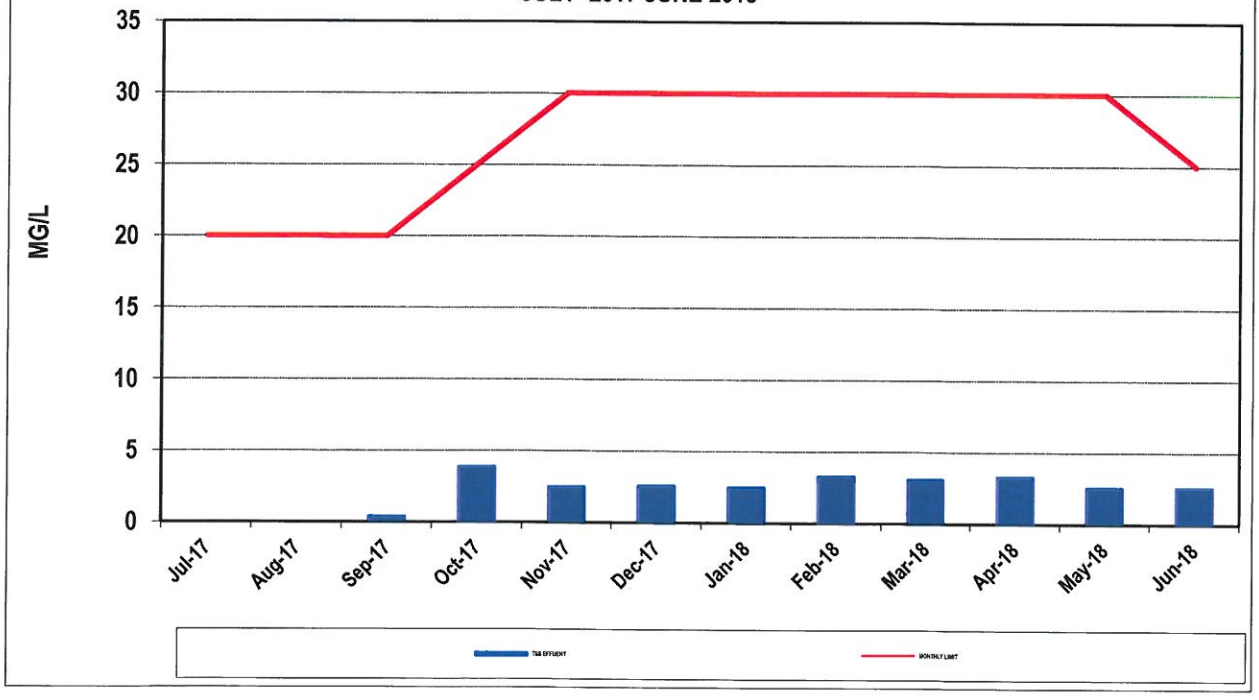


FIGURE 6-13
TSS WEEKLY VS LIMITS
JULY 2017 - JUNE 2018

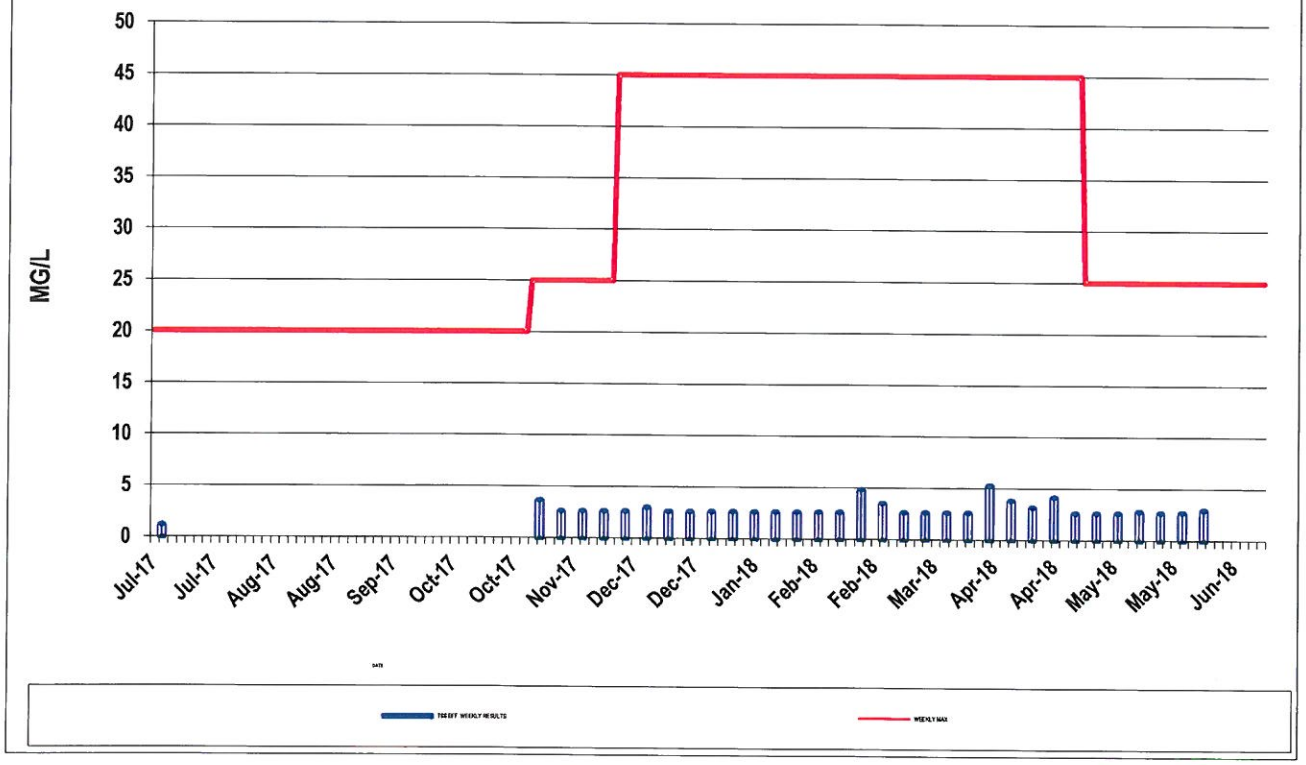


FIGURE 6-14
TSS EFFLUENT DAILY LIMITS
JULY 2017- JUNE 2018

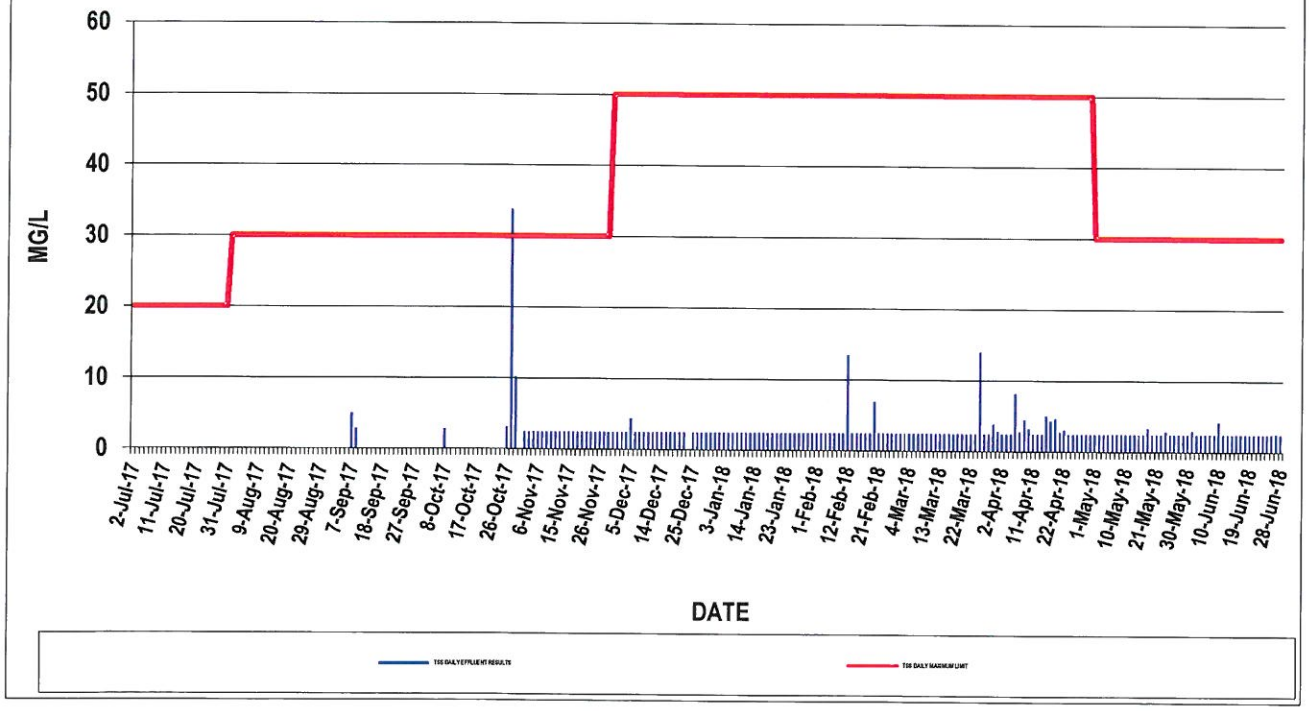


FIGURE 6-15
TSS VS LIMIT MONTHLY AVERAGE POUNDS PER DAY
JULY 2013 - JUNE 2018

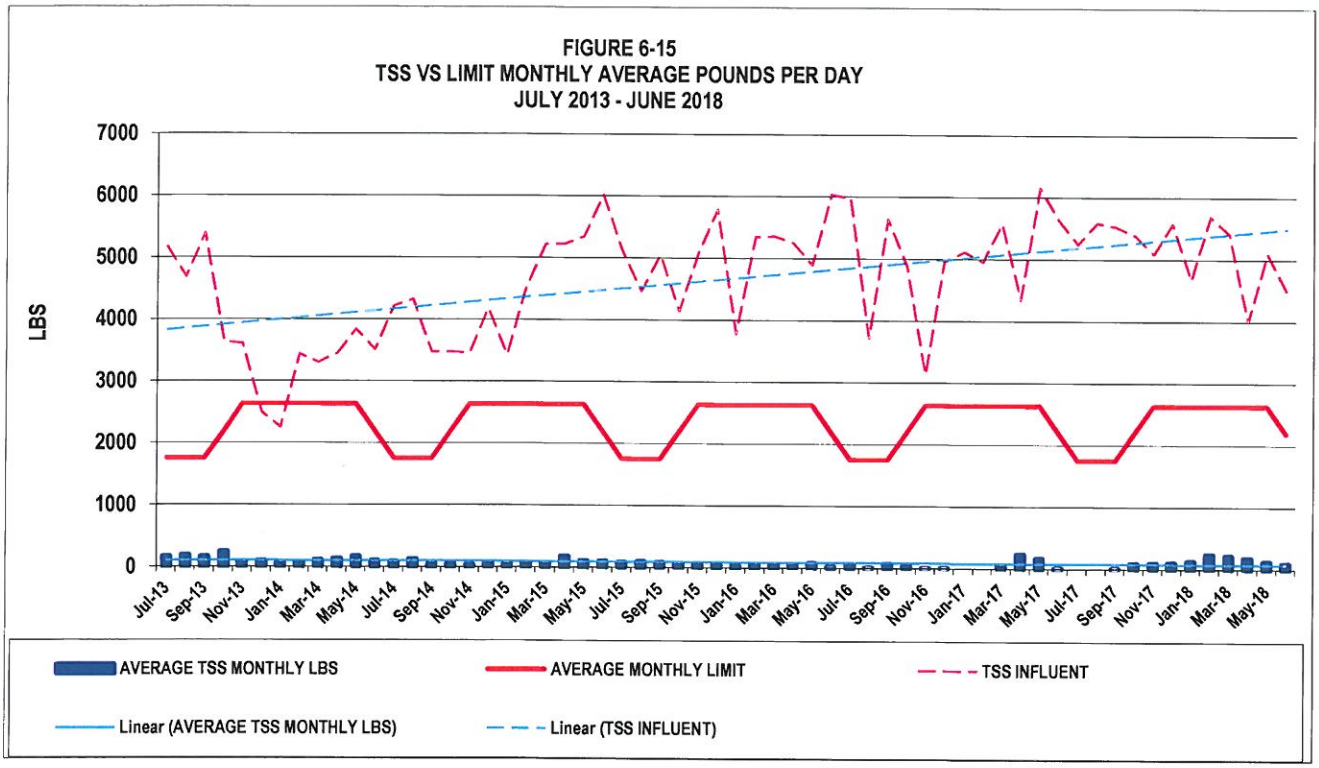


FIGURE 6-16
TSS VS LIMIT DAILY MAXIMUM POUNDS/DAY
JULY 2017 TO JUNE 2018

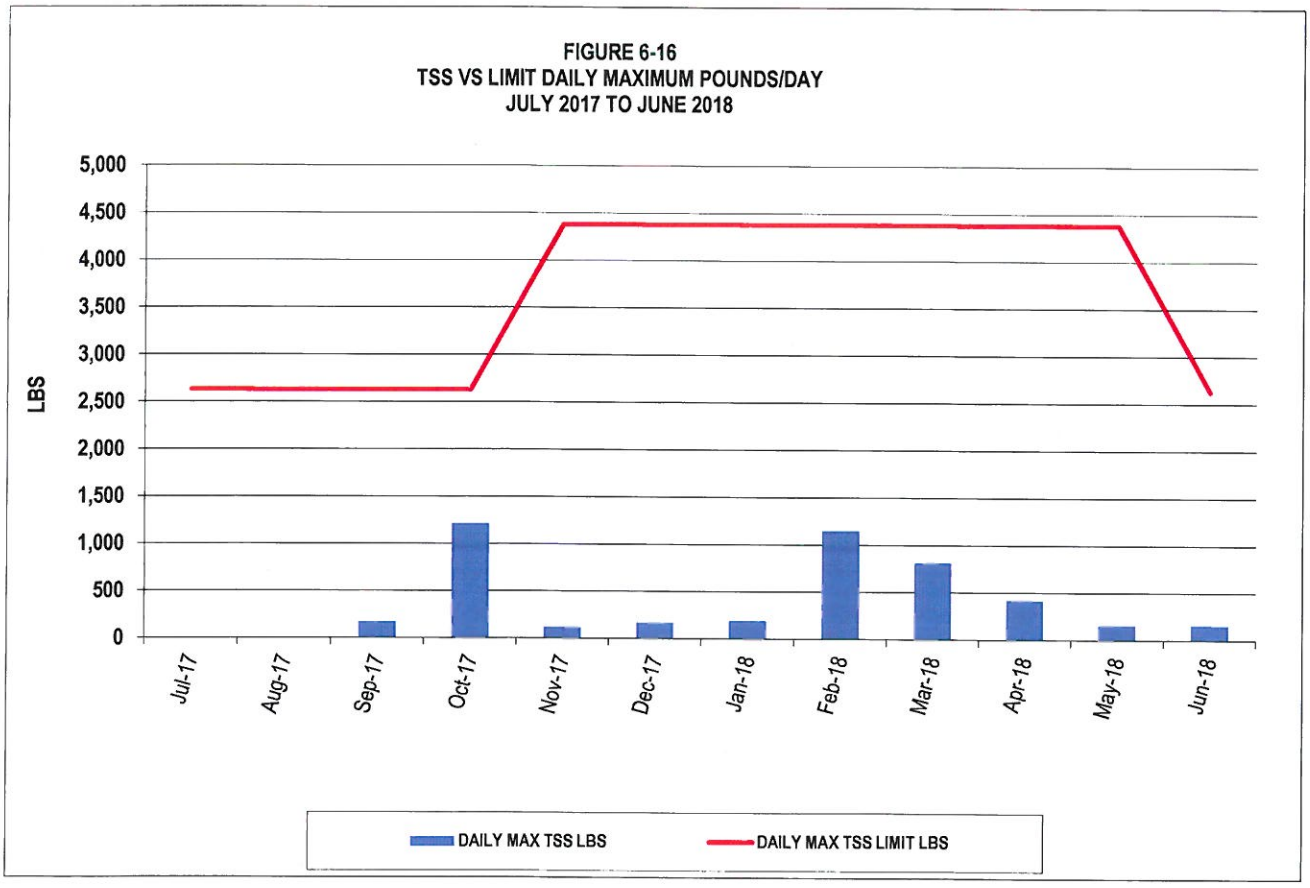


FIGURE 6-17
EFFLUENT AND INFLUENT CADMIUM MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

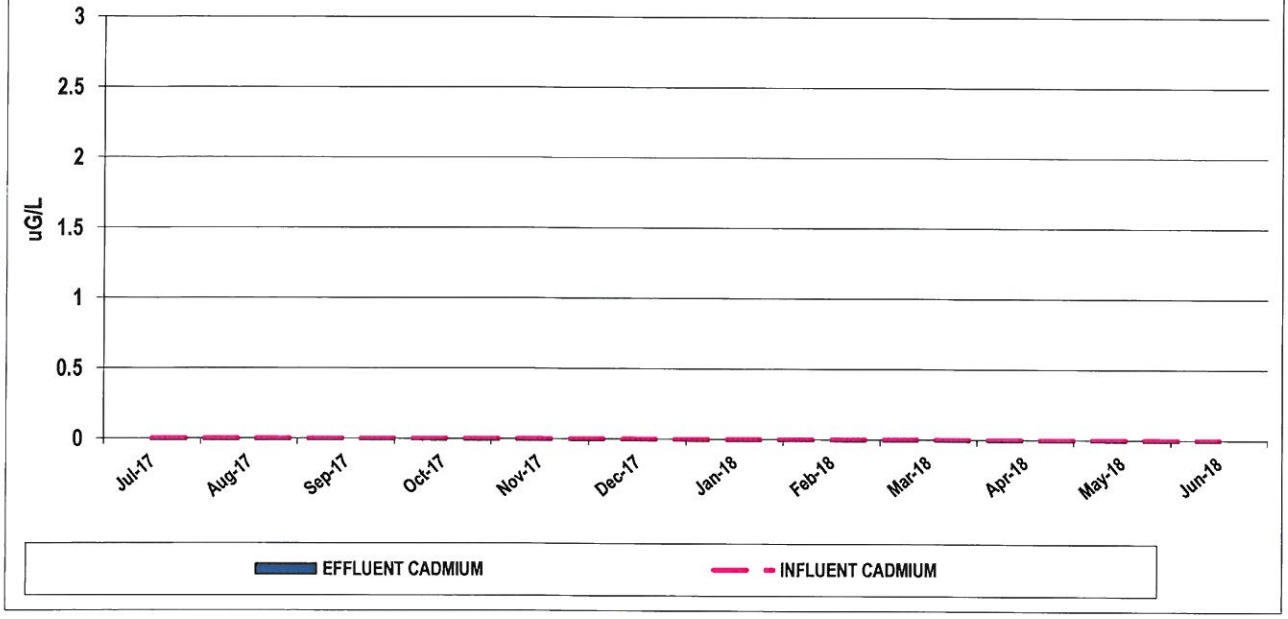


FIGURE 6-18
EFFLUENT & INFLUENT LEAD MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

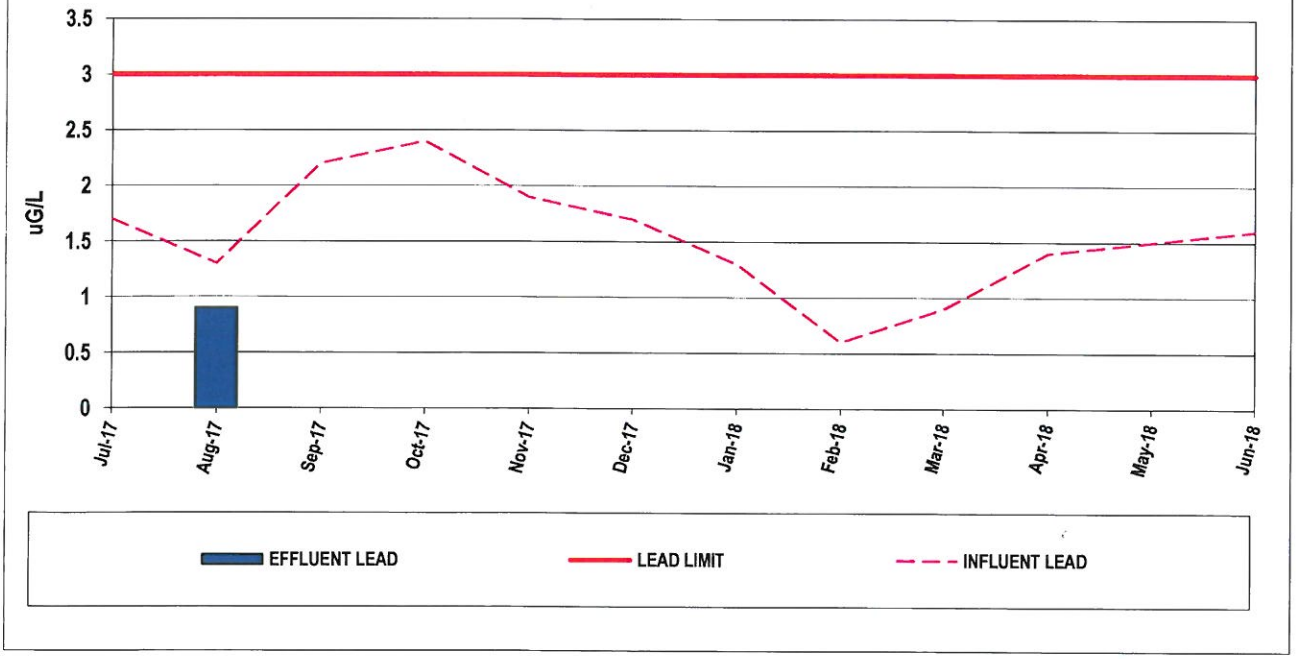


FIGURE 6-19
EFFLUENT & INFLUENT CYANIDE MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

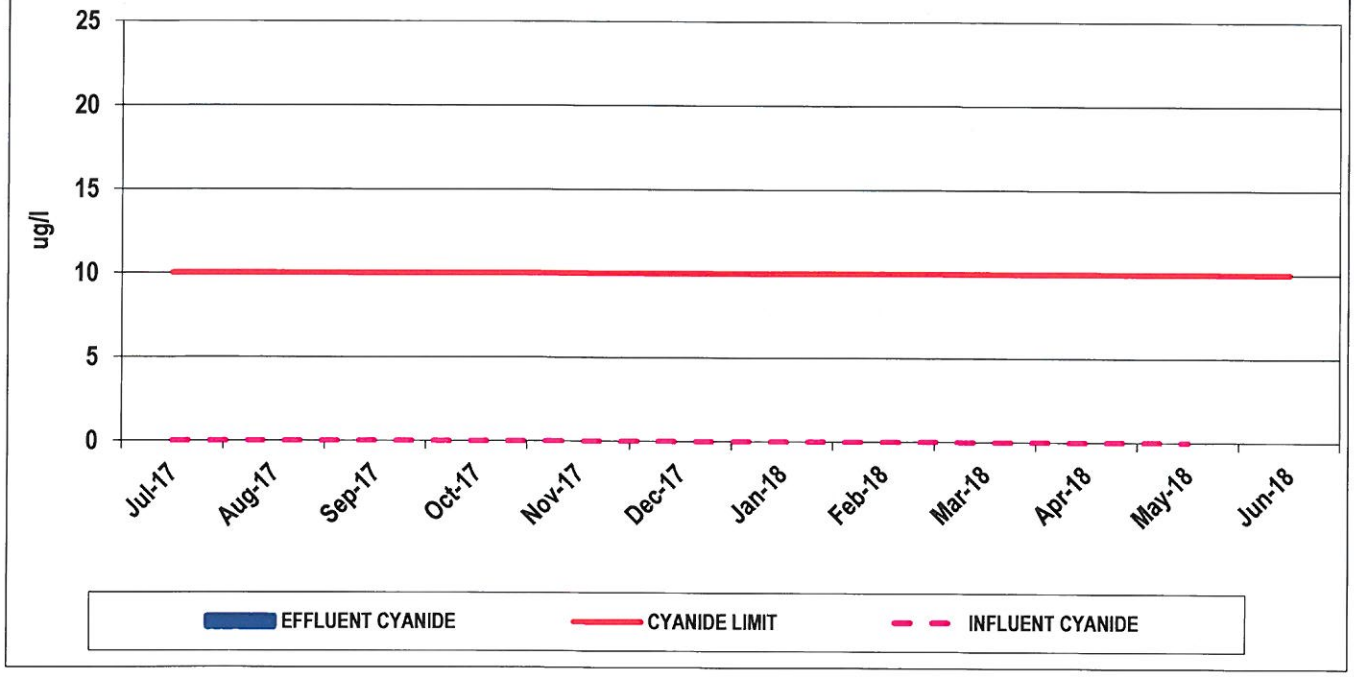


FIGURE 6-20
EFFLUENT & INFLUENT ZINC MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

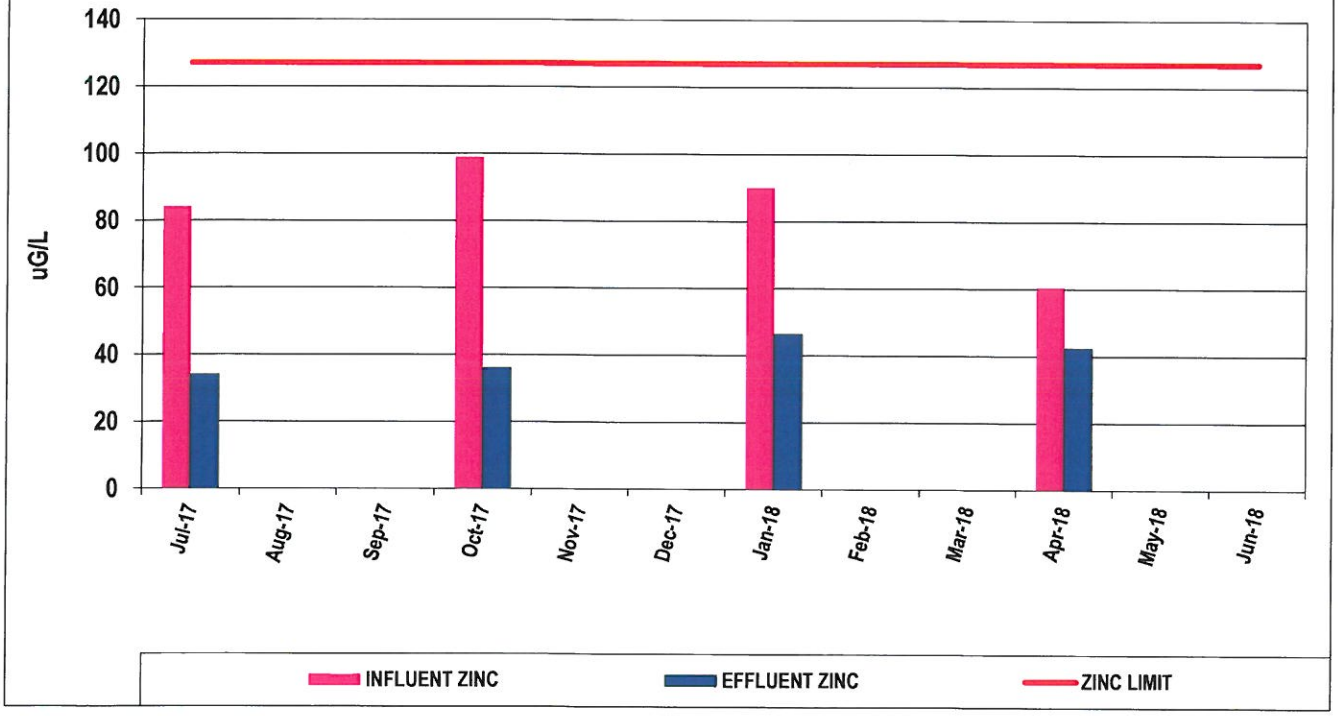


FIGURE 6-21
AVERAGE DAILY FLOWS VS. RAS
JULY 2017 TO JUNE 2018

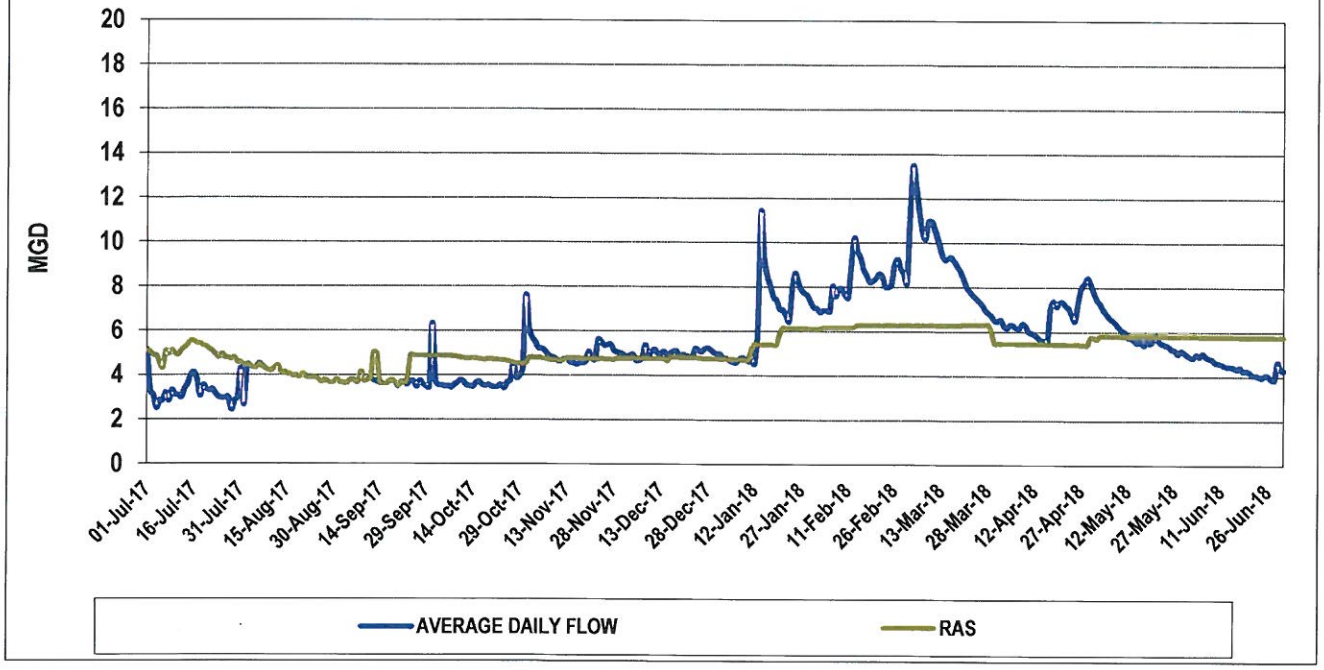


FIGURE 6-22
MLSS RESULTS
JULY 2017 TO JUNE 2018

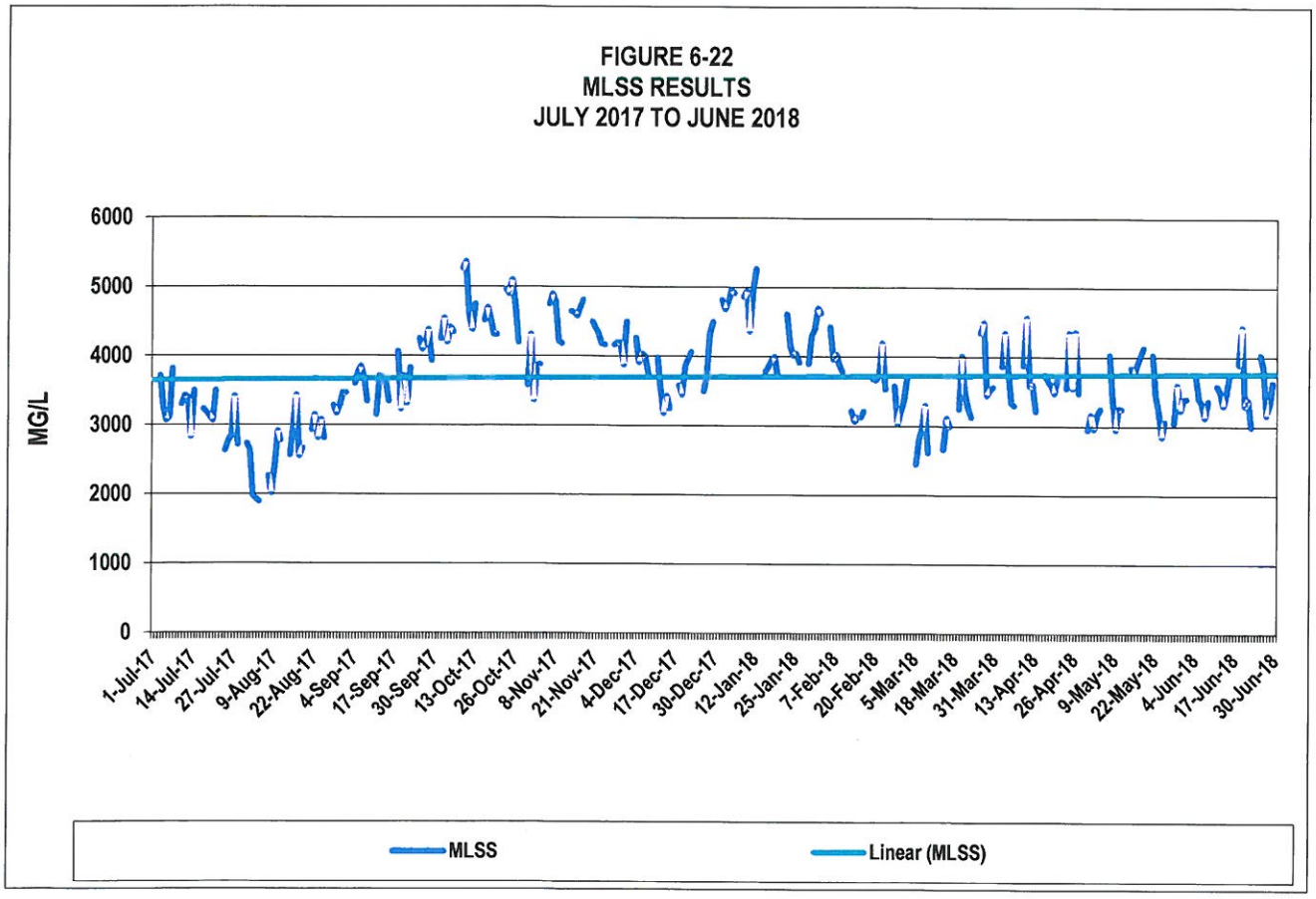


FIGURE 6-23
PRIMARY SLUDGE RESULTS
JULY 2017 TO JUNE 2018

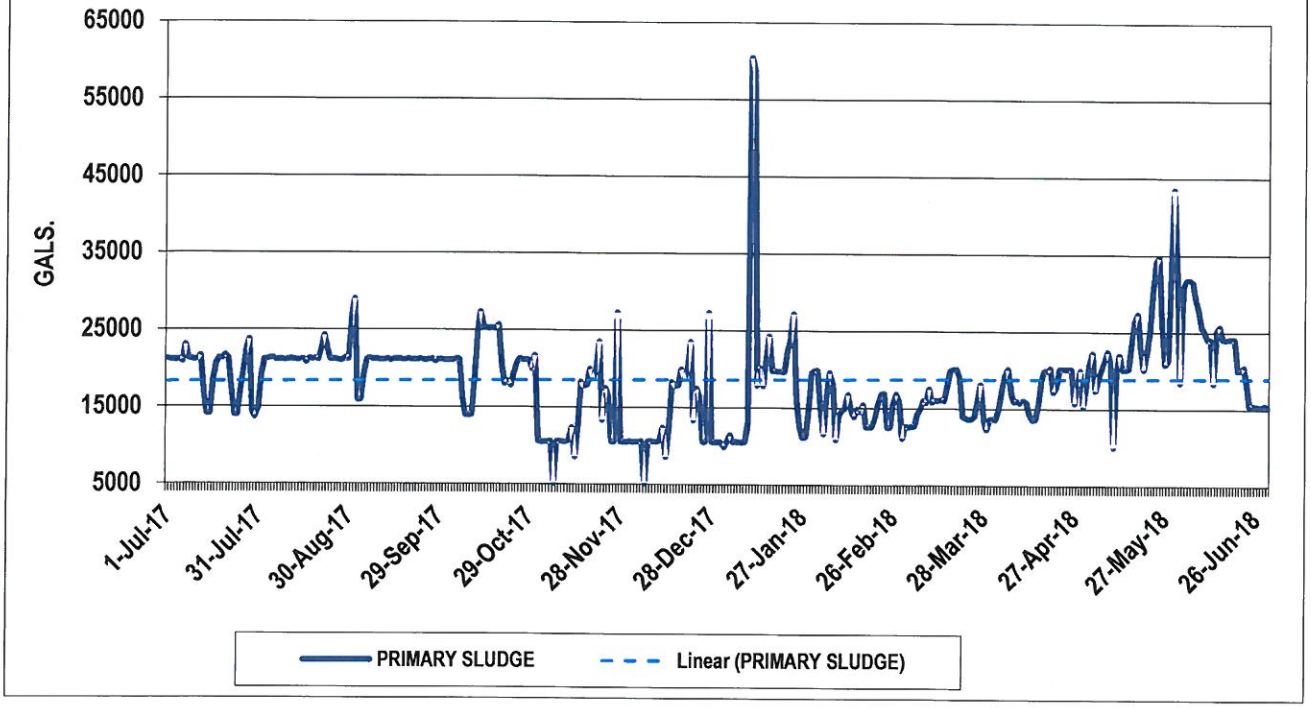


FIGURE 6-24
SECONDARY SLUDGE RESULTS
JULY 2017 TO JUNE 2018

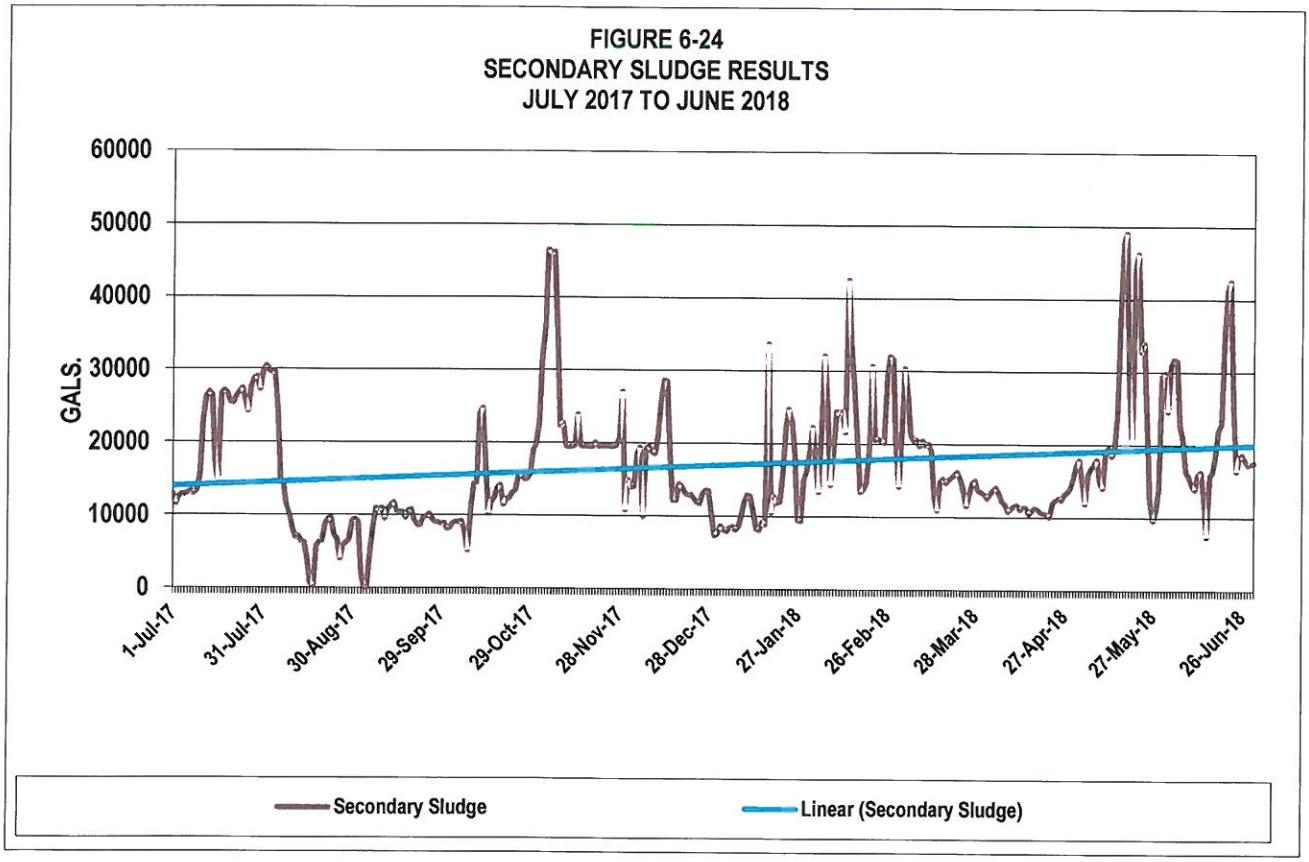


FIGURE 6-25
EFFLUENT AMMONIA AVERAGE MONTHLY
JULY 2013 TO JUNE 2018

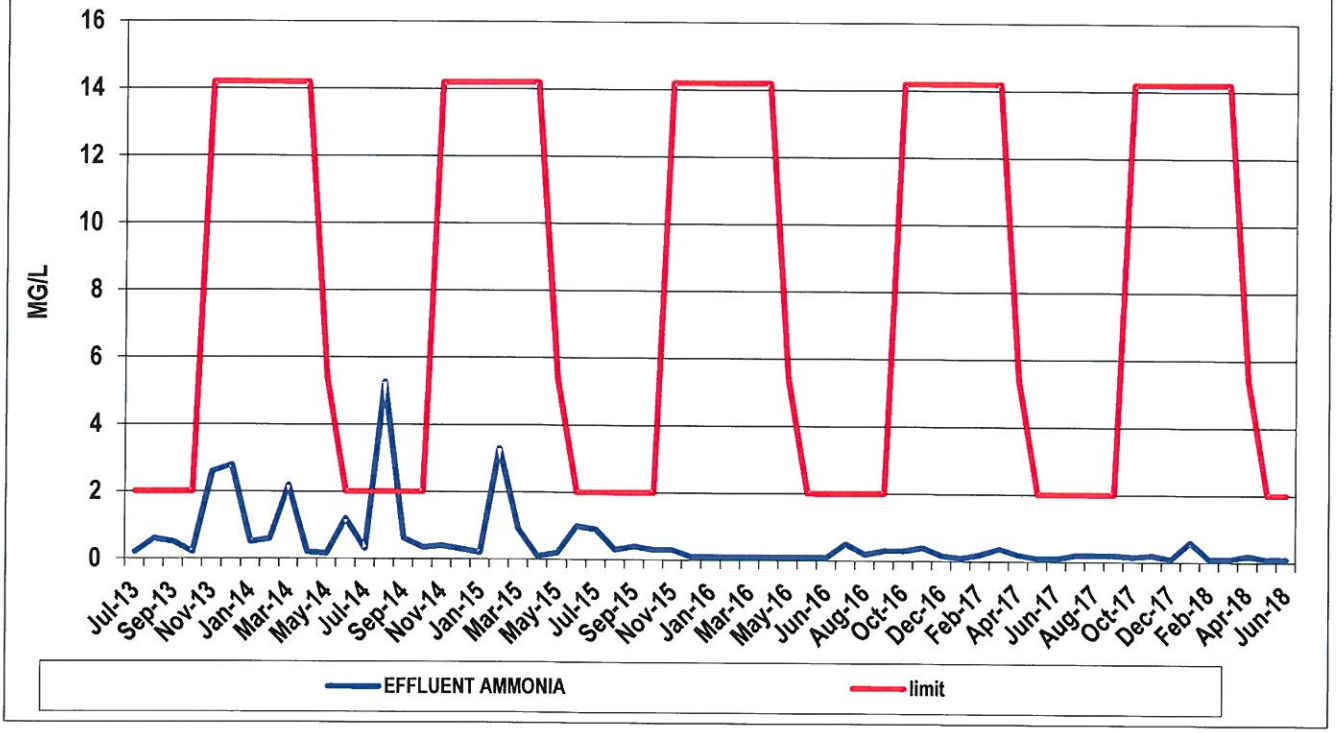


FIGURE 6-26
EFFLUENT TKN MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

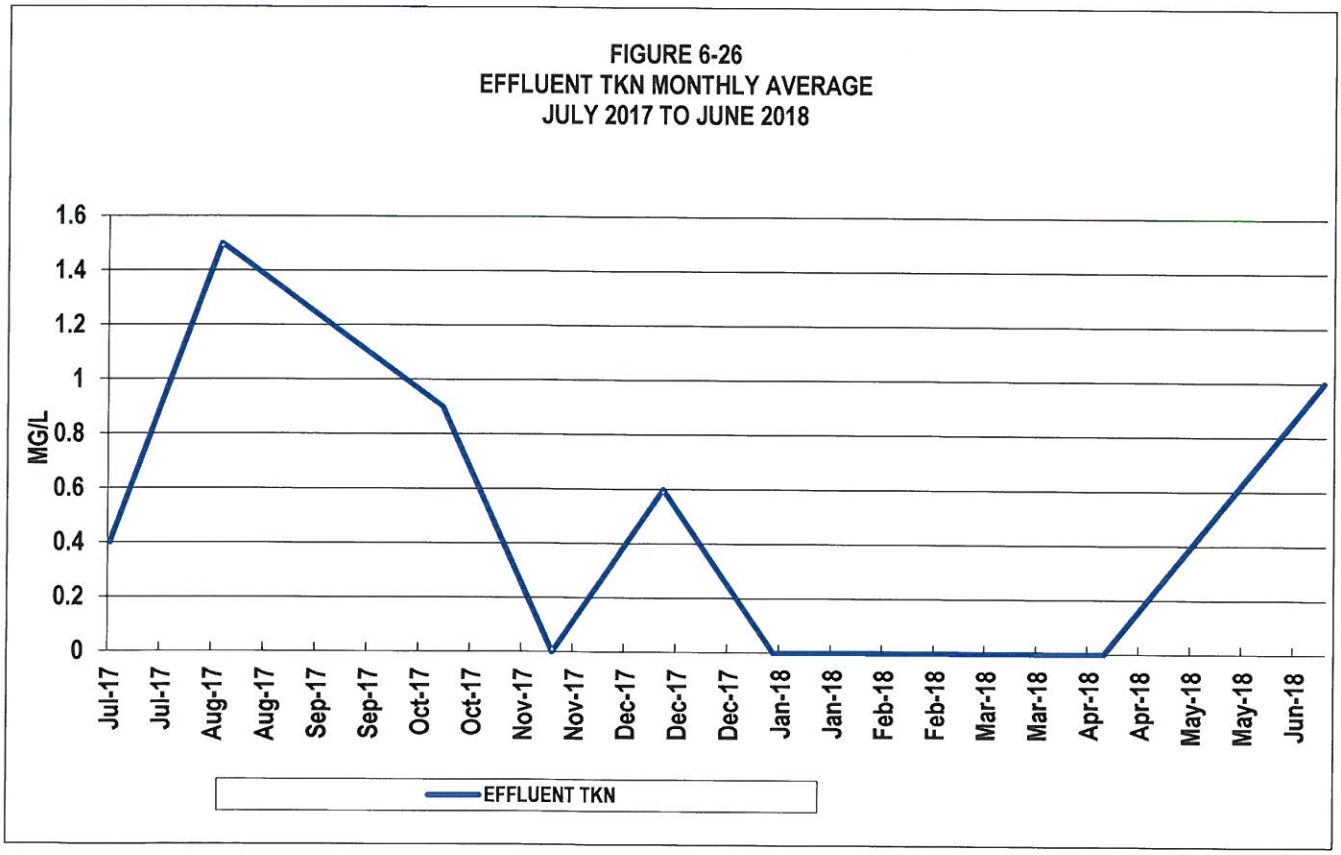


FIGURE 6-27
EFFLUENT NITRATE MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

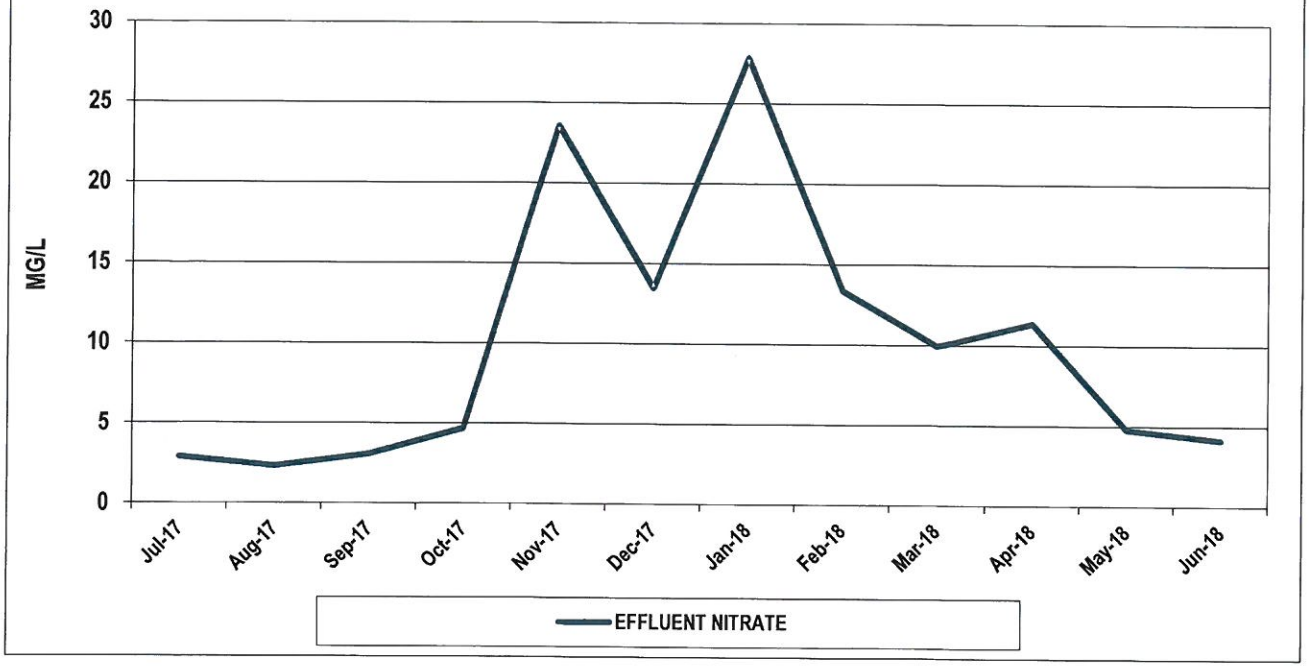


FIGURE 6-28
EFFLUENT NITRITE MONTHLY AVERAGE
JULY 2017 TO JUNE 2018

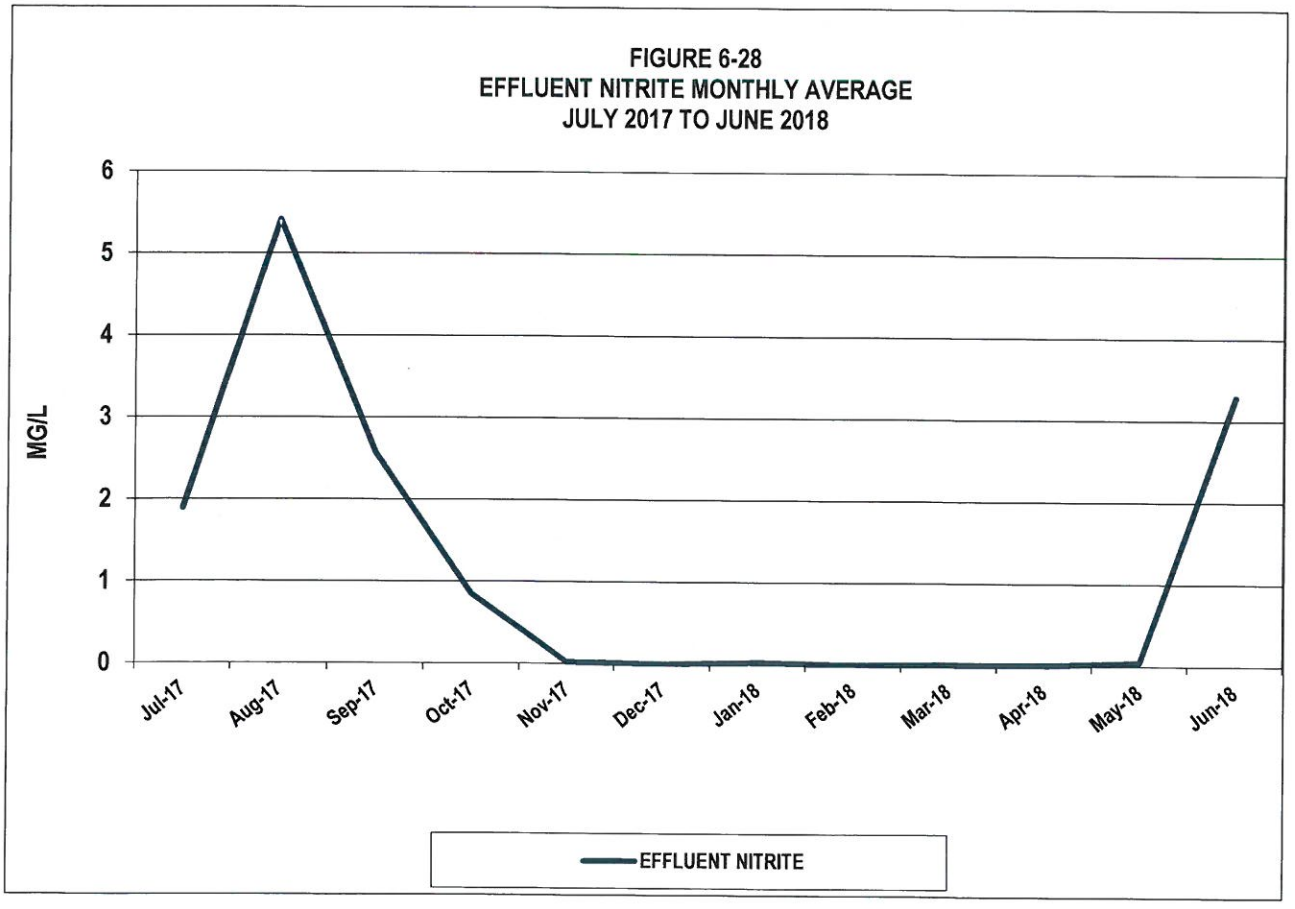


FIGURE 6-29
EFFLUENT NITROGEN MONTHLY AVERAGE
JULY 2013 TO JUNE 2018

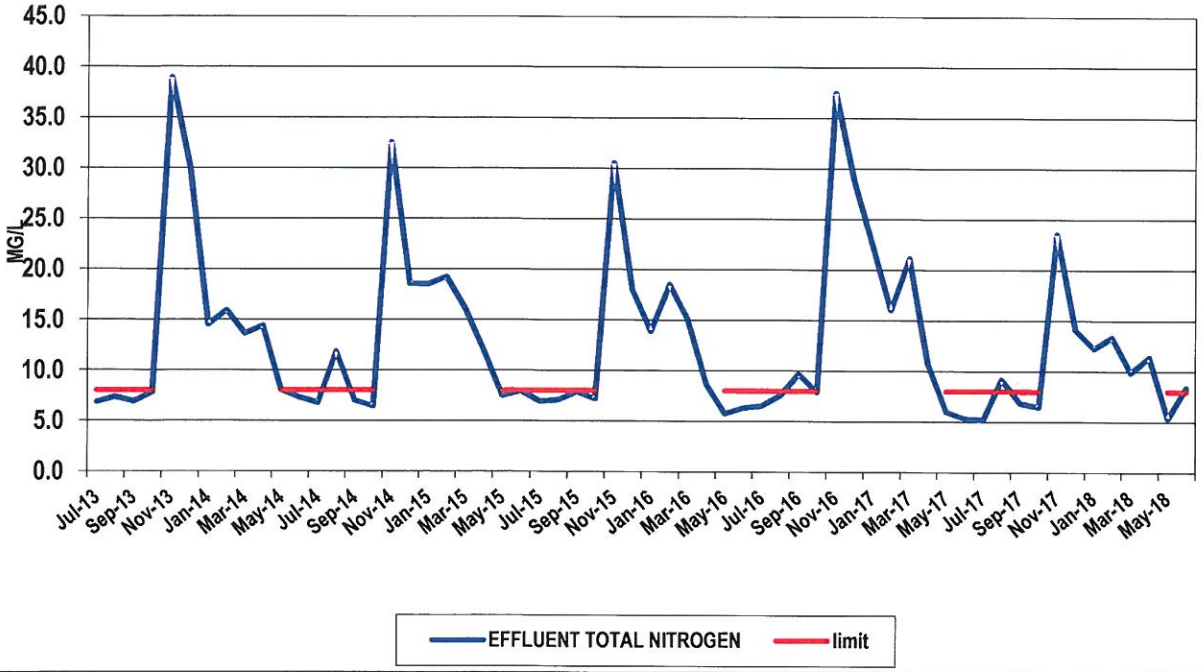


FIGURE 6-30
EFFLUENT PHOSPHOROUS MONTHLY AVERAGE
JULY 2013 TO JUNE 2018

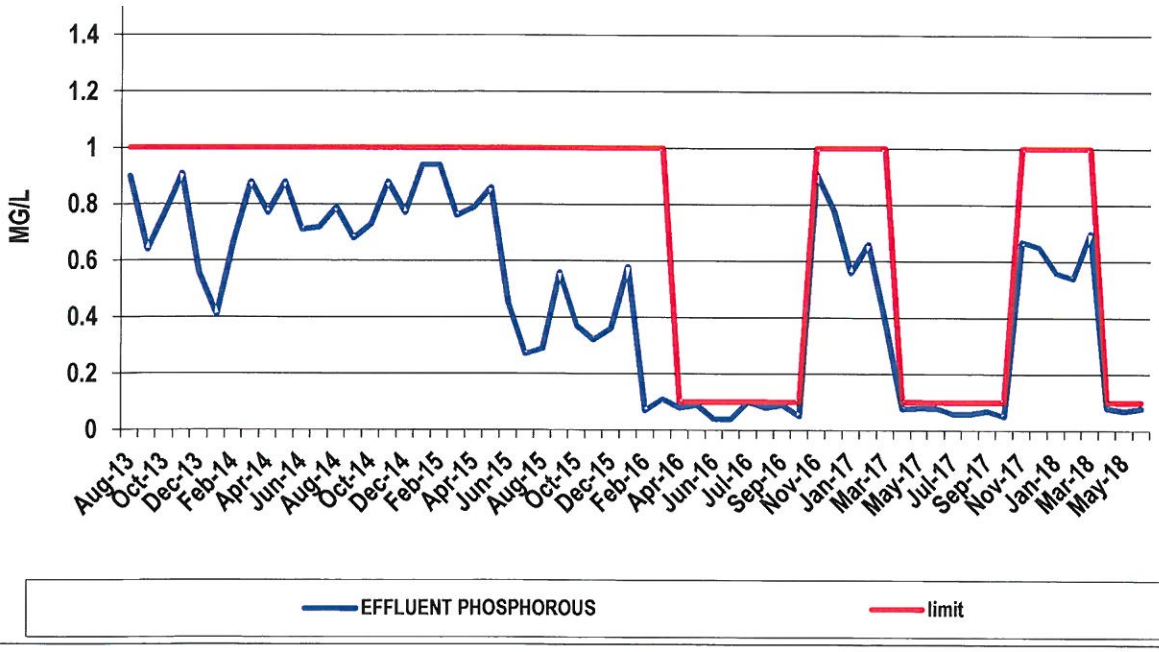


FIGURE 6-31
SLUDGE VOLUME INDEX
JULY 2017 TO JUNE 2018

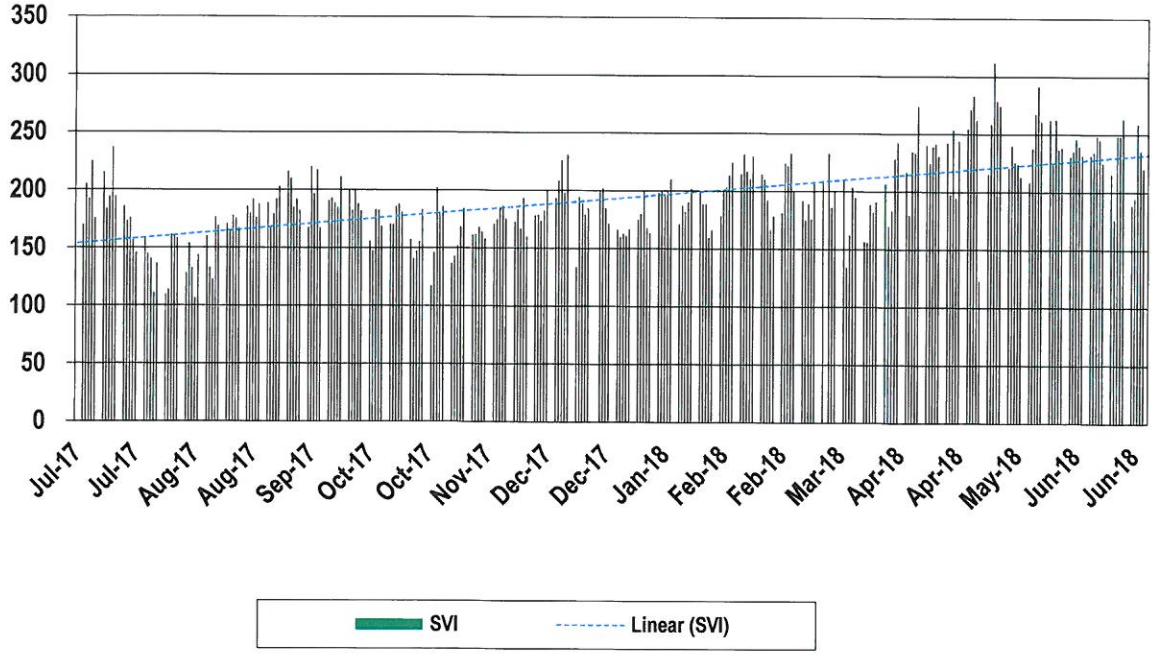
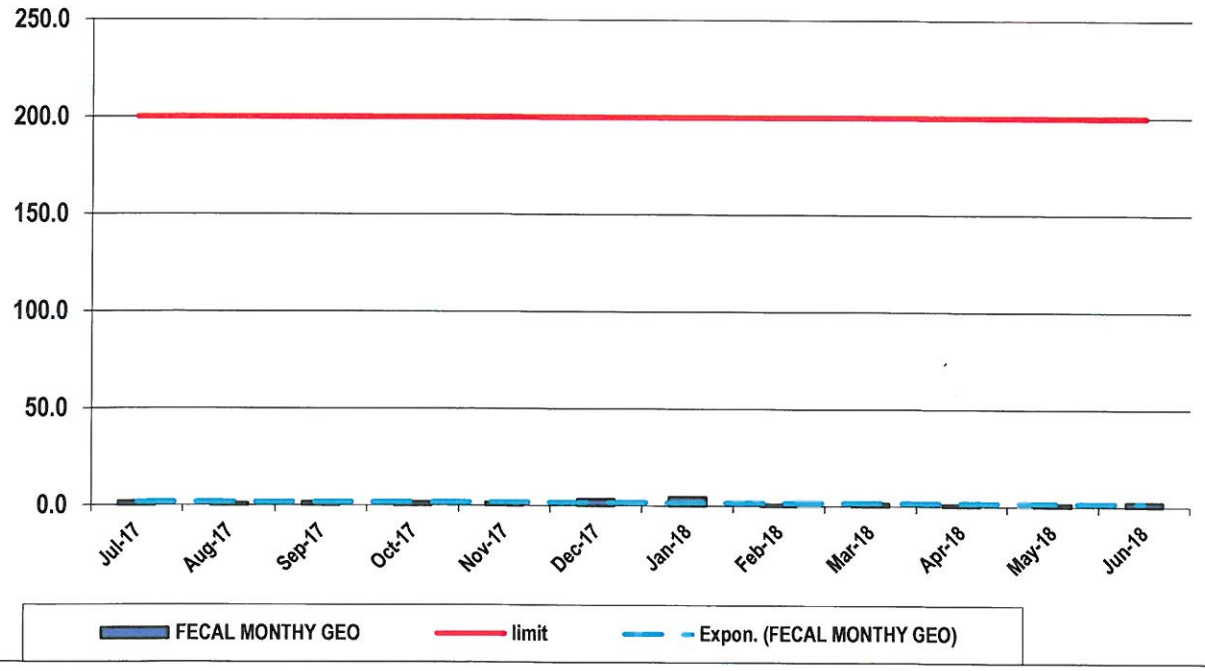


FIGURE 6-32
FECAL MONTHLY GEO MEAN
JULY 2017 TO JUNE 2018



APPENDIX A

PRETREATMENT ANNUAL REPORT SUMMARY

EPA Region 1 Annual Pretreatment Report Summary Sheet

POTW Name:	WEST WARWICK REGIONAL WASTEWATER TREATMENT FACILITY
NPDES Permit #:	RI0100153
Pretreatment Report Period Start Date:	July 1, 2017
Pretreatment Report Period End Date:	June 30, 2018
# of Significant Industrial Users (SIUs):	7
# of SIU's Without Control Mechanisms:	0
# of SIUs not Inspected:	0
# of SIUs not Sampled:	0
# of SIUs in Significant Noncompliance (SNC) with Pretreatment Standards:	0
# of SIUS in SNC with Reporting Requirements:	0
# of SIUs in SNC with Pretreatment Compliance Schedule:	0
# of SIUs in SNC Published in Newspaper:	1
# of SIUs with Compliance Schedules:	0
# of Violation Notices Issued to SIUs:	5
# of Administrative Orders Issued to SIUs:	3
# of Civil Suits Filed Agains SIUs:	0
# of Criminal Suits Filed Against SIUs:	0
# of Categorical Industrial Users (CIUs):	5
# of CIUs in SNC:	0

Penalties

Total Dollar Amount of Penalties Collected	$1,500.00

# of IUs from which Penalties have been collected: 1

Local Limits

Date of Most Recent Technical Evaluation of Local Limits: September 15, 2007 re-evaluated February 16, 2016

Date of Most Recent Adoption of Technically Based Local Limits: February 27, 2008

Pollutant	Limit (mg/l)	MAHL (lb/day)
BOD	2,000	21,893
TSS	2,000	21,893
O&G	100	
Cadmium	0.02	0.137
Chromium	0.70	46.751
Copper	0.80	12.07
Cyanide	0.19	1.09
lead	0.15	1.007
Mercury	0.00	0.487
Nickel	1.00	13.68
Silver	0.24	1.99
Zinc	0.60	8.98
Phenol	1.00	108.70

APPENDIX B

PUBLIC PARTICIPATION

PROVIDENCE Journal

AFFIDAVIT OF PUBLICATION
The Providence Journal
The Providence Sunday Journal

Published by Providence Journal
Providence, Rhode Island 02902
State of Rhode Island
City and County of Providence

On this 6th day of November, 2017 before me, a Notary Public, duly qualified for said County and State, personally appeared Linda Mooney, Director-Publishing Technology, in the office of **THE PROVIDENCE JOURNAL,** newspaper published in the City of Providence by The Providence Journal Company, who, on being duly sworn, states:

TOWN OF WEST WARWICK WASTEWATER TREATMENT FACILITY LIST OF SIGNIFICANT NONCOMPLIANCE The United States Environmental Protection Agency (EPA) Regulation 40CFR403.8(f)(2)(vii) and Sec. 15-15 (g) of the West Warwick Code of Ordinances require the Town of West Warwick, referred to as the "Control Authority".....

copy of which is hereunto annexed, was duly inserted in **THE PROVIDENCE JOURNAL** in its issues of: September 27, 2017.

Linda Mooney

Linda Mooney
Subscribed and sworn to before me this
6th day of November, 2017

Shelli Homick

Notary Public
My Commission expires: 4/10/2021

PROVIDENCE Journal

Ad Order Confirmation

Customer:	JAMES GEREMIA & ASSOCIATE	**Sales Rep:**	Local PJUnassigned
Customer Account:	100095480	**Order Taker:**	Cheryl Rebello
Agency:	JAMES GEREMIA & ASSOCIATE		
Agency/Parent Account:	100095480		
Ordered By:	PAT		
PO Number:			
Ad Order #:	0011108894		
Net Amount:	$1,038.93	**Payment Method:**	Invoice
Amount Due:	**$1,038.93**	**Payment Amount:**	$0.00

Ad Number: 0011108894-01

Color: **Ad Size:** 3 X 5.03 In

Run Dates	Product	Placement/Classification - Position
9/27	Providence Journal	PJ Cls Legals - PJ LG Legal Notices
		Sort Text
		PN NON COMPLIANCE
	PJ Projo.com	PJ Cls Legals - PJ LG Legal Notices
		Sort Text
		PN NON COMPLIANCE

TOWN OF WEST WARWICK
WASTEWATER TREATMENT FACILITY
LIST OF SIGNIFICANT NONCOMPLIANCE

The United States Environmental Protection Agency (EPA) Regulation 40CFR403.8(f)(2)(vii) and Sec. 15-15 (g) of the West Warwick Code of Ordinances require the Town of West Warwick, referred to as the "Control Authority", to publish the names of all industrial users which have been in significant noncompliance of any applicable pretreatment standard over the past twelve months.

Specifically, 40CFR403.8(f)(2)(viii) states:

Comply with the public participation requirements of 40 CFR part 25 in the enforcement of National Pretreatment Standards. These procedures shall include provision for at least annual public notification in a newspaper(s) of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW of Industrial Users which, at any time during the previous 12 months, were in significant noncompliance with applicable Pretreatment requirements. For the purposes of this provision, a Significant Industrial User (or any Industrial User which violates paragraphs (f)(2)(viii)(C), (D), or (H) of this section) is in significant noncompliance if its violation meets one or more of the following criteria:

(A) Chronic violations of wastewater Discharge limits, defined here as those in which 66 percent or more of all of the measurements taken for the same pollutant parameter during a 6-month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement, including instantaneous limits, as defined by 40 CFR 403.3(l);

(B) Technical Review Criteria (TRC) violations, defined here as those in which 33 percent or more of all of the measurements taken for the same pollutant parameter during a 6-month period equal or exceed the product of the numeric Pretreatment Standard or Requirement including instantaneous limits, as defined by 40 CFR 403.3(l) multiplied by the applicable TRC (TRC=1.4 for BOD, TSS fats, oil and grease, and 1.2 for all other pollutants except pH);

(C) Any other violation of a Pretreatment Standard or Requirement as defined by 40 CFR 403.3(l) (daily maximum, long-term average, instantaneous limit, or narrative Standard) that the POTW determines has caused, alone or in combination with other Discharges, Interference or Pass Through (including endangering the health of POTW personnel or the general public);

(D) Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the POTW's exercise of its emergency authority under paragraph (f)(1)(vi)(B) of this section to halt or prevent such a discharge;

(E) Failure to meet, within 90 days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, or attaining final compliance;

(F) Failure to provide, within 45 days after the due date, required reports such as baseline monitoring reports, 90-day compliance reports, periodic self-monitoring reports, and reports on compliance with compliance schedules;

(G) Failure to accurately report noncompliance;

(H) Any other violation or group of violations, which may include a violation of Best Management Practices, which the POTW determines will adversely affect the operation or implementation of the local Pretreatment program.

LIST OF SIGNIFICANT NONCOMPLIANCE

In the reporting period of July 1, 2016 to June 30, 2017 the following industrial users were found to be in Significant Noncompliance as defined above.

AMTROL B

APPENDIX C

DEWATERED SLUDGE CHARACTERISTICS

DE-WATERED SLUDGE CHARACTERISTICS

APPENDIX C
TOWN OF WEST WARWICK
WATER POLLUTION CONTROL FACILITY

Date	Arsenic mg/kg dry	Cadmium mg/kg dry	Chromium mg/kg dry	Copper mg/kg dry	Lead mg/kg dry	Mercury mg/kg dry	Molybdenum mg/kg dry	Nickel mg/kg dry	Selenium mg/kg dry	Zinc mg/kg dry
09/05/13	0.31	0.22	5.7	32	3.8	0.300	0.65	1.4	0.25	62
11/05/13	0.65	0.18	4.1	24	2.5	0.042	0.94	1.3	0.41	64
01/08/14	0.26	0.25	1.8	16	3.3	0.095	0.28	1.3	0.25	50
03/12/14	0.56	0.20	2.7	17	1.4	0.038	0.34	1.1		44
01/05/15	0.50	0.25	3.3	20	1.6	0.040	0.42	1.1	0.25	47
01/13/16	0.83	0.26	4.4	21	2.3	0.033	0.60	1.6	0.55	52
04/07/16	0.41	0.18	5.1	18	1.0	0.095	0.58	1.6	0.25	40
07/06/16	0.94	0.15	6.5	23	1.5	0.063	0.58	1.1	0.55	54
09/20/16	0.42	0.20	10.0	34	1.9	0.062	0.72	1.7	0.68	91
03/22/17	1.00	0.17	7.3	16	1.4	0.060	0.53	1.0	0.25	47
06/20/17	1.50	0.30	8.3	26	2.6	0.100	0.64	1.5	0.28	68
09/17/18	2.35	0.20	12.4	33	2.6	0.038	3.09	1.4	0.25	92
03/23/18	0.61	0.24	4.1	17	1.4	0.033	0.51	1.5	0.25	41
07/02/18	1.59	0.23	9.9	32	2.9	0.053	0.85	2.3	0.28	83
Average	**0.85**	**0.22**	**6.1**	**23**	**2.2**	**0.075**	**0.77**	**1.4**	**0.35**	**60**

Blue indicates less than detection limit

Date	Specific Conductance uMHOS/CM		Nitrate (asN) mg/kg/dry	Ammonia (as N) mg/kg/dry		Total Nitrogen (asN mg/kg/dry	Total Volatile Solids %	Avail. Phos. Acid mg/kg/dry	Soluble Potash mg/l
9/5/13	4,400		0.1	2,800		14,000	71	12,000	900
11/5/13	1,900		0.1	1,400		13,000	83	6,500	600
1/8/14	3,200		0.1	2,200		13,000	84	15,000	1400
3/12/14	3,800		0.1	1,200		11,000	85	9,400	1200
1/5/15	1,800		1	1,500		11,000	81	9,200	1100
1/13/16	1,400		1	2,400		12,000	80	14,000	670
4/7/16	1,400		1	1,300		6,200	77	16,000	710
7/6/16	3,000		0.5	1,200		10,000	24	18,000	630
9/20/16	3,800		0.5	1,200		12,000	79	19,000	520
3/22/17	4,400		0.5	1,200		11,000	72	15,000	810
6/20/17	3,690		0.5	1,600		12,000	73	22,000	780
9/17/18	1,660		0.5	1,680		11,700	79	20,000	690
3/23/18	1,320		25.0	1,250		52,500	81	15,000	1100
7/2/18	2		25.0	875		45,900	78	23,000	650
Average	**2,555**		**4.0**	**1,558**		**16,807**	**75**	**15,293**	**840**