



# **Environmental Protection**

**Department** of

Lawton Chiles Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

February 19, 1997

Mr. John Dickson Wastewater Superintendent City of Auburndale P.O. Box 186 Auburndale, Florida 33823

Re: Pretreatment Program Proposed Local Limits Permit Number FL0021466

Dear Mr. Dickson:

The Department has reviewed the January 8 letter from Jerry Murphy of Chastain Skillman, Inc., regarding your local limits submission. Based on our on February 11 and 17 telephone conversations with Jerry Murphy, we understand that you will replace the "phenols" local limit with one for "chlorinated phenols." This change was discussed because the water quality standard for chlorinated phenols was used in the calculations. Based on this revision, we are preliminarily approving your local limit submission.

Please schedule the revised local limits and the related pretreatment program ordinance revisions for adoption by the City of Auburndale. The adopted local limits and ordinance revision should be submitted to the Department, in accordance with the requirements of Rule 62-625.540, Florida Administrative Code (F.A.C.), as a formal program modification following their adoption. Please note, the revised local limits and ordinance provisions should not become effective until they are formally approved according to the procedures of Rule 62-625.510, F.A.C.

If you have any questions on this correspondence or need clarification on local limit requirements, please contact me or John Coates at (904) 488-4524.

Sincerely,

Robert E. Heilman, P.E. Pretreatment Coordinator

cc: Ed Snipes, P.E., DEP Tampa Al Herndon, P.E., USEPA Region IV Bobby M. Tillman, City of Auburndale

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



# Department of Environmental Protection

### **TELEPHONE CONTACT:**

Dinitiated	□received	Date:_	2/17/87	Time:
Person Cont	acted: John	Dickson	Teleph	one:(941) 965-5549
Title:			Representing:	tu burndala

Summary:
do about the Timing of adopting their local
1: ni 75. They never really answered ou "question" or to whether they would want to wait until their 1997 Gudit is done and they
an 20 what a the want on wait
Their 1997 Gudi? is done and they
have reviewed the rest of their ordinance
John's not in - left Message.
4:20 pm - John called back 2: milt about the linity
about the limits
He cail shat her know she cise
Manaser wanted to any cent and set the
Me said short he knew she cisy Manager wansed so proceed and ges The new limits adapted a soon as possible
Follow Up Required:
Dyes Dno Contact person: John A. Contact
Action Required:
Copy to File: Major <u>Huburndol</u> Minor <u>Program</u> CC: <u>R. Heitman - File</u>
Copy to File: Major <u>Huburnded</u> Minor <u>Program</u> CC: <u>R. Heitman → File</u>
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## Department of Environmental Protection

### **TELEPHONE CONTACT:**

Unitiated	□received	Date:_	2/4/97	Time:	~ 9:30
Person Cont	tacted: Jerry	Murphy	Telepho	one:()	in til.
Title: <u>Sen.</u>	En Cons	/	Representing:	nastain -	Skillman.

Summary:

Callos 8, 1917 Jorg 20 discus The Jon. Auburnd ale Cubaission would Enclosure h, nin 200 would Join chance The Mra mety n Fro " shenbls chloringred phenale 0.00 The l'mir. Cine use ni The erro. d: sustal 16 limi? Viry chlority Since tur Jable Their 202 The changes. agree w:26 she Ordinance Fnd 2 ìn  $\mathcal{N}$ <u>ag14</u> 1ht The ordinance in The re-Jorry Sain sond the 401 This Maring £ 1 Follow Up Required: Contact person: John Costa Aves □no Action Required: Ceriew Fex Minor <u>Prog</u> Auburnda Copy to File: Major +£!/~ CC:



# Department of Environmental Protection

Lawton Chiles Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

### FACSIMILE TRANSMITTAL SHEET

Т	O: Jerry Murphy	
LOCATION	N: Chastain-Skillman, Inc.	
FAX NUMBE	R: (813) 647-3806 (941)	
VOICE NUMBE		
DAT	E. February 11, 1997) Jerry Inied 2.	
(	send a few days	
	John Coates Didn't realize in didn't 50	1. 11
FROM:	John Coates	24 1005 1.1
LOCATION:	Domestic Wastewater Section - Tallahassee	
FAX NUMBER:	(904) 921-6385	
VOICE NUMBER:	(904) 488-4524	
NUMBER OF PAGES:	2 (including cover sheet)	

Comments: Jerry, Please see written note of next page... Looks like we should drop the 0.013 mg/L background concentration since it applies to "phenols" instead of "*chlorinated* phenols." If we do so, looks like the local limit should be 0.045 mg/L. Will this work for yourself and Auburndale? Please call. Thanks. John Coates

If there are any problems with this transmittal, please call the person listed above.

Local Limit Pro	oject Sumn	nary Repo	ort				Proj	<u>ect No:</u>	21
Tuesday, February 1	1, 1997				Representative total	WWF flow =	<u>Qt:</u>	1.4	MGD
PROGRAM NAME:	Auburndale, C	ity of			Industrial user flow o	ontribution =	<u>Qi:</u>	0.14	MGD
WWF NAME:	Auburndale S	TP			Calculated nonindus	strial flow =	<u>Qni:</u>	1.26	MGD
					Residuals disposal f	low =	<u>Qs:</u>	0.00783156	MGD
	-				Percent solids in dis	posal residuals =	<u>%:</u>	4.00%	
		otal Allowable rks Loading Cri	teria		Representative	Safety	Allow	uph a	Uniform
	Passthrough	Interference	Residuals	Limiting	Nonindustrial	Factor	Indust		Local
POLLUTANT NAME	TAHL (lb./d)	TAHL (lb./d)	TAHL (lb./d)	TAHL (lb./d)	Load (lb./d)	(lb./d)	Load (1b	<u>./d) Limit</u>	t (mg/L)
PHENOLS	244,1345	46,7040	-	46.7040	0.1366	0.0000	46.	5674	39.88300
					******				
			Basis: interferer	nce based on NIII	RIFICATION and EPA_L	ocal Limit Guid	ance (EP	A 833/B-87-202	)-phenol
PHENOLS, CHLORINATE	0.0531	B 0.0000	••••••	0.0531	RIFICATION and EPA L 0.0000 FACE WATER, C-111 FR	0.0000	0.	.0531	0.04545
	0.0531	8 0.0000 B	Basis: pass throu	0.0531 Jgh based on str	0.0000 FACE WATER, C-111 FR	0.0000 ESH and Rule 62	0. -302,530	.0531 , F.A.C. (C-II	0.04545 1 <b>A</b> resh)

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San. 8, 1997 Proposed Limins

		Daily M	laximum	
Pollutant	Background Concentration (mg/l)	Past Limit (mg/l)	Proposed Limit (mg/l)	0. k.
Antimony	0.025	None	40.00	*
Arsenic	0.0005	0.01	0.27	*
Beryllium	0	None	0.0025	× .
Boron	0.34	None	4.44	ح
Cadmium	0.0005	0.05	0.018	×
Chromium - Total	0.02	2.00	0.20 3.3	33 حر
Cobalt		None	0.48	-
Copper	0.08	2.00	0.280	+
Cyanide	0.005	0.036	0.073	$\succ$
Fluoride	0.405	None	7.25	٦
Lead	0.0105	2.00	0.011	× num
Manganese		None	3.0	oval:
Mercury*	0.0001	0.014	0.0005	$\times$
Nickel	0.01	0.6	1.75	
Oils & Grease		100	100	×
Phenols	0,013	4.0	4.0	
Silver*		.004	0.005	
Toxic Organics				i,
Benzene			0.13	`
Tetrachloroethylene	ر		0.53	-
Trichloroethylene			0.71	<b>\</b>
Toluene			1.36 @	\     \
Vinyl Chloride			0.0004	<b>~</b> X
Phenol			0.013	
Zinc	0.145	1.00	1.50	-
BOD		2520	975.00	
TSS		520	290.00	
Total Dissolved Solids	400	None	1,405.00	
Total Nitrogen		80	40.00	I

\* NOTE: These limits are based on the lowest detection level for these contaminants.

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02-11-1997 10:07AM FROM	TO 19049216385 P.01
engineers • scientists • surveyors	
, Chastain	
skillman	Reply to:
FAX T	RANSMISSION
DATE 2/11/97	CSI PROJECT NO. 1880.01
SENT TO:	·
Name John Con	<i>TES</i>
Company <u>FDEP</u>	
FAX No. <u>904-921-</u> No. of Sheets (including co	
SENT FROM:	
	A
Name <u>2. J. Ma</u> Company CHASTAIN-SK	
Phone No. (813)646-1402	
	(Civil/Environmental/Structural)
	(Surveying and Accounting)
REFERENCE:	
150 - dtd & Twi07 - Po A.	wendale DAS TREATMENT PLOGRAM
EIR- GIO DUMUTT A.C. FO	CALIFORNY PRETRUGATION ( 1 × 2092 NN)
MESSAGE:	
artic is Copy of ende	une 3 of Subject Letter
	lox 5710, Lakeland, Florida 33807-5710 813-646-1402 30x 1281, Sebring Florida 33870-1281 813/382-4160 uite 101, Tampa, Florida 33610-7349 813/621-9229
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#### 02-11-1997 10:07AM

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#### 19049216385 P.02

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#### Calculations of Pretreatment Limits for Phenois

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						<u>~∔</u>
BACI	KGROUND INFO	RMATION				•
	tant of Concern		Phenois	·		i
	Background Con		0,013		Previous	•
	strial Contribution:		10%			<u> </u>
	Design Capacity	<u>:</u>		MGO		
	satic Portion			MGD		<u> </u>
!QGI	Domestic Loadin	g of Polutaric	0.1366092	pounds	per day	<u> </u>
CAL	ULATION OF H	AMANDUCE				
	DING FOR:		Phenois	·		<u> </u>
		• • • • • • • • • • • • • • • • • • • •				<u> </u>
ישנאו נ	ition of Activated	Studge Proce		:		
						:
Inhibi	ting Concentratio	n:	4	'mg/l		<u> </u>
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Influe	int Limiting Mass	Loading:	46.704	pounds	per day	
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	of Lake Lena Run	1	0	imgd		_i
Max.	Q of Effluent		0.65	imgd		
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	ction of Pollutant				n Plant Ana	<u>yses</u>
	mum influent Con		0.00454545			<u> </u>
	ent Mass Loading		0.05307273	pounds	per day	·
3 Max.	Allowable Mass I	Loading to Pro	nect Emuant S	prayneio		
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	mum Effluent Cor			.mg/l	n Flant Ana	
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	FAX TRANS	MISSION		
DATE: Februar	y 17, 1997	CSI PRO	OJECT NO. 188	0.01
SENT TO:				•
Name	Mr. John Coates			
Company	FDEP			
FAX No.	(904) 921-6385			
No. of Sheet	s (including cover): 1			
SENT FROM:	Auglet			
Name	R Jerry Murphy			
Company	CHASTAIN-SKILLMAN,	INC.		
Phone No.	(941)646-1402			
FAX No.	(941)647-3806 (Civil/En	vironmental/Struc	tural)	
FAX No.	<b>(941)646-8023 (Surveyi</b> ı	ng and Accounting	g)	
REFERENCE:				
City of Auburnd from Mr. John C	ale Pretreatment Program	& FDEP Fax Date	ed February 11,	1997,

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Lakeland Office • 4705 Old Highway 37, P.O. Box 5710, Lakeland, Florida 33807-5710 613/646-1402 Sebring Office • 2702 Fairmount Drive, P.O. Box 1281, Sebring, Florida 33870 813/382-4160 Tampa Office • 8402 Laurel Fair Circle, Suite 105, Tampa, Florida 33610-7313 813/621-9229

#### DEPARTMENT OF ENVIRONMENTAL PROTECTION PRETREATMENT PROGRAM CHAPTER 62-625, F.A.C.

#### Program Local Limits Development Checklist

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	Name of Program <u>Auburndalo</u> Date of Submission <u>3/24/91</u> Permit Number <u>FL00 2141(</u>		
		Satisfactory Y/N √=Y	Document Reference (Page No.)
١.	Industrial User Information		
	<ul> <li>A. List of known constituents of concern in industrial user discharges</li> <li>B. Identification of individual industrial user flow rates, if required for the chosen allowable industrial headworks loading allocation method</li> </ul>	Na	Jan 8, 1997
II.	Wastewater Treatment Facility (WWF) Information		
	<ul> <li>A. Description of the covered wastewater treatment facilities.</li> <li>B. Applicable WWF effluent limitations for pass through to waters of the State.</li> <li>C. Other applicable WWF effluent limitations: <u>Recedent Constant</u></li> <li>D. Applicable WWF Interference criteria</li> <li>E. Applicable WWF residual disposal requirements</li> <li>F. Representative WWF flow rates for nonindustrial &amp; industrial contributions, total plant flow, and residuals generation</li> <li>G. Representative solids fraction for residuals disposal</li> <li>H. Nonindustrial (uncontrollable) loading analytical data</li> <li>I. WWF influent and effluent analytical data</li> <li>J. WWF unit operation analytical data</li> <li>K. Calculated/assumed treatment process removal efficiencies</li> </ul>		н н н н н н н н н н н н н н
111.	<ul> <li>Local Limit Documentation</li> <li>A. List of proposed local limit parameters and concentrations</li> <li>B. List of existing local limit parameters and concentrations</li> <li>C. Justification for removing local limits, if appropriate</li> <li>D. Documentation of industrial loading allocation method</li> <li>E. Documentation of basis for safety and growth factors</li> <li>F. Documentation of whether the local limits have been adopted in an ordinance or by resolution.</li> </ul>	No 1 Necessary Leni Furn	<u>л</u> <u>п</u> (, (, З/24/97

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Notes: () The Local limit submission on Jonwary 2, 1997 is based on the calculations and corrections to submissions dated October 22, 1996. The prestationent program Modification was originally submitted to EPA, Region TH priver 2. delegation on May 1, 1995. Ordinance 887 was passed on March 13, 1997 and contains the preliminarily approved local limits in the January 8, 1997 submission.

Based upon this review, I have found the program local limits evaluation to be:

( $\chi$ ) Adequate () Inadequate Date:  $\frac{y/23/9}{23/9}$  Reviewed by: <u>John Contract</u>

Note:

This review is a preliminary determination and is not necessarily the final determination by the Department.





January 8, 1997

Mr. Robert Heilmann, P.E. Pretreatment Coordinator Florida Department of Environmental Protection Twin Towers Office Building 2600 Blair Stone Road Tallahassee, FL 32399-2400

Re: City of Auburndale Pretreatment Program Permit Number FL0021486 CSI File No. 1880.01 Reply to: Lakeland (941) 646-1402 FAX (941) 647-3806



.IAN 10 1997

Dept. of Environmental Protection Domestic Weste Section

Dear Mr. Heilmann:

We have reviewed your comments in your letter of November 26, 1996, relative to the referenced program. We have undertaken to modify the daily maximum limits and ordinance consistent with your comments (see enclosure one and two).

In addition, we have re-evaluated the technical justification for establishing the local limit for phenol. In doing so, it was noted that calculation sheet attached with our initial July 17 submission that we used the wrong Class III fresh water standard in calculating the program limit (i.e., 0.1 rather than standard, .001 mg/l). Implementing this correction provides a program limit for phenol of 0.013 mg/l or background level. A corrected copy of the original calculation sheet is attached as enclosure three.

We appreciate your noting these changes. Should any clarification be needed, please contact me at your convenience.

Sincerely,

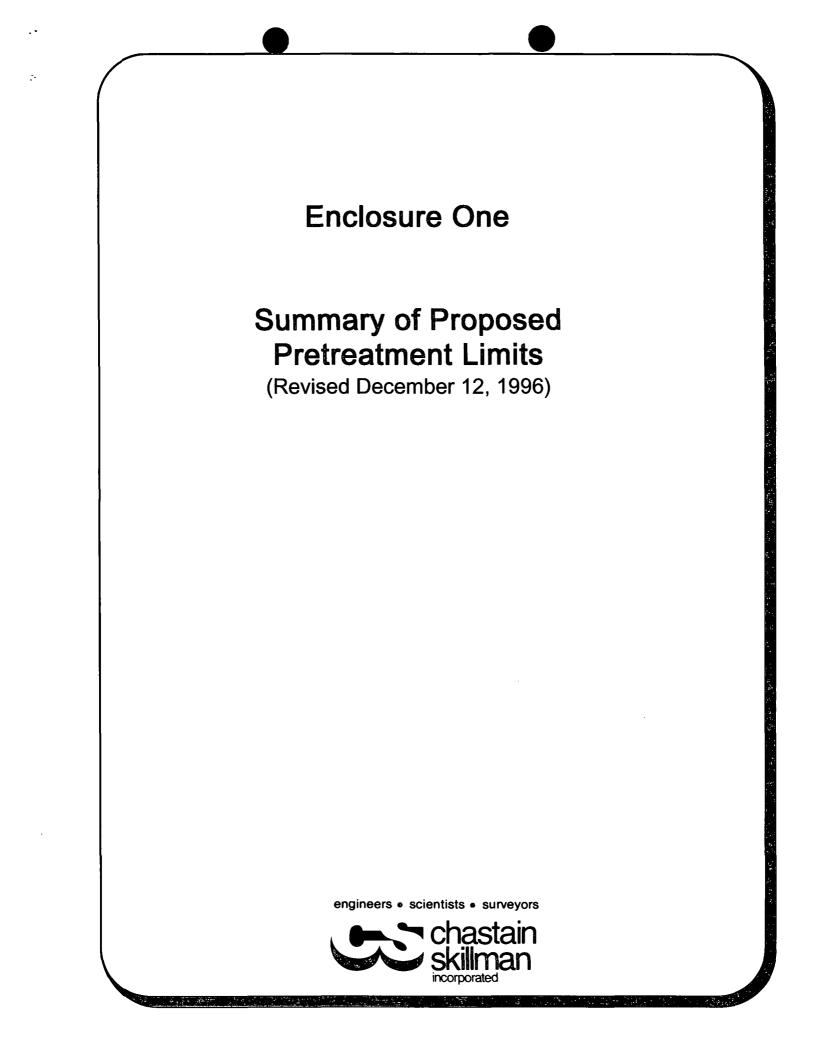
CHASTAIN-SKILLMAN, INC.

111 R. Jerry Murphy, P.E. PhD.

Senior Engineering Consultant

PAB:mc

xc: John Dickson, City of Auburndale Bobby Tillman, City of Auburndale Al Herndon, P.E., USEPA Region IV Ed Snipes, P.E., DEP - Tampa



Summary of Proposed Pretreatments Limits Auburndale Wastewater Treatment Plants					
		Daily Maximum			
Pollutant	Background Concentration (mg/l)	Past Limit (mg/l)	Proposed Limit (mg/l)		
Antimony	0.025	None	40.00		
Arsenic	0.0005	0.01	0.27		
Beryllium	0	None	0.0025		
Boron	0.34	None	4.44		
Cadmium	0.0005	0.05	0.018		
Chromium - Total	0.02	2.00	0.20		
Cobalt		None	0.48		
Copper	0.08	2.00	0.280		
Cyanide	0.005	0.036	0.073		
Fluoride	0.405	None	7.25		
Lead	0.0105	2.00	0.011		
Manganese		None	3.0		
Mercury*	0.0001	0.014	0.0005		
Nickel	0.01	0.6	1.75		
Oils & Grease		100	100		
Phenols	0.013	4.0	4.0		
Silver*		.004	0.005		
Toxic Organics					
Benzene			0.13		
Tetrachloroethylene			0.53		
Trichloroethylene			0.71		
Toluene			1.36		
Vinyl Chloride			0.0004		
Phenol			0.013		
Zinc	0.145	1.00	1.50		
BOD <sub>5</sub>		2520	975.00		
TSS		520	290.00		
Total Dissolved Solids	400	None	1,405.00		
Total Nitrogen		80	40.00		

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\* NOTE: These limits are based on the lowest detection level for these contaminants.

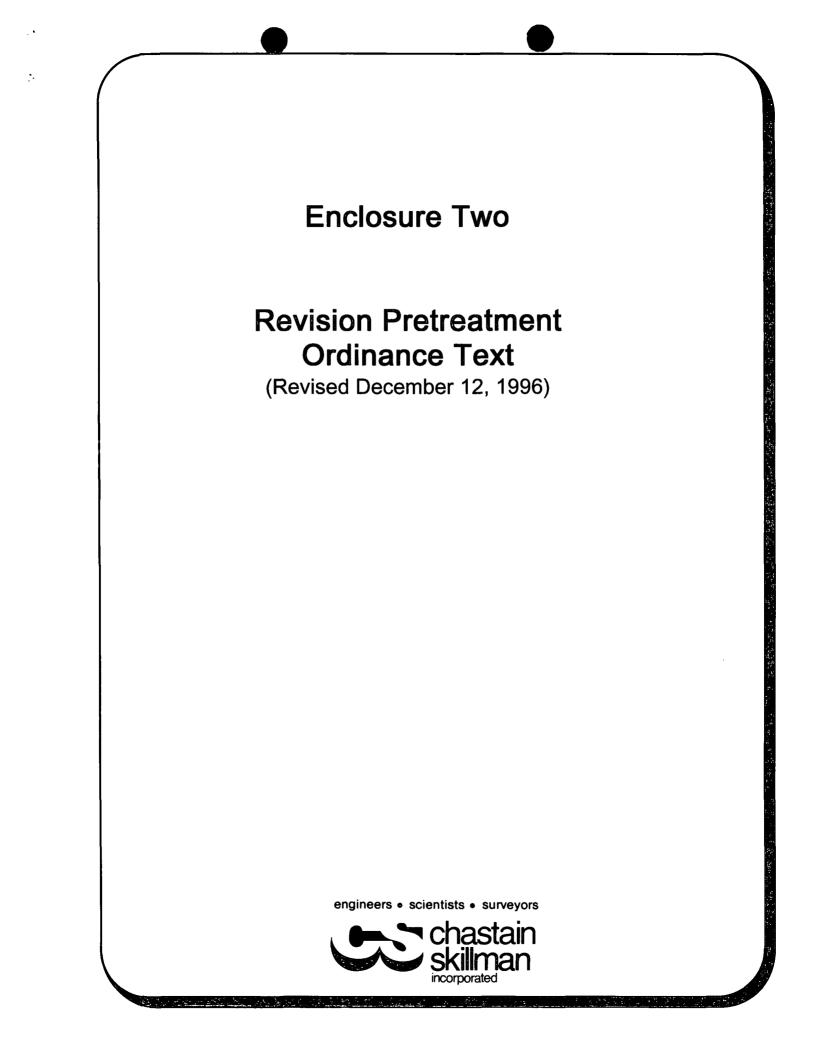
TOXIC ORGANICS: Specific toxic organic compounds have been designated to limit the discharge of substances that have the following characteristics:

1. Common in even small industrial or commercial operations in a municipality;

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- 2. Constitute a potential occupational hazard to wastewater operations or maintenance personnel due to the such substances' toxicity; or
- 3. May significantly adversely inhibit the wastewater treatment processes.

Benzene, tetrachloroethlyene, trichloroethylene, toluene and vinyl chloride are occupational hazards and should be screened at concentration levels delineated in the EPA Manual <u>Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors</u> (June 1992). The inhibition of activated sludge treatment processes is significant for the substance phenol. Limits for phenol concentration to mitigate inhibition are reported as 4 mg/l in EPA <u>Guidance Manual on the Development and Implementation of Local Discharge Limitation Under the Pretreatment Program</u> (Dec. 1987). Process removal efficiencies for all of these organic compounds, reported as median values in the cited EPA Guidance Document (Dec. 1987) for secondary activated sludge treatment, are 80 to 93%. This plant's performance evaluations conducted in 1989 and 1995 reported removal of phenol in the plant as 78 and 90%, respectively. The lower value, 78% removal efficiency, was used in calculating the allowable loading of all the designated organic compounds. Also, during the 1989 performance evaluation, background concentrations for phenol were reported as 0.12 mg/l. This value or 50% of the analytical method detection level was used as the background level in the calculations of pretreatment limits for each of the toxic organics compounds.



#### UTILITIES

five (5) percent nor any single reading over ten (10) percent of the lower explosive limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols (other than ethanol or methanol), ketones, adlehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, and sulfides and any other substance which Auburndale, the State of Florida or the EPA has notified the user is a fire hazard or a hazard to the system.

- (2) Solid or viscous substances in quantities or of such size as may be cause obstructions to the flow in a sewer or other interference with the operation of the wastewater treatment facilities, such as, but not limited to: Grease, garbage with particles greater than one-half (1/2) inch in any dimension, animal guts or tissues, paunch, manure, bones, hair, hides, or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rages, spent grains, spent hops, wastepaper, wood, plastics, gas, tar, asphalt residues, residues from refining, or processing of fuel or lubricating oil, mud or glass-grinding or polishing wastes.
- (3) Any wastewater having pH less than 5.0 or greater than 9,5, or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment and/or personnel of the POTW.
- (4) Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW or to exceed the limitations set forth in a categorical pretreatment standard. A "toxic pollutant" shall include, but not be limited to, any pollutant identified pursuant to Section 307(a) of the act.
- (5) Any noxious or malodorous liquids, gases or solids which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair.
- (6) Any substance which may cause the POTW's effluent or any other product of the POTW, such as residues, sludges or scums, to be unsuitable of reclamation and reuse or to interfere with the reclamation process. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under Section 405 of the act; any criteria, guidelines or regulations affecting sludge use or disposal developed pursuant to the Solid Waste disposal Act, the Clean Air Act, the Toxic Substances Control Act or state criteria applicable to the sludge management method being used.
- (7) Any substance which will cause the POTW to violate its NPDES and/or state disposal system permit or the receiving-water-quality standards.
- (8) Any wastewater with objectionable color not removed in the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions.

- (9) Any wasetwater having a temperature which will inhibit biological activity in the POTW treatment plant resulting in interference but in no case wastewater with a temperature at the introduction into the POTW which exceeds 40 degrees C (104 degrees F), unless the POTW treatment plant is designed to accommodate such temperature.
- (10) Any pollutants, including oxygen-demanding pollutants (BOD, COD, etc.), released at a flow rate and/or pollutant concentration which a user knows or has reason to know will cause interference to the POTW. In no case shall a slug load have flow rate or contain concentration or qualities or pollutants that exceed, for any time period longer than fifteen (15) minutes, more than five (5) times the average twenty-four-hour concentration, quantities, or flow during normal operation.
- (11) Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the director in compliance with applicable state or federal regulations.
- (12) Any water or waste containing fats, wax, grease or oils, whether emulsified or not, in excess of one hundred (100) mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two (32) degrees and one hundred fifty (15) degrees Fahrenheit (zero (0) and sixty five (65) degrees Celsius).
- (13) Any garbage that has not been properly shredded.
- (14) Any waters or wastes containing strong acid-iron pickling wastes or concentrated plating solutions, whether neutralized or not.
- (15) Materials which exert or cause:
  - a. Unusual concentrations of inert suspended solids (such as, but not limited to, fuller's earth, lime slurries and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).
  - b. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).
  - c. Unusual BOD, chemical oxygen demand or chlorine requirements in such quantities as to constitute a significant load on the POTW.
  - d. Unusual volume of flow or concentration of wastes constituting "slugs" as defined herein.
  - e. Unusual total phosphorous or total nitrogen concentrations in such quantities as to constitute a significant load on the POTW.
  - f. Alternation of a soils' assimilative properties, particularlyits' hydraulic conductivity, that my inhibit application of reclaimed water to such soil (i.e., a discharge with a sodium adsorption ratio (SAR)  $\geq$  10).
- (16) Any wastewater which causes a hazard to human life or creates a public nuisance.

When the director determines that a user(s) is contributing to the POTW any of the above-enumerated substances in such amounts as to interfere with the operation of the POTW, the director shall:

- a. Advise the user(s) of the impact of the contribution on the POTW; and
- b. Develop effluent limitation(s) for such user to correct the interference with the POTW.

(b)(1) In order to protect the treatment plant from substances that may interfere with its operation, contaminate the sludge or cause a violation of its discharge permit, the following target limits are to be met at the influent to the treatment plant(s):

$(\mathbf{a})$	Substance	<i>mg/l</i> 0.0005
(a)		
(b)	Chromium (total)	1.0
(c)	Chromium (hexavalent)	0.2
(d)	Copper	0.24
(e)	Cyanide	0.01
(f)	Lead	0.008
(g)	Mercury	0.0005
(h)	Nickel	0.25
(i)	Zinc	0.29
(j)	BOD	300.0
(k)	TSS	250.0
(I)	TN	40.0
(m)	ТР	40.0
(n)	Silver	0.01

- (2) The limits set out above may be used as a guide in design and plant control.
- (3) In order to ensure compliance with the target limits established in paragraph (b)(1) above, set standards to be met by each industrial user are established as follows; (Note:  $CBOD_{5}$  and TSS are to be regarded as <u>Guidelines</u>, rather than absolute standards):

Parameter	Daily Maximum (mg/l)
Antimony	40
Arsenic	0.27
Berylium	0.0025
Boron	4.44
Cadmium	0.018
Chromium	0.20
Cobalt	0.48
Copper	0.28
Cyanide	0.073
Fluoride	7.3
Lead	0.01
Manganese	2.94
Mercury	0.0005
Nickel	1.75
Oils and Grease	100
Phenols	0.013
Silver	0.005

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Parameter	Daily Maximum (mg/l)
Toxic Organics	
Benzene	0.13
Tetrachloroethylene	0.53
Trichloroethylene	0.71
Toluene	1.36
Vinyl Chloride	0.004
Phenol	0.013
Zinc	1.5
CBOD	975
TSS	290
Total Nitrogen	40
Total Phosphorus	24
TICH	6.0
Total Dissolved Solids	1405

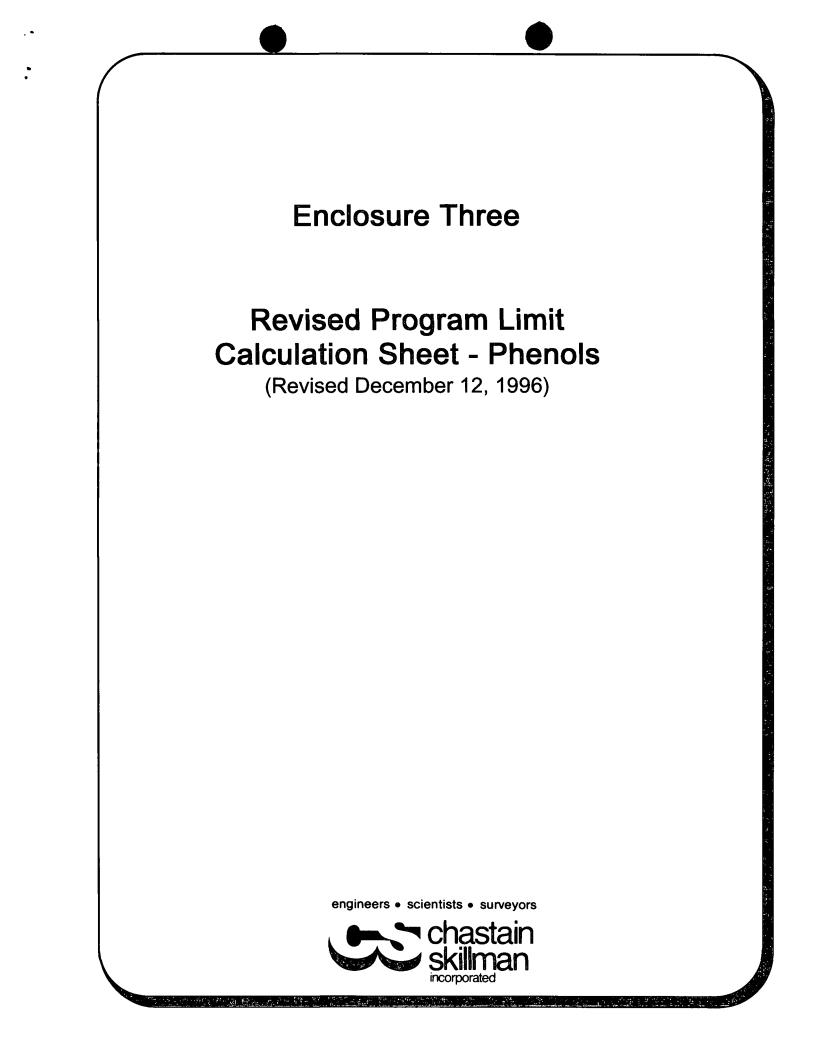
c. Any user discharging or anticipating a discharge of substances in his wastes within ten (10) percent or in excess of the concentrations identified in subsection 23-22(b)(3) may be classified as a significant industrial user and subject to the wastewater discharge permitting requirements of this article.

Significant industrial users applying for wastewater contribution permits may request a variance from the values identified in section 23-22(b)(3). The evaluation of requests for variances will be based on such factors as quantities of subject wastes and flows in relation to the total POTW influent flows and waste concentrations, the flow volume and velocities in sewer line, the material utilized in the construction of the wastewater collection system, the nature of the sewage treatment process, the capacity of the POTW, the degree of treatability of wastes in the treatment plant, the quality of sludge for suitable disposal and water quality requirements of the receiving stream for the sewage treatment plant effluent. Variances, when granted, shall be specifically identified in the industrial user's wastewater contribution permit. Variances will not be granted from national standards.

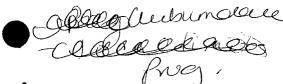
- d. If any waters or wastes are discharged or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in this section, and which, in the judgment of the director, may have a deleterious effect upon the POTW, processes equipment or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the director may:
  - 1. Reject the wastes;
  - 2. Require pretreatment to an acceptable condition for discharge to the public sewers;

- 3. Require control over the quantities and rates of discharges;
- 4. Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges;
- 5. Require payment to cover the added cost of a monitoring program to determine compliance with the requirements of this article.

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# **Environmental Protection**

**Department of** 

Lawton Chiles Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

November 26, 1996

Mr. John Dickson Wastewater Superintendent City of Auburndale P.O. Box 186 Auburndale, Florida 33823

Re: Pretreatment Program Proposed Local Limits Permit Number FL0021466

Dear Mr. Dickson:

The Department has reviewed the October 22 local limits submission received from Chastain Skillman. The review indicates that most of the comments identified in the Department's July 17 letter have been addressed. Based on the October 14 telephone conversation between Jerry Murphy of Chastain Skillman and John Coates of DEP, we are preliminarily approving your local limit submission subject to the following restrictions:

- The proposed daily maximum limit for arsenic in the October 22 submission should be revised to 0.27 mg/L, based on an allowable daily industrial loading of 0.32 lb/day and the 40 CFR 503.13 pollutant concentration of 41 mg/kg, as calculated in your July 29 submission.
- The proposed daily maximum limit for boron in the October 22 submission should be revised to 4.44 mg/L based on an allowable daily industrial loading of 5.63 lb/day and the recommended limit for sprayfield application on sandy soils of 0.75 mg/L, as calculated in your July 29 submission.
- The proposed daily maximum limit for silver in the October 22 submission is 0.004 mg/L; however, the calculated silver limit was 0.005 mg/L in the July 29 submission, based on the applicable water quality standard of 0.07 µg/L. The silver local limit should be based on the calculations in the July 29 submission (i.e., 0.005 mg/L); otherwise, an updated set of silver calculations should be submitted to support the value of 0.004 mg/L.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

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Mr. John Dickson November 26, 1996 Page 2

The October 22 submission indicates that Auburndale wishes to establish local limits for benzene, tetrachloroethylene, trichloroethylene, toluene, and vinyl chloride based on levels to protect worker health and safety, as referenced in EPA's "Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors," (EPA 812-B-92-001). However, the values proposed are not those published in Table 4-2 of EPA's guidance manual; rather, they are from Table B-1. Please note that we have recently found some discrepancies between Table 4-2 and Table B-1 in Appendix B of EPA's guidance manual. For example, please note that the screening level value of 0.0003 mg/L for vinyl chloride is incorrect using EPA's guidance manual, should be incorporated into the city's ordinance as local limits:

0.13 mg/L
0.53 mg/L
0.71 mg/L
1.36 mg/L
0.004 mg/L

The control authority should independently review and verify the values in Table 4-2 of EPA's guidance manual before incorporating these in your local limits.

The October 22 submission proposes to establish a local limit of 4.0 mg/L for 0 phenol, based on the inhibition of the activated sludge process, by referencing the inhibition value in EPA's "Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program," (Dec. 1987). The activated sludge inhibition value in Table 3-2 of this guidance manual is 50 mg/L. However, the nitrification inhibition value in Table 3-4 is 4.0 mg/L. These inhibition values are to be used in the headworks loading allocation method to calculate technically defensible local limits as was done in the city's July 29 local limit submission. The adoption of a phenol local limit of 4.0 mg/L, as proposed in the October 22 submission, is not technically defensible; therefore, this local limit is not approved. The city must provide a technically defensible local limit for phenols or determine that it does not need a local limit for this parameter. Alternatively, the city may wish to develop a local limit for chlorinated phenols based on the Class III fresh water quality standard of 0.001 mg/L in Chapter 62-302, Florida Administrative Code (F.A.C.).

Once revisions are made to the draft local limits according to the comments above, you may schedule the revised local limits and the related pretreatment program ordinance revision for adoption by the City of Auburndale. To date, the Department has not reviewed your entire pretreatment program ordinance. We have only reviewed the ordinance revision which includes a prohibition for discharges that may impact the absorption capacity of your effluent sprayfield. During 1997, the Department will be conducting an audit of your pretreatment program. Since the audit includes a complete review of your pretreatment program ordinance, Auburndale may wish to adopt local limits at the same time as any ordinance revisions that are necessary as a result of the

Mr. John Dickson November 26, 1996 Page 3





1997 audit. If you choose to proceed with the adoption of your new local limits at this time, the adopted local limits and ordinance revision should be submitted to the Department as a formal program modification in accordance with Rule 62-625.540, F.A.C.

If you have any questions on this correspondence or need clarification on local limit requirements, please contact me or John Coates at (904) 488-4524.

Sincerely,

Robert E. Heilman, P.E. Pretreatment Coordinator

cc: Ed Snipes, P.E., DEP Tampa Al Herndon, P.E., USEPA Region IV Bobby M. Tillman, City of Auburndale

			laximum	
Pollutant	Background Concentration (mg/l)	Past Limit (mg/l)	Proposed Limit (mg/l)	
Antimony	0.025	None	40.00	
Arsenic	0.0005	0.01	-0.49	0.27 ba
Beryllium	0	None	0.0025	o. 200 0 Calcular
Boron	0.34	None	1 <del>6.94</del> 4.44	
Cadmium	0.0005	0.05	0.018	loading 1 0.32
Chromium - Total	0.02	2.00	0.20	res. Cr
Cobalt		None	0.48 -	1 f 41.
Copper	0.08	2.00	0.280	
Cyanide	0.005	0.036	0.073	
Fluoride	0.405	None	7.25 -	
Lead	0.0105	2.00	0.011	
Manganese		None	3.0 /	
Mercury	0.0001	0.014	0.0001	
Nickel	0.01	0.6	1.75	
Oils & Grease		100	100	? basis
Phenols	0.013	4.0	4.0 6~	-:
Silver		.004	0.004 0.005	
Toxic Organics		·		
Benzene			1.36	0.13
Tetrachloroethylene			0.36	0.53
Trichloroethylene			3.67	ור.0
Toluene			1.18	1.36
Vinyl Chloride			0.003	0.004
Phenol			4.0	
Zinc	0.145	1.00	1.50	
BOD		2520	975.00	
TSS		520	290.00	
Total Dissolved Solids	400	None	1,405.00	



SUMMARY OF PROPOSED PRETREATMENT LIMITS								
AUBURNDALE WASTEWATER TREATMENT PLANTS								
		4 Consecu	utive Sample					
		Av	erage	Daily M	aximum			
	BACKGROUND		-	}				
	CONCENTRATION	PAST	PROPOSED	PAST	PROPOSED			
POLLUTANT ,	(mg/l)	LIMIT	LIMIT	LIMIT	LIMIT	UNITS		
Antimony	0.025			None		mg/l		
Arsenic	0.0005	0.01	<b>g</b> 0.27	0.01	ພ 0.49	mg/i		
Beryllium	0	None	••	None	ω 0.0025	mg/l		
Boron	0.34	None	<i>s</i> 4.44	None		mg/l		
Cadmium	0.0005	0.03		0.05		mg/l		
Chromium - Total	0.02	1.00		2.00	w 0.20	mg/l		
Cobalt		None	S 0.48	None		mg/l		
Copper	0.08	. 1.00		2.00	I 0.280	mg/l		
Cyanide	0.005	0.018		0.036	ω 0.073	mg/l		
Fluoride	0.405	None	S 7.25	None		mg/l		
Lead	0.0105	1.00		2.00	0.011	mg/l		
Manganese		None	S 3.00	None		mg/l		
Mercury	0.0001	0.007		0.014		mg/l –		
Nickel	0.01	0.30	1	0.60		mg/l		
Oils & Grease		100.00		100.00		mg/l		
Phenols	0.013	2.00		4.00		mg/l		
Silver	0.0001	0.004		0.008	w 0.005	mg/l		
Total Toxic Organics						;		
(EPA Method 624/625)			1		4.000	mg/l		
Zinc	0.145	0.50		1.00	1.500 س	mg/l		
BOD₅		1575		2520		mg/l		
TSS		290		520	290.00	mg/l		
Total Dissolved Solids	400	None		None				
Total Nitrogen		40		80				
Soil Adsorption Ratio		None	≤10	None				

1) Shorn - rem / long rem liming

1) Use of TTO/ combined parameter Not recommended.

3 Soil Adsorbrin Ratio o Sedium Adsorbrin Razio - why not limit Na cre. in Specific

Local Limit Pre	oject Sumr	nary Repo	rt				Proje	ect No:	21
Saturday, November	16, 1996				Representative to	al WWF flow =	<u>Qt:</u>	1.4	MGD
PROGRAM NAME:	Auburndale, C	City of			Industrial user flow	v contribution =	<u>Qi:</u>	0.14	MGD
WWF NAME:	Auburndale STP Calculated nonindustrial flow =					<u>Qni:</u>	1.26	MGD	
					Residuals disposa Percent solids in o		<u>Qs:</u> als = <u>%:</u>	0.00783156 4.00%	MGD
		otal Allowable rks Loading Crit	eria		Representative	Safety	Allow	able	Uniform
	Passthrough	Interference	Residuals	Limiting	Nonindustrial	Factor	Indust	rial	Local
POLLUTANT NAME	<u>TAHL (lb./d)</u>	TAHL (lb./d)	TAHL (lb./d)	<u>TAHL (lb./d)</u>	<u>Load (lb./d)</u>	<u>(lb./d)</u>	<u>Load (lb</u>	<u>./d) Limi</u>	t (mg/L)
PHENOLS	244.1345	46.7040 Bas	is: interference	46.7040 e based on NITRI	0.1366 FICATION and EPA L	0.0000 ocal Limit Guid			39.88300 phenol
PHENOLS, CHLORINATED	0.0531	0.0000 Bas	is: pass throug	0.0531 n based on SURFA	0.0000 ACE WATER, C-III FR	0.0000 ESH and Rule 62	•••	)531 F.A.C. (C-III	0.04545 Fresh)

...

Local Limit Pas	s Thr	ough Calculat	tions			Project No.	<u>.</u>	21
Saturday, November 1	6, 1996				Representative total WWF flow =	= <u>Qt:</u>	1.4	MGD
PROGRAM NAME:	Auburnd	ale, City of			Industrial user flow contribution =	= <u>Qi:</u>	0.14	MGD
WWF NAME:	Auburnd	ale STP			Calculated nonindustrial flow =	<u>Qni:</u>	1.26	MGD
<u> </u>		-		Total		Total		
			Percent	Allowable	Calculated	Allowable		Uniform
POLLUTANT		Discharge	Removal Prior	Headworks	Safety- Nonindustrial	Industrial	Loc	al Limit
DISPOSAL METHOD	<u> </u>	<u>Limit (mg/L)</u>	<u>to Disposal</u>	<u>Load (lb./d)</u>	Factor (lb./d) Load (lb./d)	Load (lb./d)		(mg/L)
PHENOLS		4.6		244.13455	0.00000 0.13661	243.99794		208.9739
SURFACE WATER, C-1	II FRESH	<u>(Disposal Q = 1.4</u>	40E+00 MGD )	Disc	harge Limit Ref: Rule 62-302,530	, F.A.C. (C-III Fre	esh) fo	r PHENOL
PHENOLS, CHLORINATED		0.001	78	0.05307	0.00000 0.00000	0.05307		0.0455
SURFACE WATER, C-I	I FRESH	<u>(Disposal Q = 1.4</u>	+OE+OO MGD )		Discharge Limit Ref: Rule	62-302,530, F.A.C.	. (C-II)	I Fresh)

•

1

Local Limit Int	erference Calcula	tions					Project No:	<u>.</u>	21
Saturday, November 16, 1996					Representative total WWF flow =		<u>Qt:</u>	1.4	MGD
PROGRAM NAME:	Auburndale, City of				Industrial user f	low contribution =	<u>Qi:</u>	0.14	MGD
WWF NAME:	Auburndale STP				Calculated noni	ndustrial flow =	<u>Qni:</u>	1.26	MGD
				Total	<u> </u>		Total		
		P	ercent	Allowable		Calculated	Allowable		Uniform
POLLUTANT	Interferen	ice Remova	l Prior	Headworks	Safety	Nonindustrial	Industrial	Loc	al Limit
PROCESS	Conc. (mg/	<u>L) to F</u>	Process	<u>Load (lb./d)</u>	<u>Factor (lb./d)</u>	Load (lb./d)	Load (lb./d)		(mg/L)
PHENOLS		4	0	46.70400	0.00000	0.13661	46.56739		39.8830
NITRIFICATION	<u>(Process Q =</u>	1.40E+00 MGD	2		Interference	Concentration Ref:		t Guidar 87-202)	-
PHENOLS		50	0	583.80000	0.00000	0.13661	583.66339		499.8830
ACTIVATED SLUDGE	<u>(Process Q =</u>	1.40E+00 MGD	2		Interference	Concentration Ref:	EPA Local Limit		nce (EPA 87-202)





October 22, 1996

Mr. Robert Heilmann, P.E. Pretreatment Coordinator Florida Department of Environmental Protection Twin Towers Office Building 2600 Blair Stone Road Tallahassee, FL 32399-2400

Re: City of Auburndale Pretreatment Program Permit Number FL0021486 CSI File No. 1880.01

Dear Mr. Heilmann:

We have discussed the comments of your staff on our latest revisions submitted on July 29, 1996 to referenced permit and believe the attached enclosures will clarify any remaining issues relative to the permit. Specifically, the enclosures provide for the following modifications.

- Enclosure one is a summary of the proposed pre-treatment limits, confined to daily maximum limits, justification and calculations to substantiate the proposed limits.
- Enclosure two provides a copy of portions of Auburndale's pretreatment ordinance with modifications entered directly in the text. The only significant revisions are on page 1290, 1291, and 1292 of the ordinance.

Influent analysis should be accomplished for all the toxic organic compounds for which limits have been specified. If any of these compounds are identified in the influent, additional testing may be necessary.

Should any outstanding issues be noted or any additional information be needed, please contact me at your convenience.

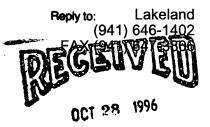
Sincerely,

CHASTAIN-SKILLMAN, INC.

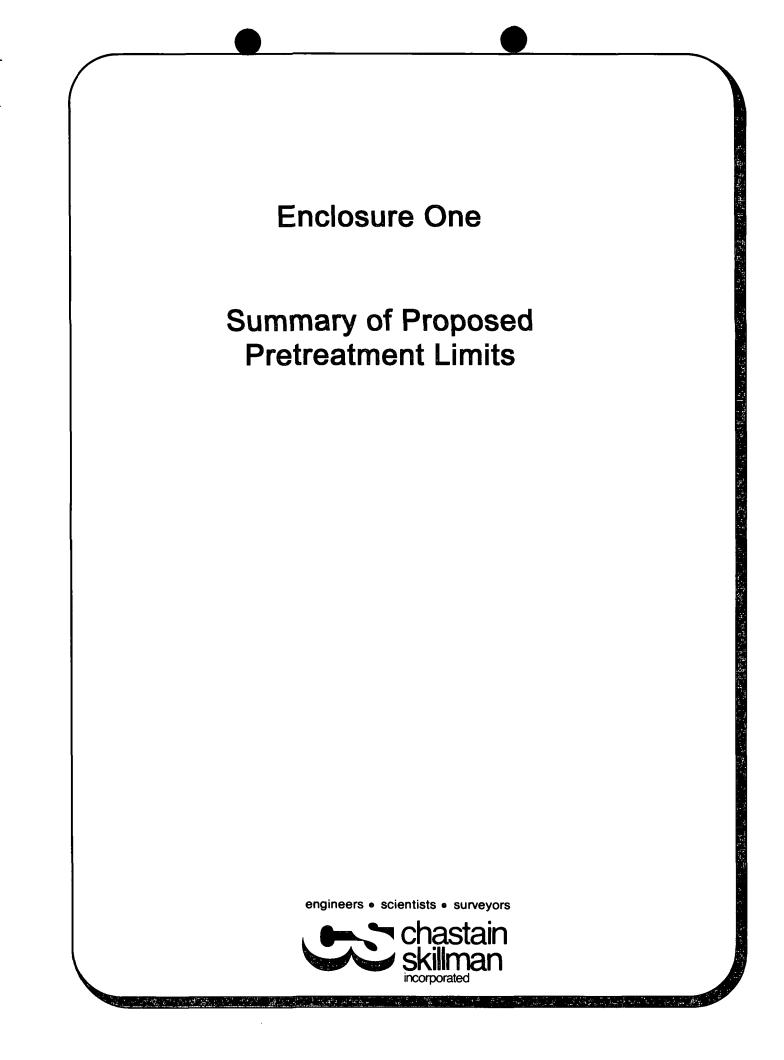
Ř. Jerry Murphy, P.E., PhD. Senior Engineering Consultant

PAB:mc

xc: John Dickson, City of Auburndale Bobby Tillman, City of Auburndale Al Herndon, P.E., USEPA Region IV Ed Snipes, P.E., DEP - Tampa



Dept. of Environmental Protection Domasilo Waste Section



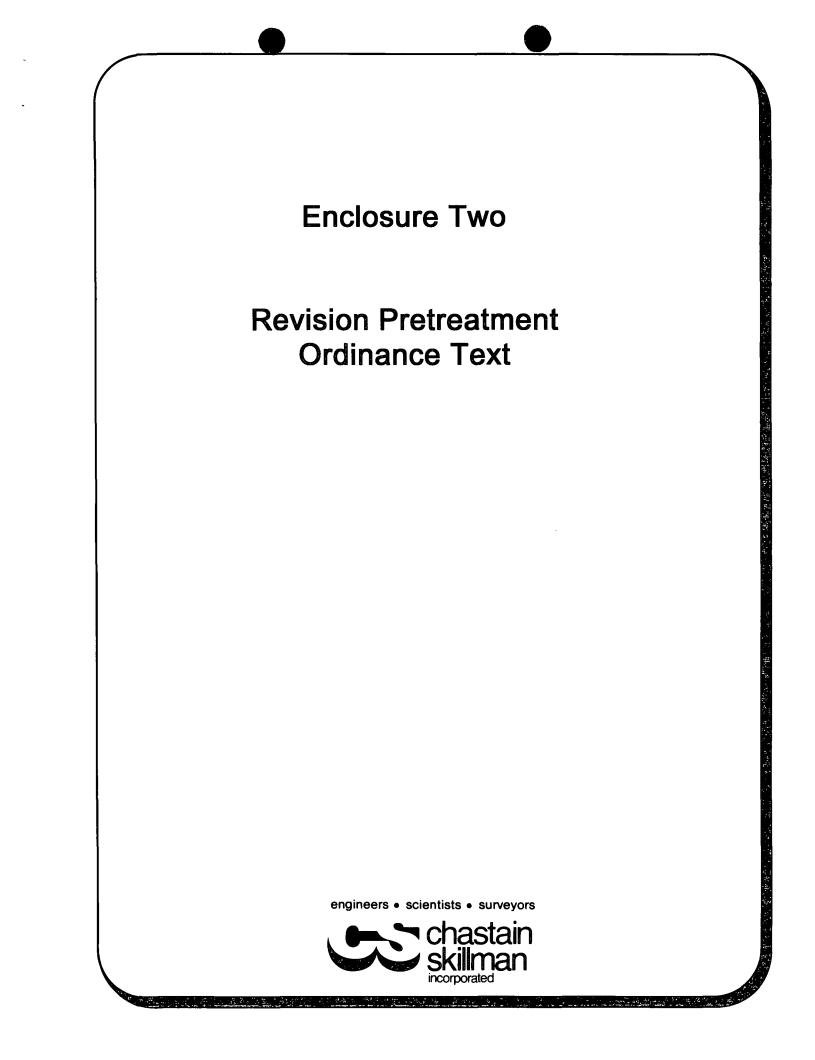
### Summary of Proposed Pretreatments Limits Auburndale Wastewater Treatment Plants

		Daily Maximum			
Pollutant	Background Concentration (mg/l)	Past Limit (mg/l)	Proposed Limit (mg/l)		
Antimony	0.025	None	40.00		
Arsenic	0.0005	0.01	0.49		
Beryllium	0	None	0.0025		
Boron	0.34	None	16.94		
Cadmium	0.0005	0.05	0.018		
Chromium - Total	0.02	2.00	0.20		
Cobalt		None	0.48		
Copper	0.08	2.00	0.280		
Cyanide	0.005	0.036	0.073		
Fluoride	0.405	None	7.25		
Lead	0.0105	2.00	0.011		
Manganese		None	3.0		
Mercury	0.0001	0.014	0.0001		
Nickel	0.01	0.6	1.75		
Oils & Grease		100	100		
Phenols	0.013	4.0	4.0		
Silver		.004	0.004		
Toxic Organics					
Benzene			1.36		
Tetrachloroethylene			0.36		
Trichloroethylene			3.67		
Toluene			1.18		
Vinyl Chloride			0.003		
Phenol			4.0		
Zinc	0.145	1.00	1.50		
BOD <sub>5</sub>		2520	975.00		
TSS		520	290.00		
Total Dissolved Solids	400	None	1,405.00		
Total Nitrogen		80	40.00		

TOXIC ORGANICS: Specific toxic organic compounds have been designated to limit the discharge of substances that have the following characteristics:

- 1. Common in even small industrial or commercial operations in a municipality;
- 2. Constitute a potential occupational hazard to wastewater operations or maintenance personnel due to the such substances' toxicity; or
- 3. May significantly adversely inhibit the wastewater treatment processes.

Benzene, tetrachloroethlyene, trichloroethylene, toluene and vinyl chloride are occupational hazards and should be screened at concentration levels delineated in the EPA Manual <u>Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors</u> (June 1992). The inhibition of activated sludge treatment processes is significant for the substance phenol. Limits for phenol concentration to mitigate inhibition are reported as 4 mg/l in EPA <u>Guidance Manual on the Development and Implementation of Local Discharge Limitation Under the Pretreatment Program</u> (Dec. 1987). Process removal efficiencies for all of these organic compounds, reported as median values in the cited EPA Guidance Document (Dec. 1987) for secondary activated sludge treatment, are 80 to 93%. This plant's performance evaluations conducted in 1989 and 1995 reported removal of phenol in the plant as 78 and 90%, respectively. The lower value, 78% removal efficiency, was used in calculating the allowable loading of all the designated organic compounds. Also, during the 1989 performance evaluation, background concentrations for phenol were reported as 0.12 mg/l. This value or 50% of the analytical method detection level was used as the background level in the calculations of pretreatment limits for each of the toxic organics compounds.



#### UTILITIES

five (5) percent nor any single reading over ten (10) percent of the lower explosive limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols (other than ethanol or methanol), ketones, adlehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, and sulfides and any other substance which Auburndale, the State of Florida or the EPA has notified the user is a fire hazard or a hazard to the system.

- (2) Solid or viscous substances in quantities or of such size as may be cause obstructions to the flow in a sewer or other interference with the operation of the wastewater treatment facilities, such as, but not limited to: Grease, garbage with particles greater than one-half (1/2) inch in any dimension, animal guts or tissues, paunch, manure, bones, hair, hides, or fleshings, entrails, whole blood, feathers, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rages, spent grains, spent hops, wastepaper, wood, plastics, gas, tar, asphalt residues, residues from refining, or processing of fuel or lubricating oil, mud or glass-grinding or polishing wastes.
- (3) Any wastewater having pH less than 5.0 or greater than 9,5, or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment and/or personnel of the POTW.
- (4) Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW or to exceed the limitations set forth in a categorical pretreatment standard. A "toxic pollutant" shall include, but not be limited to, any pollutant identified pursuant to Section 307(a) of the act.
- (5) Any noxious or malodorous liquids, gases or solids which, either singly or by interaction with other wastes, are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair.
- (6) Any substance which may cause the POTW's effluent or any other product of the POTW, such as residues, sludges or scums, to be unsuitable of reclamation and reuse or to interfere with the reclamation process. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under Section 405 of the act; any criteria, guidelines or regulations affecting sludge use or disposal developed pursuant to the Solid Waste disposal Act, the Clean Air Act, the Toxic Substances Control Act or state criteria applicable to the sludge management method being used.
- (7) Any substance which will cause the POTW to violate its NPDES and/or state disposal system permit or the receiving-water-quality standards.
- (8) Any wastewater with objectionable color not removed in the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions.

- (9) Any wasetwater having a temperature which will inhibit biological activity in the POTW treatment plant resulting in interference but in no case wastewater with a temperature at the introduction into the POTW which exceeds 40 degrees C (104 degrees F), unless the POTW treatment plant is designed to accommodate such temperature.
- (10) Any pollutants, including oxygen-demanding pollutants (BOD, COD, etc.), released at a flow rate and/or pollutant concentration which a user knows or has reason to know will cause interference to the POTW. In no case shall a slug load have flow rate or contain concentration or qualities or pollutants that exceed, for any time period longer than fifteen (15) minutes, more than five (5) times the average twenty-four-hour concentration, quantities, or flow during normal operation.
- (11) Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the director in compliance with applicable state or federal regulations.
- (12) Any water or waste containing fats, wax, grease or oils, whether emulsified or not, in excess of one hundred (100) mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two (32) degrees and one hundred fifty (15) degrees Fahrenheit (zero (0) and sixty five (65) degrees Celsius).
- (13) Any garbage that has not been properly shredded.
- (14) Any waters or wastes containing strong acid-iron pickling wastes or concentrated plating solutions, whether neutralized or not.
- (15) Materials which exert or cause:
  - a. Unusual concentrations of inert suspended solids (such as, but not limited to, fuller's earth, lime slurries and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).
  - b. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).
  - c. Unusual BOD, chemical oxygen demand or chlorine requirements in such quantities as to constitute a significant load on the POTW.
  - d. Unusual volume of flow or concentration of wastes constituting "slugs" as defined herein.
  - e. Unusual total phosphorous or total nitrogen concentrations in such quantities as to constitute a significant load on the POTW.
  - f. Alternation of a soils' assimulative properties, particularlyits' hydraulic conductivity, that my inhibit application of reclaimed water to such soil (i.e., a discharge with a sodium adsorption ratio (SAR)  $\geq$  10).
- (16) Any wastewater which causes a hazard to human life or creates a public nuisance.

When the director determines that a user(s) is contributing to the POTW any of the above-enumerated substances in such amounts as to interfere with the operation of the POTW, the director shall:

- a. Advise the user(s) of the impact of the contribution on the POTW; and
- b. Develop effluent limitation(s) for such user to correct the interference with the POTW.

(b)(1) In order to protect the treatment plant from substances that may interfere with its operation, contaminate the sludge or cause a violation of its discharge permit, the following target limits are to be met at the influent to the treatment plant(s):

Substance	mg/l
Cadium	0.0005
Chromium (total)	1.0
Chromium (hexavalent)	0.2
Copper	0.24
Cyanide	0.01
Lead	0.008
Mercury	0.000024
Nickel	0.25
Zinc	0.29
BOD <sub>5</sub>	300.0
TSS	250.0
TN	40.0
TP	40.0
Silver	0.0006
	Cadium Chromium (total) Chromium (hexavalent) Copper Cyanide Lead Mercury Nickel Zinc BOD₅ TSS TN TP

- (2) The limits set out above may be used as a guide in design and plant control.
- (3) In order to ensure compliance with the target limits established in paragraph (b)(1) above, set standards to be met by each industrial user are established as follows:

Parameter	Daily Maximum (mg/l)
Antimony	40
Arsenic	0.49
Berylium	0.0025
Boron	16.94
Cadmium	0.018
Chromium	0.20
Cobalt	0.48
Copper	0.28
Cyanide	0.073
Fluoride	7.3
Lead	0.01
Manganese	2.94
Mercury	0.0001
Nickel	1.75
Oils and Grease	100
Phenols	4.0
Silver	0.004

Parameter	Daily Maximum (mg/l)
Toxic Organics	
Benzene	0.14
Tetrachloroethylene	0.53
Trichloroethylene	0.71
Toluene	0.003
Vinyl Chloride	0.0003
Phenol	4.0
Zinc	1.5
CBOD	975
TSS	290
Total Nitrogen	40
Total Phosphorus	24
TICH .	6.0
Total Dissolved Solids	1405

§ 23-22

c. Any user discharging or anticipating a discharge of substances in his wastes within ten (10) percent or in excess of the concentrations identified in subsection 23-22(b)(3) may be classified as a significant industrial user and subject to the wastewater discharge permitting requirements of this article.

Significant industrial users applying for wastewater contribution permits may request a variance from the values identified in section 23-22(b)(3). The evaluation of requests for variances will be based on such factors as quantities of subject wastes and flows in relation to the total POTW influent flows and waste concentrations, the flow volume and velocities in sewer line, the material utilized in the construction of the wastewater collection system, the nature of the sewage treatment process, the capacity of the POTW, the degree of treatability of wastes in the treatment plant, the quality of sludge for suitable disposal and water quality requirements of the receiving stream for the sewage treatment plant effluent. Variances, when granted, shall be specifically identified in the industrial user's wastewater contribution permit. Variances will not be granted from national standards.

- d. If any waters or wastes are discharged or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in this section, and which, in the judgment of the director, may have a deleterious effect upon the POTW, processes equipment or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the director may:
  - 1. Reject the wastes;
  - 2. Require pretreatment to an acceptable condition for discharge to the public sewers;

- 3. Require control over the quantities and rates of discharges;
- 4. Require payment to cover the added cost of handling and treating the wastes not covered by existin taxes or sewer charges;
- 5. Require payment to cover the added cost of a monitoring program to determine compliance with the requirements of this article.



,4

-Aubundale Program

Department of Environmental Protection

0+2

# **TELEPHONE CONTACT:**

Copy to File: Major \_\_\_\_\_

CC:\_\_\_\_\_

⊠initiated	□received	Date:	9/1/20	
	stacted: <u>Paul</u>			none:( <u>94/)646 - 1402</u>
Title: 2.4	astain-SKillmon,	Ensincering R	epresenting:	ing at Auburndale
<u>Summary:</u>				
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D The read	use of EPA nmended limits set and "daily	's 'long- (see at V local I;	term and toughed Table mits	"shorn-rera" Use 19) 1. develop
The	irrigation size (	for exam	de sharz-	detined " the of expected use of ser Means up 7. Id g. ahead and " /inits and
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Follow Up	Required:	erson:		

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# Department of Environmental Protection

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□initiated	□received	Date:	Time:	
Person Con	tacted:		Telephone:()	
Title:		Repre	esenting:	
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<u></u> 0n0	Spenific	condizion. 2	address SAR	
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Follow Up Gyes Action Req	Required: and Ino Contac uired: <u>Confor</u> <u>Aubumdal</u>	send us a re ct person: <u>J</u> with B.b. unil we receiv	hold review of loca	ub mission
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## Manual

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## **Guidelines for Water Reuse**

## **U.S. Environmental Protection Agency**

Office of Water Office of Wastewater Enforcement and Compliance Washington, DC

Office of Research and Development Office of Technology Transfer and Regulatory Support Center for Environmental Research Information Cincinnati, Ohio

**U.S.** Agency for International Development Washington, DC

#### Table 19. Recommended Limits for Constituents in Reclaimed Water for Irrigation

#### TRACE HEAVY METALS

Loi Constituent	ng-Term Use (mg/L)	Short-Term Use (mg/L)	Remarks
Aluminum	5.0	20	Can cause nonproductivity in acid soils, but soils at pH 5.5 to 8.0 will precipitate the ion and eliminate toxicity.
Arsenic	0.10	2.0	Toxicity to plants varies widely, ranging from 12 mg/L for Sudan grass to less than 0.05 mg/L for rice.
Beryllium	0.10	0.5	Toxicity to plants varies widely, ranging from 5 mg/L for kale to 0.5 mg/L for bush beans.
Boron	0.75	2.0	Essential to plant growth, with optimum yields for many obtained at a few-tenths mg/L in nutrien solutions. Toxic to many sensitive plants (e.g., citrus) at 1 mg/L. Usually sufficient quantities ir reclaimed water to correct soil deficiencies. Most grasses relatively tolerant at 2.0 to 10 mg/L
Cadmium	0.01	0.05	Toxic to beans, beets, and turnips at concentrations as low as 0.1 mg/L in nutrient solution. Conservative limits recommended.
Chromium	0.1	1.0	Not generally recognized as essential growth element. Conservative limits recommended due to lack of knowledge on toxicity to plants.
Cobalt	0.05	5.0	Toxic to tomato plants at 0.1 mg/L in nutrient solution. Tends to be inactivated by neutral and alkaline soils.
Copper	0.2	5.0	Toxic to a number of plants at 0.1 to 1.0 mg/L in nutrient solution.
Fluoride	1.0	15.0	Inactivated by neutral and alkaline soils.
Iron	5.0	20.0	Not toxic to plants in aerated soils, but can contribute to soil acidification and loss of essentia phosphorus and molybdendum.
Lead	5.0	10.0	Can inhibit plant cell growth at very high concentrations.
Lithium	2.5	2.5	Tolerated by most crops at up to 5 mg/L; mobile in soil. Toxic to citrus at low doses recommended limit is 0.075 mg/L.
Manganese	0.2	10.0	Toxic to a number of crops at a few-tenths to a few mg/L in acid soils.
Molybdenum	0.01	0.05	Nontoxic to plants at normal concentrations in soil and water. Can be toxic to livestock if forage is grown in soils with high levels of available molybdenum.
Nickel	0.2	2.0	Toxic to a number of plants at 0.5 to 1.0 mg/L; reduced toxicity at neutral or alkaline pH.
Selenium	0.02	0.02	Toxic to plants at low concentrations and to livestock if forage is grown in soils with low levels of added selenium.
Tin, Tungsten, & Titaniun	n —	-	Effectively excluded by plants; specific tolerance levels unknown
Vanadium	0.1	1.0	Toxic to many plants at relatively low concentrations.
Zinc	2.0	10.0	Toxic to many plants at widely varying concentrations; reduced toxicity at increased pH (6 or above) and in fine-textured or organic soils.

#### OTHER PARAMETERS

Constituent	Recommended Limit	Remarks
рН	6.0	Most effects of pH on plant growth are indirect (e.g., pH effects on heavy metals' toxicity described above).
TDS	500-2,000 mg/L	Below 500 mg/L, no detrimental effects are usually noticed. Between 500 and 1,000 mg/L, TDS in irrigation water can affect sensitive plants. At 1,000 to 2,000 mg/L, TDS levels can affect many crops and careful management practices should be followed. Above 2,000 mg/L, water can be used regularly only for tolerant plants on permeable soils.
Free Chlorine Re	sidual < 1 mg/L	can be used regularly only for tolerant plants on permeable solits.

Source: Adapted from EPA, 1973.





July 29, 1996

Mr. Robert Heilman, P.E. Pretreatment Coordinator Florida Department of Environmental Regulation Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

### Re: City of Auburndale Pretreatment Program Permit Number FL0021486 CSI File 1880.01

Dear Mr. Heilman:



Dept. of Environmental Protection Domestic Waste Section

As the design professional responsible for developing Auburndale's original EPAapproved pretreatment program, Mr. Dickson has asked that I respond to your letter of July 17, 1996 regarding Auburndale's pretreatment program. To simplify our response, we will respond in chronological order to your letter.

We originally designed a two-tier system for Auburndale using monthly and daily limits. The daily limits were designed to protect the treatment process against inhibition and upset. They were also established to ensure no violation of state water quality standards for Lake Lena Run, the receiving water body. The monthly limits, which in most cases are more stringent, are designed to protect the City's effluent spray irrigation grove and to ensure that the City's sludge meets DEP and EPA requirements. As pollutants accumulate over time, we felt that the use of more stringent monthly average standards for pollutants which would adversely impact either the sprayfield or sludge disposal was appropriate.

It is our understanding that at the last review by DEP, the use of monthly average limits was questioned. It is also our understanding, based on discussions with Billy Mills, that the DEP recommended the use of four consecutive sample limits if long-term average limits were to be utilized. This was due to the City's current policy of collecting samples once monthly on several industries. Therefore, we revised the City's ordinance to change from a monthly average to a four consecutive sample average.

A one day exceedance of the long-term average limitations will not necessarily cause an upset or inhibition of treatment. Therefore, we believe it is appropriate to use both short- and long-term limits, depending upon the pollutant and the area of concern.

In calculating the local limits, the use of the 10% value for industrial flow was designed to include an allowance for growth and to provide a safety factor. This was stated in the original EPA pretreatment document and approved/accepted by EPA. Presently, the industrial flow is significantly less than this 10% at approximately 80,000 to 100,000 gallons per day. However, the 10% value does provide a buffer for future growth and also ensures that the limits are conservative.

Mr. Robert Heilman, P.E. July 29, 1996 Page Two

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In response to your last comments, we have gone through each limit and prepared additional documentation, in textual form, which better explains the source and nature of each limit.

Where the inhibition concentrations have not been referenced, these concentrations were derived from EPA guidance documents. Where other data was used, it is from readily available WEF documents. Again, the attached supplemental information outlines the inhibition concentrations and their sources.

The hardness value of 110 mg/L was measured by the City on their treated wastewater. This was in response to DEP's earlier comments on the value of 300 mg/L, which was based on the raw potable water characteristics. If additional documentation of the City's more recent testing is required, please advise.

We appreciate the opportunity to address the issues which you have raised. If you have any questions, or need additional information, please contact me at your convenience.

Sincerely,

CHASTAIN-SKILLMAN, INC.

Paul Binin

Paul A. Bizier, P.E., DEE Director of Environmental Engineering

PAB/mc

Encl.

xc: John Dickson, City of Auburndale Bobby Tillman, City of Auburndale Al Herndon, P.E., U.S. EPA Region IV Ed Snipes, P.E., DEP Tampa



	SUMMARY OF PR	OPOSED P	RETREATME	NT LIMITS	<u> </u>	
	AUBURNDALE WA	STEWATE	R TREATMEN	NT PLANTS		
		4 Consecu	utive Sample			
		Ave	erage	Daily M	aximum	
	BACKGROUND					
	CONCENTRATION	PAST	PROPOSED	PAST	PROPOSED	
POLLUTANT	(mg/l)	LIMIT	LIMIT	LIMIT	LIMIT	UNITS
Antimony	0.025	None		None	40.00	mg/l
Arsenic	0.0005	0.01	0.27	0.01	0.49	mg/l
Beryllium	0	None		None	0.0025	mg/l
Boron	0.34	None	4.44	None	16.94	mg/l
Cadmium	0.0005	0.03		0.05	0.018	mg/l
Chromium - Total	0.02	1.00		2.00	0.20	mg/l
Cobalt		None	0.48	None		mg/l
Copper	0.08	1.00		2.00	0.280	mg/l
Cyanide	0.005	0.018		0.036	0.073	mg/l
Fluoride	0.405	None	7.25	None		mg/l
Lead	0.0105	1.00		2.00	0.011	mg/l
Manganese		None	3.00	None		mg/l
Mercury	0.0001	0.007		0.014		mg/l
Nickel	0.01	0.30		0.60		mg/l
Oils & Grease		100.00		100.00	100.00	mg/l
Phenols	0.013			4.00		mg/l
Silver	0.0001	0.004		0.008	0.005	mg/l
Total Toxic Organics (EPA Method 624/625)					4.000	mg/l
Zinc	0.145	0.50		1.00	1.500	mg/l
BOD <sub>5</sub>		1575		2520	975.00	mg/l
TSS		290		520	290.00	mg/l
Total Dissolved Solids	400	None		None	1,405.00	mg/l
Total Nitrogen		40		80		mg/l
Soil Adsorption Ratio		None	≤10	None		

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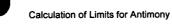
**Antimony** (40 mg/L max.) Background testing was performed by the City in 1989 at two different locations where there was no identifiable industrial contribution. At that time, antimony was not detected. Therefore, the background concentration was established at one-half the detection limit, or 0.025 mg/L.

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Antimony is not known to inhibit activated sludge or nitrification. There is no defined limitation on Antimony loadings in effluent reuse situations. There is no defined limitation on Antimony loadings for sludge disposal/reuse. Therefore, the only limitation is based on Class III Water Quality Criteria. In the 1989 development of the Pretreatment Program, no antimony was detected in the plant influent. Therefore, it is impossible to calculate a plant-specific value for removal efficiency. As no data is available, it is assumed that no Antimony is removed in the treatment plant, which represents a worst case scenario.

Based on the Water Quality Criteria, and on a background concentration of 0.025 mg/L, the program limit is 42.7 mg/L. To simplify, this has been rounded to 40 mg/L. Because there are no long-term limitations on Antimony, there is no long-term limit.





Pollutant:	Antimony				
^	BACKGROUND INFORMATION				
A	Pollutant of Concern	Antimony		· · · · ·	
	Avg. Background Conc.:	Antimony 0.025	ma/l	(detection	limit)
	Industrial Contribution:	10%	11.9/1	lactoolou	
	Plant Design Capacity:		MGD		
	Domestic Portion	1.26	MGD		
	Total Domestic Loading of Pollutant:	0.26271	pounds per	day	
B	CALCULATION OF HEADWORKS			-	
	LOADING FOR:	Antimony			
	Inhibition of Activated Sludge Process				
	Inhibition of Activated Studge Process	<b>&gt;</b>			
	Inhibiting Concentration:	N.A.	mg/l		
	Influent Limiting Concentration:	N.A.	mg/l		
	Influent Limiting Mass Loading:	#VALUE!	pounds per	r day	
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor Limiting WQ Concentration	1	mg/l		
	Maximum Effluent Conc.	4.3	mg/t		
	Reduction of Pollutant in POTW		based on F	lant Analys	ses
	Maximum Influent Conc.		mg/l		
	Influent Mass Loading		pounds pe	r day	
3	Max. Allowable Mass Loading to Prot	ect Effluent S	prayfield		
	Maximum Effluent Concentration	N.A.	mg/l		
	Reduction of Pollutant in POTW Maximum Influent Conc.		based on F		ses
	Influent Mass Loading	#VALUE! #VALUE!	pounds pe	r dav	
		#VALUE:	pounds pe		
4	Max. Allowable Mass Loading to Mee	t Sludae Crite	ria	· · ·	-
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal				
	(wet solids):		cf/day	(design)	
		7831.56			
		29642.455			
	Final solids concentration	29642.455 4%			
	Sludge Flow to Disposal	470			
	(dry basis)	1185.6982	ka/dav		
	Mass Loading to Sludge	#VALUE!			
			lbs. per da	v	
				Í	
	Removal of Pollutant in POTW	0%	From Plant	t Testing	<u> </u>
	Removal of Pollutant in POTW Allowable Influent Mass Loading	0% #VALUE!	From Plant lbs. per da	t Testing y	
	Allowable Influent Mass Loading	0% #VALUE!	From Plant lbs. per da	t Testing y	
5	Allowable Influent Mass Loading Determination of Limiting Factor	0% #VALUE!	lbs. per da	y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	#VALUE!	lbs. per da Ibs. per da	y  y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	#VALUE!	lbs. per da lbs. per da lbs. per da	y y y y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	#VALUE!	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	#VALUE!	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	#VALUE!	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5 	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	#VALUE!	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	#VALUE! 50.2068	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	#VALUE! 50.2068	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	#VALUE! 50.2068 50.2068 50.2068	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	#VALUE! 50.2068 50.2068 50.2068	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	#VALUE! 50.2068 50.2068 50.2068 0.26271	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	#VALUE! 50.2068 50.2068 50.2068 0.26271	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	#VALUE! 50.2068 50.2068 50.2068 0.26271 49.94409	Ibs. per da Ibs. per da	y y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	#VALUE! 50.2068 50.2068 50.2068 0.26271	Ibs. per da Ibs. per da	y y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	#VALUE! 50.2068 50.2068 50.2068 0.26271 49.94409 42.775	Ibs. per da Ibs. per da	y y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	#VALUE! 50.2068 50.2068 50.2068 0.26271 49.94409	Ibs. per da Ibs. per da	y y y y y y y y y	

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**Arsenic** (0.27 mg/L average, 0.49 mg/L max.) Background testing was performed by the City in 1989 at two different locations where there was no identifiable industrial contribution. At that time, arsenic was not detected. Therefore, the background concentration was established at one-half the detection limit, or 0.0005 mg/L.

Arsenic is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 0.05 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). In addition, there is a limiting water quality concentration of 0.05 mg/L for Class III surface waters. In the 1989 development of the Pretreatment Program, the influent to the wastewater plant was tested for arsenic, with none detected. Therefore, it was impossible to calculate a plant-specific arsenic removal efficiency. It has been assumed, lacking specific test data, that the removal of arsenic in the POTW will be equivalent to 33%, as identified in the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual*. To meet 503 and 17-640 regulations, there are limitations on arsenic in sludge. Finally, to protect the effluent sprayfield, the effluent concentration of arsenic must be less than 2 mg/L on a short-term basis, and less than 0.1 mg/L on a long-term basis.

On a short-term basis, meeting Class III surface water standards will govern, with a resulting maximum allowable value of 0.496 mg/L. For simplicity, this has been rounded to a daily maximum of 0.49 mg/L. On a long-term basis, meeting sludge disposal requirements governs. This results in a maximum allowable value of 0.274 mg/L, which has been rounded to the 4 consecutive sample limit of 0.27 mg/L.





ronulani.	Arsenic						
<b>A</b> .	BACKGROUND INFORMATION						
	Pollutant of Concern	Arsenic					
	Avg. Background Conc.:	0.0005		(1/2 detection li	mit)		
	Industrial Contribution:	10%					
	Plant Design Capacity:	1.4	MGD				
	Domestic Portion	1.26	MGD				
	Total Domestic Loading of Pollutant:	0.0052542	pounds per	' day			
3.	CALCULATION OF HEADWORKS						
	LOADING FOR:	Arsenic					
1	Inhibition of Activated Sludge Process	S					
	Inhibiting Concentration:	0.05	mg/l				
	Influent Limiting Concentration:		mg/l				
	Influent Limiting Mass Loading:		pounds pe	r dav			
	Innuent cirinting Mass Loading.	0.0000	poundo po				
	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality	1			
	Max. Allowable Mass Loading to Mee	Class III VVa	ter quality	· · · · · · · · · · · · · · · · · · ·			
	O of Loke Land Dur	-	mad				
	7Q10 of Lake Lena Run		mgd				
	Max. Q of Effluent		mgd				
	Dilution Factor	1					
	Limiting WQ Concentration		mg/l				
	Maximum Effluent Conc.		mg/l				
	Reduction of Pollutant in POTW			CERCLA Manua	ļ		
	Maximum Influent Conc.	0.0746269					
	Influent Mass Loading	0.8713433	pounds pe	r day			
3	Max. Allowable Mass Loading to Prof	ect Effluent S	prayfield				
		Long-term			Short-term		
	Maximum Effluent Concentration		mg/l		2	mg/i	
	Reduction of Pollutant in POTW			CERCLA Man.	33%		
	Maximum Influent Conc.	0.1492537			2.985075		
	Influent Mass Loading		pounds pe	r dav	34 85373	pounds pe	r dav
		1.7 420000	poundo pe		04.00070	pounds pe	
	4 Max. Allowable Mass Loading to Mee	at Sludge Crite	ria			•	
	Limiting Concentration		mg/kg	dry solids			
	Sludge Flow to Disposal	41	iiig/kg	ury solius			
	(wet solids):	1047	cf/day	(dosign)			;
	(wet solids).	1047		(design)			
		7024 60	l a a al				•
		7831.56					
		29642.455	L/day				
		29642.455 29642.455	L/day kg/day				
	Final solids concentration	29642.455	L/day kg/day				
	Sludge Flow to Disposal	29642.455 29642.455 4%	L/day kg/day				
	Sludge Flow to Disposal (dry basis)	29642.455 29642.455 4% 1185.6982	L/day kg/day kg/day				
	Sludge Flow to Disposal	29642.455 29642.455 4% 1185.6982 48613.6255	L/day kg/day kg/day mg/day				
	Sludge Flow to Disposal (dry basis)	29642.455 29642.455 4% 1185.6982 48613.6255	L/day kg/day kg/day	y			
	Sludge Flow to Disposal (dry basis)	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072	L/day kg/day kg/day mg/day lbs. per da				
	Sludge Flow to Disposal (dry basis)	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072	L/day kg/day kg/day mg/day lbs. per da	y Site Discharges	Treatability I	Manual	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33%	L/day kg/day kg/day mg/day lbs. per da	Site Discharges	Treatability	Manual	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33%	L/day kg/day kg/day mg/day lbs. per da CERCLA S	Site Discharges	Treatability I	Manual	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33%	L/day kg/day kg/day mg/day lbs. per da CERCLA S	Site Discharges	Treatability I		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term	L/day kg/day mg/day libs. per da CERCLA S libs. per da	Site Discharges	Short-term		y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 0.5838	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da	Site Discharges y y	Short-term 0.5838	lbs. per da	e
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 0.5838 0.8713	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da	Site Discharges Y Y Y Y	Short-term 0.5838 0.8713	lbs. per da lbs. per da	y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 0.5838 0.8713 1.7427	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges Y Y Y Y Y	Short-term 0.5838 0.8713	lbs. per da lbs. per da lbs. per da	y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges y y y y y y y y	Short-term 0.5838 0.8713 34.8537	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges y y y y y y y y	Short-term 0.5838 0.8713 34.8537	lbs. per da lbs. per da lbs. per da	y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges y y y y y y y y	Short-term 0.5838 0.8713 34.8537	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges y y y y y y y y	Short-term 0.5838 0.8713 34.8537	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges Y Y Y Y Y Y Y Y	Short-term 0.5838 0.8713 34.8537 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y
C.	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Site Discharges Y Y Y Y Y Y Y Y	Short-term 0.5838 0.8713 34.8537 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248	L/day kg/day kg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248	L/day kg/day mg/day ibs. per da CERCLA S ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248	L/day kg/day kg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248	L/day kg/day mg/day ibs. per da CERCLA S ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.5838	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248	L/day kg/day mg/day lbs. per da CERCLA S lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.0053 0.5785	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248	L/day kg/day kg/day ibs. per da CERCLA S ibs. per da ibs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.0053 0.5785 0.4955	lbs. per da lbs. per da	y y y y y y
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.455 29642.455 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.8713 1.7427 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248 0.0053 0.3195	L/day kg/day kg/day ibs. per da CERCLA S ibs. per da ibs. per da	y y y y y y y y y y	Short-term 0.5838 0.8713 34.8537 0.5838 0.5838 0.0053 0.5785	Ibs. per da Ibs. per da	y y y y y y

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**Beryllium** (0.0025 mg/L maximum) No background testing has been performed by the City for beryllium. Therefore, the background concentration was assumed to be equal to 1/2 the instrument detection limit as outlined in Table 3111:1 of the 1992 Edition of *Standard Methods for the Examination of Water and Wastewater*.

Beryllium is not known to inhibit activated sludge or nitrification. There are limitations on beryllium loadings in effluent reuse situations, with short-term concentrations limited to 0.5 mg/L and long-term concentrations limited to 0.1 mg/L (See EPA *Guidelines for Water Reuse*). There is no defined limitation on beryllium loadings for sludge disposal/reuse. Therefore, the limitation is based on Class III Water Quality Criteria, with a discharge limit of 0.00013 mg/L. As no data is available, it is assumed that no beryllium is removed in the treatment plant, which represents a worst case scenario.

Based on the Water Quality Criteria, and on a background concentration of 0.0025 mg/L, the treatment plant has no capacity for beryllium. Therefore, the pretreatment limit has been set at 1/2 the detection limit.





Pollutant:	Beryllium						
۹	BACKGROUND INFORMATION						
	Pollutant of Concern	Beryllium		TO Det Linet			
	Avg. Background Conc.:	0.0025	mg/i	1/2 Det. Limit			
	Industrial Contribution: Plant Design Capacity:	10%	MGD				
	Domestic Portion		MGD		· · · · · · · · · · · · · · · · · · ·		
	Total Domestic Loading of Pollutant:		pounds per	r dav			
	Total Domestic Loading of Fondiant.	0.020211	pounds per	uay			
В.	CALCULATION OF HEADWORKS						
	LOADING FOR:	Beryllium					
	- · · · · · · · · · · · · · · · · · · ·						
1	Inhibition of Activated Sludge Process	3					
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A.	mg/l		· ·		
	Influent Limiting Mass Loading:	#VALUE!	pounds per	rday			
	Max. Allowable Mass Loading to Mee	t Class III Ma	tor Quality				
4	Nax. Allowable Mass Loading to Mee	Class III YYa					
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent	1	mgd				
	Dilution Factor	0.03			1		
· · · · · · · · · · · · · · · · · · ·	Limiting WQ Concentration	0.00013	mg/l				
	Maximum Effluent Conc.	0.00013			1		
	Reduction of Pollutant in POTW	0%	(Assumed)	I			
	Maximum Influent Conc.	0.00013					
	Influent Mass Loading	0.0015179	pounds pe	r day			
	, ,						
3	B Max. Allowable Mass Loading to Prot		prayfield		<b>a</b>		
		Long-term			Short-term		
	Maximum Effluent Concentration Reduction of Pollutant in POTW		mg/l	loot Analysee		mg/l	
	Maximum Influent Conc.		mg/l	Plant Analyses	0	mg/l	<u> </u>
	waximum innuent conc.	0.1					
	Influent Mass Loading	1 1676		r dav			dav
	Influent Mass Loading	1.1676	pounds pe	r day		pounds per	day
	<b>*</b>	1	pounds pe	r day			day
4	4 Max. Allowable Mass Loading to Mee	1	pounds pe eria				'day
4	<b>*</b>	et Sludge Crite	pounds pe	r day dry solids			day
	Max. Allowable Mass Loading to Mee	t Sludge Crite N.A.	pounds pe eria				day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	et Sludge Crite N.A. 1047 7831.56	pounds pe ria mg/kg cf/day gpd	dry solids			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	t Sludge Crite N.A. 1047 7831.56 29642.455	pounds pe ria mg/kg cf/day gpd L/day	dry solids			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455	pounds pe eria mg/kg cf/day gpd L/day kg/day	dry solids			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	t Sludge Crite N.A. 1047 7831.56 29642.455	pounds pe eria mg/kg cf/day gpd L/day kg/day	dry solids			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4%	pounds pe ria mg/kg cf/day gpd L/day kg/day	dry solids			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	pounds pe mg/kg cf/day gpd L/day kg/day	dry solids			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day mg/day	dry solids (design)			day
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	pounds pe mg/kg cf/day gpd L/day kg/day kg/day mg/day	dry solids (design)			
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da	dry solids (design)			
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):      Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design) y			
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge     Removal of Pollutant in POTW	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da	dry solids (design) y			
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge     Removal of Pollutant in POTW	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	pounds pe mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design) y		pounds per	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da	dry solids (design) y y	5.838	pounds per	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):      Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge      Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0%	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da	dry solids (design) y y y	5.838	Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0%	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y	5.838	lbs. per da lbs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y	5.838 Short-term 0.001518 5.838	Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y	5.838 Short-term 0.001518 5.838	lbs. per da lbs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y	5.838 Short-term 0.001518 5.838	Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE!	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y	5.838 Short-term 0.001518 5.838	Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 1.1676 0.0015179	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y	5.838 5.838 0.001518 5.838 0.001518	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):      Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge      Removal of Pollutant in POTW Allowable Influent Mass Loading      Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 1.1676 0.0015179	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y	5.838 5.838 0.001518 5.838 0.001518	Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):      Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge      Removal of Pollutant in POTW Allowable Influent Mass Loading      Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 1.1676 0.0015179	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y	5.838 5.838 5.838 0.001518 0.001518 0.001518	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 1.1676 0.0015179	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y	5.838 5.838 5.838 0.001518 0.001518 0.001518	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0.026271	pounds pe mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 0.001518 0.001518 0.026271	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 1.1676 0.0015179	pounds pe mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 0.001518 0.001518 0.026271	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0.026271	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 0.001518 0.001518 0.026271	Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0.026271 -0.0247531	pounds pe mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518 0.026271 -0.02475	Ibs. per da Ibs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0.026271 -0.0247531	pounds pe mg/kg cf/day gpd L/day kg/day lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 0.001518 0.001518 0.001518 0.026271 -0.02475 -0.0212 0.0025	pounds per pounds per lbs. per da lbs. per da	
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	t Sludge Crite N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0.0015179 0.026271 -0.0247531 -0.0212	pounds pe mg/kg cf/day gpd L/day kg/day lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518 0.026271 -0.02475 -0.0212	pounds per pounds per lbs. per da lbs. per da	

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**Boron** (4.44 mg/L avg., 16.94 mg/L daily maximum) Background testing was performed by the City in 1994. Therefore, the background concentration was based on this testing, which resulted in a value of 0.34 mg/L.

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Boron is not listed by the EPA as having an inhibitory effect on activated sludge. There is no limiting water quality concentration for boron in Class III surface waters. However, to protect the effluent sprayfield, the effluent concentration of boron must be less than 2 mg/L on a short-term basis, and less than 0.75 mg/L on a long-term basis (See EPA *Guidelines for Water Reuse*). The testing In 1994 did not indicate a significant reduction in boron across the City's wastewater treatment plant. Therefore, no reduction in boron was assumed.

On a short-term basis, meeting sprayfield requirements will result in a maximum allowable value of 16.94 mg/L. On a long-term basis, the maximum allowable value is 4.44 mg/L.





Pollutant:	Boron			<u> </u>			
۹.	BACKGROUND INFORMATION						
	Pollutant of Concern	Boron					
	Avg. Background Conc.:	0.34	mg/l	(1994 testing)			
	Industrial Contribution:	10%					
	Plant Design Capacity:		MGD				
	Domestic Portion		MGD				
	Total Domestic Loading of Pollutant:	2.296836	pounds per	r day			
В.	CALCULATION OF HEADWORKS						
	LOADING FOR:	Boron					
1	Inhibition of Activated Sludge Process						
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A.	mg/i				
	Influent Limiting Mass Loading:	#VALUE!	pounds pe	r day			
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality	]			
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run		mgd				
	Max. Q of Effluent	0.65	mgd				
	Dilution Factor	1					
	Limiting WQ Concentration	N.A.	mg/l				
	Maximum Effluent Conc.	#VALUE!					
	Reduction of Pollutant in POTW			Plant Analyses			
	Maximum Influent Conc.	#VALUE!					
	Influent Mass Loading	#VALUE!	pounds pe	r day			
	· · ·						
3	Max. Allowable Mass Loading to Prote	ct Effluent Sp	prayfield				
		Long-term			Short-term		
	Maximum Effluent Concentration		mg/l			mg/i	
	Reduction of Pollutant in POTW	0%			0		
	Maximum Influent Conc.		mg/l			mg/l	
	Influent Mass Loading	5.6295	pounds pe	r day	15.012	pounds per	day
	····						
4	Max. Allowable Mass Loading to Meet						
	Limiting Concentration	N.A.	mg/kg	dry solids			
	Sludge Flow to Disposal						
	(wet solids):		cf/day	(design)			-
		7831.56					
		29642.455					
		29642.455	kg/day				
				· · · · · · · · · · · · · · · · · · ·			
	Final solids concentration	4%					
	Sludge Flow to Disposal	4%		· ·			
	Sludge Flow to Disposal (dry basis)	4% 1185.6982	kg/day	•			
	Sludge Flow to Disposal	4% 1185.6982 #VALUE!	kg/day mg/day				
	Sludge Flow to Disposal (dry basis)	4% 1185.6982 #VALUE!	kg/day	¥			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day Ibs. per da	y			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day Ibs. per da				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day Ibs. per da				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day Ibs. per da				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day Ibs. per da Ibs. per da	y	Short-term		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day lbs. per da lbs. per da	y y	Short-term	lbs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	у У У У		lbs. per day lbs. per day	, ,
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	у У У У		lbs. per day lbs. per day lbs. per day	i i
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	15.012	Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	15.012	lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	15.012	Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	15.012	Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	4% 1185.6982 #VALUEI #VALUEI 0% #VALUEI 5.6295 5.6295	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	15.012 15.012	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	4% 1185.6982 #VALUEI #VALUEI 0% #VALUEI 5.6295 5.6295	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	15.012 15.012	Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	4% 1185.6982 #VALUE! 0% #VALUE! 5.6295 5.6295	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	15.012 15.012 15.012	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	4% 1185.6982 #VALUE! 0% #VALUE! 5.6295 5.6295	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	15.012 15.012 15.012	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
с.	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	4% 1185.6982 #VALUEI #VALUEI 5.6295 5.6295 5.6295 2.296836	kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	4% 1185.6982 #VALUEI #VALUEI 5.6295 5.6295 5.6295 2.296836	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	4% 1185.6982 #VALUEI #VALUEI 5.6295 5.6295 5.6295 2.296836	kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	4% 1185.6982 #VALUEI 0% #VALUEI 5.6295 5.6295 5.6295 2.296836 3.332664	kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	4% 1185.6982 #VALUEI 0% #VALUEI 5.6295 5.6295 5.6295 2.296836 3.332664	kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	4% 1185.6982 #VALUEI #VALUEI 5.6295 5.6295 5.6295 2.296836 3.332664 4.44	kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516 16.94	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE! 5.6295 5.6295 5.6295 2.296836 3.332664 4.44 0.34	kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516 16.94	Ibs. per day Ibs. per day mg/I	

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**BOD** BOD limits were based on the original design criteria for the facility and on background testing performed by the City. The purpose of this limitation is to ensure that the existing aeration system is not overloaded.

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Pollutant:	BOD				
Unutarit.					
A.	BACKGROUND INFORMATION				
	Pollutant of Concern	BOD			
	Avg. Background Conc.:	225	mg/l	(routine tes	ting)
	Industrial Contribution:	10%			
	Plant Design Capacity:	0.9	MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Pollutant:	1519.965	pounds per	day	
3,	CALCULATION OF HEADWORKS				
	LOADING FOR:	BOD			
1	Inhibition of Activated Sludge Process	3			
				····	
	Inhibiting Concentration:		mg/l		
	Influent Limiting Concentration:		mg/i		
	Influent Limiting Mass Loading:	2251.8	pounds per	day	
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
			<u> </u>		
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd		<b> </b>
	Dilution Factor	1			
· · · · · · · · · · · · · · · · · · ·	Limiting WQ Concentration	N.A.	mg/l		
	Maximum Effluent Conc.	#VALUE!			
	Reduction of Pollutant in POTW		based on F	lant Analys	ies .
	Maximum Influent Conc.	#VALUE!			
	Influent Mass Loading	#VALUE!	pounds per	day	
	Max. Allowable Mass Loading to Prot	act Effluent S	i proveloid		
3	Max. Anowable Mass Loading to Prot	ect Enident S			
	Maximum Effluent Concentration	N.A.	mg/l		
	Reduction of Pollutant in POTW		based on F	lant Analys	
	Maximum Influent Conc.	#VALUE	mg/l	ant Analys	
	Influent Mass Loading		pounds per	r dav	
	Initiation Mass Loading	#VALUE:	pounds per	uay	
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal	N.A.	mgrkg	diy solida	
	(wet solids):	1047	cf/day	(design)	
		7831.56		(doolgii)	
		29642.455	1/day		
		29642.455			
	Final solids concentration				
	Final solids concentration Sludge Flow to Disposal	4%			
	Sludge Flow to Disposal	4%			
	Sludge Flow to Disposal (dry basis)	4% 1185.6982	kg/day		
	Sludge Flow to Disposal	4% 1185.6982 #VALUE!	kg/day mg/day	y	
	Sludge Flow to Disposal (dry basis)	4% 1185.6982 #VALUE!	kg/day	y	
	Sludge Flow to Disposal (dry basis)	4% 1185.6982 #VALUE!	kg/day mg/day lbs. per da	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	4% 1185.6982 #VALUE! #VALUE!	kg/day mg/day lbs. per da		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	4% 1185.6982 #VALUE! #VALUE! 0%	kg/day mg/day Ibs. per da		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	4% 1185.6982 #VALUE! #VALUE! 0%	kg/day mg/day Ibs. per da		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	kg/day mg/day Ibs. per da	y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 2251.8 #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE!	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount	4% 1185.6982 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! 2251.8	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	4% 1185.6982 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! 2251.8	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	4% 1185.6982 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! 2251.8	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	4% 1185.6982 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! 2251.8	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! 2251.8 2251.8 1519.965	kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! 2251.8 2251.8 1519.965	kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! 2251.8 2251.8 1519.965	kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
5 5 5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	4% 1185.6982 #VALUE! 0% #VALUE! 2251.8 #VALUE! 2251.8 2251.8 1519.965 731.835	kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! 2251.8 2251.8 1519.965 731.835 975	kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! 2251.8 2251.8 1519.965 731.835 975 225	kg/day mg/day lbs. per da lbs. per da	y y y y y y y	

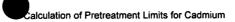
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**Cadmium** (0.0175 mg/L maximum) In previous background testing, both in 1989 and in 1995, cadmium was not detected at the detection limit. Therefore, the background concentration was established at one-half the detection limit, or 0.0005 mg/L.

Cadmium is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 1.0 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). In addition, there is a limiting water quality concentration of 0.012 mg/L for Class III surface waters. In both the 1989 and 1995 testing, cadmium was not detected in the plant influent. Therefore, it is impossible to calculate a plant specific removal efficiency for cadmium. It has been assumed, lacking specific test data, that the removal of cadmium in the POTW will be equivalent to 45%, as identified in the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual*. To meet 503 and 17-640 regulations, there are limitations on cadmium in sludge. Finally, to protect the effluent sprayfield, the effluent concentration of cadmium must be less than 0.01 mg/L.

Meeting Class III surface water standards governs, with a resulting maximum allowable value of 0.0175 mg/L. For simplicity, this has been rounded to a daily maximum of 0.018 mg/L.





Pollutant:	Cadmium				
۹.	BACKGROUND INFORMATION				
	Pollutant of Concern	Cadmium			
	Avg. Background Conc.:	0.0005		(1/2 detection	on limit)
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion	1.26	MGD		
	Total Domestic Loading of Pollutant:	0.0052542	pounds per	day	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Cadmium			
	Labilities of Anti-				
1	Inhibition of Activated Sludge Process	·			
	Inhibiting Concentration:		mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:	11 676	pounds per	r dav	
	Inident Liniting Wass Loading.	11.070	pounda per	uay	
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
4	Max. Anowable Mass Loading to Meet		Gradanty		
	7Q10 of Lake Lena Run	n	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	0.00			
	Limiting WQ Concentration	1.21E-03	ma/l		
	Maximum Effluent Conc.	0.00121	ma/l		
	Reduction of Pollutant in POTW		based on (	CERCLA M	anual
	Maximum Influent Conc.	0.0022			1
	Influent Mass Loading		pounds pe	r dav	
			perior pe		
3	Max. Allowable Mass Loading to Prote	ect Effluent Si	oravfield		
			[ <b></b>		
	Maximum Effluent Concentration	0.01	mg/l		
	Reduction of Pollutant in POTW		based on (	CERCLA M	anual
	Maximum Influent Conc.	0.0182	mg/l		
	Influent Mass Loading	0.2123	pounds pe	r day	
4	Max. Allowable Mass Loading to Meet	t Sludge Crite	ria		
	Limiting Concentration	39	mg/kg	dry solids	1
	Sludge Flow to Disposal				
	(wet solids):		cf/day	(design)	
		7831.56			
		29642.455			
		29642.455			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.70	kg/day		
	Mass Loading to Sludge	46242.23	mg/day	l	
	·····	0.1019	lbs. per da	Y	
	Domeural of Dollutent in DOTM	4501			<u> </u>
	Removal of Pollutant in POTW Allowable Influent Mass Loading	45%	lbs. per da	l	
	Allowable influent mass coauling	0.2265	ibs. per da	¥	
	Determination of Limiting Factor	-			
5	Inhibition of Activated Sludge	11 6760	lbs. per da	L	
	Class III Water Quality Standards		lbs. per da		
	Protection of Effluent Spravfield		lbs. per da		÷
	Protection of Sludge Disposal		lbs. per da		
	Limiting Amount		lbs. per da		
		0.0237	1.00. por ua	1	
C.	ALLOCATION TO INDUSTRIES	<u> </u>			1
					1
	Total Allowable Influent Loading	0.0257	lbs. per da	v	1
	Loading Attributable to Domestic			•	
	Sources	0.0053	lbs. per da	у	
	Mass Loading Available			•	
	for Industrial Loading	0.0204	lbs. per da	v	
	Max. Allowable Conc. based			1	
		1		1	
		0.0175	ima/I		
	on Mass Loading Max. Allowable Conc. based	0.0175	mg/i		
	on Mass Loading	0.0175			

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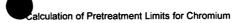
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**Chromium** (0.20 mg/L maximum) In the 1989 background testing, chromium was not detected at the detection limit. Therefore, the background concentration was established at one-half the detection limit, or 0.02 mg/L.

Chromium (hexavalent) is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 1.0 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). WEF, in *Pretreatment of Industrial Wastes, Manual of Practice FD*-3, lists an inhibitory concentration for total chromium of 1 mg/L for activated sludge and 0.25 mg/L for nitrification. In addition, there is a limiting water quality concentration of 0.011 mg/L for Class III surface waters. During the 1989 testing, chromium was not detected in the plant influent. It has been assumed, lacking specific test data, that the removal of chromium in the POTW will be equivalent to 71%, as identified in the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual*. To protect the effluent sprayfield, the effluent concentration of chromium must be less than 0.1 mg/L.

Meeting Class III surface water standards governs, with a resulting maximum allowable value of 0.1993 mg/L. For simplicity, this has been rounded to a daily maximum of 0.20 mg/L.





Pollutant:	Chromium				
۹	BACKGROUND INFORMATION				
	Pollutant of Concern	Chromium		<b>(6</b> / 1 . 1	
	Avg. Background Conc.:			(1/2 detection	on limit)
	Industrial Contribution:	10%			
	Plant Design Capacity: Domestic Portion		MGD MGD		
	Total Domestic Loading of Pollutant:		pounds per	dav	
	Total Domestic Loading of Pollutant.	0.210100	pourius per	uay	·····
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Chromium			
	Londino Port	<u>Cristing in an</u>			
1	Inhibition of Activated Sludge Process				
	Inhibiting Concentration:	1	mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:	11.676	pounds per	' day	
			(		
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			ļ
	Limiting WQ Concentration	1.10E-02			
	Maximum Effluent Conc.	0.011			1
	Reduction of Pollutant in POTW		based on C	CERCLA ma	anual
	Maximum Influent Conc.	0.0379		l	ļ
	Influent Mass Loading	0.4429	pounds pe	r day	
	Mary Allowable Mary Londing to Deete				
3	Max. Allowable Mass Loading to Prote	Enluent Sp	praytield		
_	Maximum Effluent Concentration	0.1	mg/l		
	Reduction of Pollutant in POTW		based on (		anual
	Maximum Influent Conc.	0.3448			anual
	Influent Mass Loading		pounds per	r dav	
	Indent Mass Louding	4.0202			
4	Max. Allowable Mass Loading to Meet	Sludge Criter	ria		
•	Limiting Concentration		mg/kg	dry solids	
	Sludge Flow to Disposal				1
	(wet solids):	1047	cf/day	(design)	
		7831.56	gpd	· - • · ·	
		29642.455			
		29642.455			-
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.70			
	Mass Loading to Sludge		mg/day		
		0	lbs. per da	<u>у</u>	
			1		
	Removal of Pollutant in POTW	71%			
	Allowable Influent Mass Loading		lbs. per da	Y	
-	Determination of Limiting Factor				
5	Determination of Limiting Factor Inhibition of Activated Sludge	11 6760	lbe per d-		
	Class III Water Quality Standards		lbs. per da lbs. per da		
	Protection of Effluent Sprayfield		lbs. per da		+
	Protection of Sludge Disposal		lbs. per da		
	Limiting Amount	0 4420	lbs. per da		
	Linking / intern	0.1120			
<b>D</b> .	ALLOCATION TO INDUSTRIES	1			
				+	
	Total Allowable Influent Loading	0.4429	lbs. per da	v	
	Loading Attributable to Domestic	1		e	1
	Sources	0.2102	lbs. per da	у	
	Mass Loading Available			-	1
	for Industrial Loading	0.2327	lbs. per da	у	
	Max. Allowable Conc. based				1
	on Mass Loading	0.1993	mg/l		
				Г	1
	Max. Allowable Conc. based				
<u>.</u>		0.0200	mg/l		

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**Cobalt** (0.48 mg/L average) No background testing has been performed for cobalt. Therefore, the background concentration has been assumed to be equivalent to 1/2 the detection limit for cobalt.

Cobalt is not known to inhibit activated sludge or nitrification. There are limitations on cobalt loadings in effluent reuse situations, with short-term concentrations limited to 5 mg/L and long-term concentrations limited to 0.05 mg/L (See EPA *Guidelines for Water Reuse*). There is no defined limitation on cobalt loadings for sludge disposal/reuse. Therefore, the limitation is based on protection of the effluent sprayfield. As no data is available, it is assumed that no cobalt is removed in the treatment plant, which represents a worst case scenario.

Based on protecting the effluent sprayfield, the short-term limit would be 50 mg/L. Based on input from DEP, this limit has been dropped, and the more stringent long-term limit of 0.4775 mg/L has been retained. This results in the 0.48 mg/L average specified in the ordinance.





	: Cobalt						
	BACKGROUND INFORMATION						
<b>.</b>		Cobalt					
	Pollutant of Concern	0.0025	ma/l	(1/2 detection lim	,i+\		
	Avg. Background Conc.: Industrial Contribution:	10%					
	Plant Design Capacity:		MGD				
	Domestic Portion		MGD				
	Total Domestic Loading of Pollutant:	0.026271	pounds per	rday			
8.	CALCULATION OF HEADWORKS	<u> </u>					
	LOADING FOR:	Cobalt					
=	1 Inhibition of Activated Sludge Process						
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A.	mg/l	L			
	Influent Limiting Mass Loading:	#VALUE!	pounds pe	r day			
	2 Max. Allowable Mass Loading to Meet	Class III Wat	er Quality				
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent		mgd				
	Dilution Factor	1	ľ		1 1		
	Limiting WQ Concentration	N.A.	mg/l		1		
	Maximum Effluent Conc.	N.A.	mg/l	t			
	Reduction of Pollutant in POTW	0%			1		
	Maximum Influent Conc.	#VALUE!	mg/l				
	Influent Mass Loading	#VALUE!	pounds pe	r dav	+		
		WWILCE:	pourido po				
	3 Max. Allowable Mass Loading to Prote	act Effluent Sr	ravfield				
	J Max. Allowable Mass Loading to Prote	ect Entitent of	Jayneiu		Short-term		
	Maximum Effluent Concentration	0.05					
	Maximum Effluent Concentration		mg/l			mg/l	
	Reduction of Pollutant in POTW	0%			0		
	Maximum Influent Conc.		mg/l			mg/l	
	Influent Mass Loading	0.5636	pounds pe	luay	50.30	pounds per day	у
	4 Max. Allowable Mass Loading to Mee		1		i		
			** * *				
	Limiting Concentration	N.A.	ria mg/kg	dry solids			
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg				
	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)			
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd				
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day				
· · · · · · · · · · · · · · · · · · ·	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4%	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	mg/kg cf/day gpd L/day kg/day kg/day	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI #VALUEI	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			-
· · · · · · · · · · · · · · · · · · ·	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI #VALUEI 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI #VALUEI 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	Short-term		
· · · · · · · · · · · · · · · · · · ·	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI #VALUEI 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design) y	Short-term		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUEI #VALUEI 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) y	Short-term	lbs. per day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da	(design) y y y y		lbs. per day lbs. per day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (y		lbs. per day lbs. per day lbs. per day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	
2.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y	58.38	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.0263	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.0263	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.0263 0.5575	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.0263	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838 0.5838 0.2633 0.5575 0.4775	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373 49.9775	Ibs. per day Ibs. per day	
C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based on Background Conc.	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.583	mg/kg cf/day gpd L/day kg/day mg/day ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373 49.9775 0.0025	Ibs. per day Ibs. per day mg/I	
2.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838 0.5838 0.2633 0.5575 0.4775	mg/kg cf/day gpd L/day kg/day mg/day ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373 49.9775	Ibs. per day Ibs. per day mg/l	

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**Copper** (0.28 mg/L maximum) Background testing was performed in both 1989 and in 1995 on copper. The copper concentration in 1989 averaged 0.08 mg/L, while the copper concentration in 1995 averaged 0.095 mg/L. The spreadsheet is based on the 1989 values.

Copper is documented as inhibiting both normal activated sludge and nitrification. Copper is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 1.0 mg/L, and on nitrification at 0.1 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). WEF, in *Pretreatment of Industrial Wastes, Manual of Practice FD*-3, lists an inhibitory concentration for copper of 1 mg/L for activated sludge and 0.05 to 0.48 mg/L for nitrification. In previous versions of the spreadsheet, the mid-point of the range provided by WEF was used to establish the copper limit. However, in the attached spreadsheets, based on DEP input, the inhibition concentration of 0.01272 mg/L for Class III surface waters. During the 1995 testing, the removal efficiency of copper was measured, and calculated to be 95%, based on an influent concentration of 0.10 mg/L, and an effluent concentration of copper must be less than 0.2 mg/L.

Based on the lower value of 0.1 mg/L for inhibition of nitrification, the pretreatment limit has been revised to 0.28 mg/L maximum. It should be noted, however, that even in 1995, with a measured influent copper concentration of 0.1 mg/L, the facility was meeting all effluent limitations and was achieving excellent nitrogen removal.





Pollutant:	Copper			
			[	
A	BACKGROUND INFORMATION			
	Pollutant of Concern	Copper		
	Avg. Background Conc.:		mg/l	Avg. of conc. in collection system
	Industrial Contribution:	10%		
	Plant Design Capacity:		MGD	
	Domestic Portion		MGD	
	Total Domestic Loading of Pollutant:	0.8406/2	pounds per	r day
3.	CALCULATION OF HEADWORKS	Connor		
	LOADING FOR:	Copper		
4	Inhibition of Activated Sludge Process	<u> </u>		
	Inhibition of Activated Studge Process	<b>,</b>		
				Based on Appendix L, and inhibition of
	Inhibiting Concentration:	01	mg/l	nitrification.
	Influent Limiting Concentration:		mg/l	
	Influent Limiting Mass Loading:		pounds pe	r dav
		1.1070	poundo po	
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality	
2	The second secon			
	7Q10 of Lake Lena Run	n	mgd	
	Max. Q of Effluent		mgd	
	Dilution Factor	1		
	Limiting WQ Concentration	1.27E-02	ma/i	
	Maximum Effluent Conc.	0.01272		
	Reduction of Pollutant in POTW			Plant Analyses
	Maximum Influent Conc.	0.2544		
	Influent Mass Loading		pounds pe	r dav
		1	Feeling Fe	
3	Max. Allowable Mass Loading to Prot	ect Effluent S	oravfield	
		Long-term	1	
	Maximum Effluent Concentration		mg/l	
	Reduction of Pollutant in POTW			Plant Analyses
	Maximum Influent Conc.		mg/l	
	Influent Mass Loading		pounds pe	r day
•• · · · ·				
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria	
	Limiting Concentration		mg/kg	dry solids
	Sludge Flow to Disposal			
	(wet solids):		cf/day	(design)
		7831.56		
		29642.455		
		29642.455	kg/day	
	Final solids concentration	4%		
	Sludge Flow to Disposal			
	(dry basis)	1185.6982		
	Mass Loading to Sludge	1778547.3		
		3.9210	lbs. per da	γ
	Removal of Pollutant in POTW	95%		
	Allowable Influent Mass Loading	4.1274	lbs. per da	γ
	5 Determination of Limiting Factor	Long-term	-	
	Inhibition of Activated Sludge		lbs. per da	
	Class III Water Quality Standards		lbs. per da	
	Protection of Effluent Sprayfield		lbs. per da	
	Protection of Sludge Disposal		lbs. per da	
	Limiting Amount	1.1676	Ibs. per da	ι <u>γ</u>
C.	ALLOCATION TO INDUSTRIES			
	Total Allowable Influent Loading	1.1676	lbs. per da	у
	Loading Attributable to Domestic			
-	Sources	0.8407	lbs. per da	lý
	Mass Loading Available			
	for Industrial Loading	0.3269	lbs. per da	y
	Max. Allowable Conc. based			
·				1
	on Mass Loading	0.28	mg/l	
		0.28	mg/l	
	on Mass Loading	0.08	mg/l mg/l mg/l	

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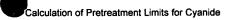
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**Cyanide** (0.073 mg/L maximum) Background testing in 1989 was inconclusive, as one test indicated a background concentration of 0.015 mg/L, and the other test indicated no cyanide present at concentrations above the detection limit. Therefore, a value of one half the detection limit has been utilized for the background concentration.

Cyanide is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 0.1 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). In addition, there is a limiting water quality concentration of 0.0052 mg/L for Class III surface waters. During the 1989 testing, cyanide was not detected in the plant influent. It has been assumed, lacking specific test data, that the removal of cyanide in the POTW will be equivalent to 56%, as identified in the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual*.

Meeting Class III surface water standards governs, with a resulting maximum allowable value of 0.0732 mg/L.





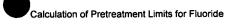
Pollutant:	Cvanide				
i oliotant.	Gyannee				
A.	BACKGROUND INFORMATION	-			
	Pollutant of Concern	Cyanide			
	Avg. Background Conc.:	0.005		(1/2 detection	n limit)
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Pollutant:	0.052542	pounds per	day	
<u> </u>					
<u>B.</u>	CALCULATION OF HEADWORKS	Cyanide			
	LOADING FOR.	Cyanide			
1	Inhibition of Activated Sludge Process				
	Initialities of a lange theorem				
	Inhibiting Concentration:	0.1	mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:		pounds per	day	
			1		
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
	7Q10 of Lake Lena Run		mgd		•
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	5.20E-03			
	Maximum Effluent Conc.	0.0052			
	Reduction of Pollutant in POTW		based on C	ERCLA m	anual
	Maximum Influent Conc.	0.0118			
	Influent Mass Loading	0.1380	pounds pe	r day	
	Allow Allowship Managing Constants				
3	Max. Allowable Mass Loading to Prote	Enluent Sp	praytield		
	Maximum Effluent Concentration	N.A.	ma/l		
	Reduction of Pollutant in POTW		mg/l based on (		2010
	Maximum Influent Conc.	#VALUE!			
	Influent Mass Loading	#VALUE!		r dav	
		#VALUE:	pounds pe	uay	
4	Max. Allowable Mass Loading to Meet	Sludge Criter	ria		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal				
	(wet solids):	1047	cf/day	(design)	
		7831.56	gpd		
		29642.455			
		29642.455			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.6982			
	Mass Loading to Sludge	#VALUE!			
		#VALUE!	ibs. per da	γ	
	Removal of Bollutest is DOTA!	F00/			
	Removal of Pollutant in POTW	56% #VALUE!			
	Allowable Influent Mass Loading	#VALUE!	lbs. per da	Y	
	Determination of Limiting Factor		-		
	Inhibition of Activated Sludge	1 1676	lbs. per da	t V	1
	Class III Water Quality Standards	0 1380	lbs. per da	<i>y</i> V	
·	Protection of Effluent Sprayfield	0.1000	lbs. per da	, V	1
	Protection of Sludge Disposal	· · ·	lbs. per da		-
	Limiting Amount	0.1380	lbs. per da		1
	······································		1	f	
C.	ALLOCATION TO INDUSTRIES				
	Total Allowable Influent Loading	0.1380	lbs. per da	у	
	Loading Attributable to Domestic		1		
	Sources	0.0525	lbs. per da	у	
<u> </u>	Mass Loading Available		1	v	
	for Industrial Loading	0.0854	lbs. per da		
	for Industrial Loading Max. Allowable Conc. based			<b>9</b>	1
	for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.0854			
	for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	0.0732	mg/l		
	for Industrial Loading Max. Allowable Conc. based on Mass Loading		mg/l		

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**Fluoride** (7.25 mg/L average) Background testing was performed in 1994 prior to accepting a new industrial customer. The background concentration in 1994 was 0.405 mg/L.

Fluoride is listed as a water quality parameter for Class III surface waters, with a limiting effluent concentration of 10 mg/L for Class III surface waters. During the 1994 testing, the removal efficiency of fluoride was measured, and calculated to be 9%. To protect the effluent sprayfield, the effluent concentration of fluoride must be less than 1 mg/L on a long-term basis, and less than 15 mg/L on a short-term basis. As the long-term effluent sprayfield loading governs, the limit has been established as an average limitation.





	Fluoride						
	BACKGROUND INFORMATION						
		Fluoride					
	Avg. Background Conc.:	0.405	ma/l	1994 testing			
	Industrial Contribution:	10%		·			
•	Plant Design Capacity:	1.4	MGD				
	Domestic Portion	1.26	MGD				
	Total Domestic Loading of Pollutant:	4.255902	pounds per	day			
	<b>*</b>						
3.	CALCULATION OF HEADWORKS						
	LOADING FOR:	Fluoride					
1	Inhibition of Activated Sludge Process						
	Inhibiting Concentration:	N.A. N.A.	mg/l				
· · · · · · · · · · · · · · · · · · ·	Influent Limiting Concentration:	N.A. #VALUE!	mg/l pounds per	dou			
	Influent Limiting Mass Loading:	#VALUE!	pounas per	day			
· · · · · · · · · · · · · · · · · · ·	Max. Allowable Mass Loading to Meet	Class III Wat	or Quality				
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quainty			· · · · · · · · · · · · · · · · · · ·	
•	7Q10 of Lake Lena Run	^	mgd				
	Max. Q of Effluent		mgd		+		
	Dilution Factor	1					
	Limiting WQ Concentration	1.00E+01	ma/l		+		
	Maximum Effluent Conc.		mg/l				····•
	Reduction of Pollutant in POTW			lant Analyses			
	Maximum Influent Conc.	10.9409					
	Influent Mass Loading	127.7462	pounds pe	r day			
3	Max. Allowable Mass Loading to Prote		orayfield				
		Long-term			Short-term		
· · · · · · · · · · · · · · · · · · ·	Maximum Effluent Concentration		mg/l			mg/l	
	Reduction of Pollutant in POTW			Plant Analyses	9%		
	Maximum Influent Conc.	1.0941			16.4835		
	Influent Mass Loading	12.7746	pounds pe	r day	192.4615	pounds per	day
			<u> </u>		·		
4	Max. Allowable Mass Loading to Meet						
	Limiting Concentration						
	Sludge Flow to Disposal	N.A.	mg/kg	dry solids			
	Sludge Flow to Disposal						
	Sludge Flow to Disposal (wet solids):	1047	cf/day	(design)			
		1047 7831.56	cf/day gpd				
		1047 7831.56 29642.455	cf/day gpd L/day				
	(wet solids):	1047 7831.56 29642.455 29642.455	cf/day gpd L/day kg/day				
	(wet solids):	1047 7831.56 29642.455	cf/day gpd L/day kg/day				
	(wet solids):	1047 7831.56 29642.455 29642.455	cf/day gpd L/day kg/day				
	(wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.455 29642.455 4%	cf/day gpd L/day kg/day kg/day				
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE!	cf/day gpd L/day kg/day kg/day mg/day	(design)			
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE!	cf/day gpd L/day kg/day kg/day	(design)			
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE!	cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design)			
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1	cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design)			
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9%	cf/day gpd L/day kg/day mg/day Ibs. per da	(design)			
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9%	cf/day gpd L/day kg/day mg/day Ibs. per da	(design)	Short-term		
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9%	cf/day gpd L/day kg/day mg/day Ibs. per da	(design)	Short-term	lbs. per day	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da	(design) y y y	127.7462	lbs. per day lbs. per day	,
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y	127.7462	lbs. per day lbs. per day lbs. per day	,
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9% #VALUE1 127.7462 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	,
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9% #VALUE1 127.7462 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day	,,,,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9% #VALUE1 127.7462 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE1 #VALUE1 9% #VALUE1 127.7462 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (y	127.7462 192.4615 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	, , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (y	127.7462 192.4615 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day	, , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	,, , ,, , ,, , ,, , ,, , ,, , , , , , , , , , , , , , , , , , , ,
5 C.	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	,,,,,,,,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	, , , , , , , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	, , , , , , , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559 8.5187	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	, , , , , , , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	, , , , , , , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559 8.5187 7.2959	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903 105.7642	Ibs. per day Ibs. per day	, , , , , , , , ,
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.455 29642.455 4% 1185.70 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559 8.5187	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903	Ibs. per day Ibs. per day mg/I	, , , , , , , , ,

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**Lead** (0.011 mg/L maximum) Background testing was performed in 1989 for lead, with a resultant background concentration of 0.0105 mg/L.

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Lead is documented as inhibiting both normal activated sludge and nitrification. Copper is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 0.1 mg/L, and on nitrification at 0.5 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). In addition, there is a limiting water quality concentration of 0.00355 mg/L for Class III surface waters. During the 1989 testing, the removal efficiency of lead was measured, and calculated to be 57%. To protect the effluent sprayfield, the effluent concentration of copper must be less than 5 mg/L. Finally, it is necessary to limit the concentration of lead in sludge to 300 mg/kg to protect the sludge disposal.

The limiting factor is the Class III water quality standard, which would indicate that the City has no capacity for additional discharges of lead. Therefore, the program limit has been established at a level equal to the background concentration in the system, or 0.011 mg/L maximum.



0-11-144-	Lood				
Pollutant:	Lead				
	BACKGROUND INFORMATION				
<b>\</b>	Pollutant of Concern	Lead			
	Avg. Background Conc.:	0.0105	ma/l	Previous T	estina
	Industrial Contribution:	10%		11010001	Coung
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Pollutant:		pounds per	dav.	
	Total Domestic Loading of Foliatant.	0.1100002	pounds per	ully	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Lead			
	LOADING FOR.	Leau			
	Inhibition of Activated Sludge Proces	¢			
	Inhibition of Activated Siddge Froces	s 			
	Inhibiting Concentration:	0.1	mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:		pounds per	dav	
	Initident Limiting Wass Loading.	1.1070	pounus per	uay	
	Mary Allowable Mana Londing to Mar				
2	Max. Allowable Mass Loading to Mee		ter Quality		
		-			
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	3.55E-03			ļ
	Maximum Effluent Conc.	0.00355	mg/l		L
	Reduction of Pollutant in POTW	57%	based on F	Plant Analys	es
	Maximum Influent Conc.	0.0083			
	Influent Mass Loading	0.0964	pounds per	r day	
3	Max. Allowable Mass Loading to Pro	tect Effluent S	prayfield		
	Maximum Effluent Concentration		mg/l		
	Reduction of Pollutant in POTW		based on F	Plant Analys	ses
	Maximum Influent Conc.	11.6279	mg/l		
	Influent Mass Loading	135.7674	pounds pe	r day	
4	Max. Allowable Mass Loading to Mee	et Sludge Crite	eria		
	Limiting Concentration	300	mg/kg	dry solids	
	Sludge Flow to Disposal			ĺ	
	(wet solids):		cf/day	(design)	
		7831.56			
		29642.455	∫L/day		
		29642.455	kg/day		
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.6982	kg/day		
	Mass Loading to Sludge	355709.46	mg/day		
		0.7842	lbs. per da	y	_
	Removal of Pollutant in POTW	57%			
	Allowable Influent Mass Loading	1.3758	lbs. per da	y	
	<b>~</b>				
5	Determination of Limiting Factor				
	Inhibition of Activated Sludge	1.1676	lbs. per da	у	
	Class III Water Quality Standards		lbs. per da		
	Protection of Effluent Sprayfield	135,7674	lbs. per da	v	
	Protection of Sludge Disposal		lbs. per da		
	Limiting Amount		lbs. per da		
	· · · · · · · · · · · · · · · · · · ·			1	
D.	ALLOCATION TO INDUSTRIES		<u> </u>		
					<u> </u>
	Total Allowable Influent Loading	0.0964	lbs. per da	v	<u> </u>
	Loading Attributable to Domestic			<b>.</b>	
	Sources	0.1103	lbs. per da	v	
	Mass Loading Available	0.1100		/	<u> </u>
	for Industrial Loading	_0.0120	lbs. per da	v	
	Max. Allowable Conc. based	-0.0139	nos. per ua	ł	
	on Mass Loading	_0.0140	ma/l		
	Max. Allowable Conc. based	-0.0119	ing/i		
		0.0405	ma/l		
	on Background Conc.	0.0105			·
	Program Limit	0.0105			

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**Manganese** (3.0 mg/L maximum) No background testing has been performed for manganese. Therefore, the background concentration has been assumed to be equivalent to 1/2 the detection limit for manganese as outlined in Table 3111:1 of the 1992 Edition of *Standard Methods for the Examination of Water and Wastewater*.

Manganese is identified in the EPA document *Guidance Manual for Preventing Interference at POTW's* (September 1987) as inhibitory to activated sludge at concentrations greater than 10 mg/L. There are limitations on manganese loadings in effluent reuse situations, with long-term concentrations limited to 0.2 mg/L (See EPA *Guidelines for Water Reuse*). There is no defined limitation on manganese loadings for sludge disposal/reuse. Therefore, the limitation is based on protection of the effluent sprayfield. As no plant-specific data is available, it is assumed, based on the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual*, that 33% is removed in the treatment plant.

Based on protecting the effluent sprayfield, the long-term limit is 2.94 mg/L. For simplicity sake, this has been rounded up to a long-term limit of 3 mg/L.





Pollutant:	Manganese				
A	BACKGROUND INFORMATION				
<b>.</b>	Pollutant of Concern	Manganese			
	Avg. Background Conc.:	0.005	ma/i	(Assumed)	
	Industrial Contribution:	10%		(100011100)	
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Pollutant:		pounds per	dav	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Manganese			
		,			
1	Inhibition of Activated Sludge Process	,			
	<b>_</b>	1			
	Inhibiting Concentration:	10	mg/l		
	Influent Limiting Concentration:	10	mg/l		
	Influent Limiting Mass Loading:		pounds per	r day	
			· ·		
2	Max. Allowable Mass Loading to Meet	Class III Wa	er Quality		
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	N.A.	mg/l		
	Maximum Effluent Conc.	-	mg/l	····	
	Reduction of Pollutant in POTW			CERCLA Manua	l
	Maximum Influent Conc.		mg/l		
	Influent Mass Loading	#VALUE!	pounds pe	r dav	
	<b>0</b>		ľ		
3	Max. Allowable Mass Loading to Prote	ect Effluent S	orayfield		
		Long-term			
	Maximum Effluent Concentration	0.2	mg/l		
	Reduction of Pollutant in POTW	33%	Based on (	CERCLA Manua	al
	Maximum Influent Conc.	0.2985	mg/l		
	Influent Mass Loading	3.4854	pounds pe	r day	
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal				
	(wet solids):		cf/day	(design)	
		7831.56			
		29642.455			
		29642.455			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.70			
	Mass Loading to Sludge	#VALUE!			
		#VALUE!	lbs. per da	¥.	
	Removal of Pollutant in POTW	33%			L
<u></u>	Allowable Influent Mass Loading	#VALUE!	lbs. per da	У	
					L
5	Determination of Limiting Factor	Long-term			
	Inhibition of Activated Sludge	116.76	lbs. per da		
	Class III Water Quality Standards		lbs. per da		
	Protection of Effluent Sprayfield	3.4854	lbs. per da		
	Protection of Sludge Disposal		lbs. per da		
	Limiting Amount	3.4854	lbs. per da	¥	
<b>C</b> .	ALLOCATION TO INDUSTRIES				
		0.4054	lba saut	<u> </u>	
	Total Allowable Influent Loading	3.4854	lbs. per da	У	
	Loading Attributable to Domestic				
	Sources	0.0525	lbs. per da	у	
	Mass Loading Available				
	for Industrial Loading	3.4328	ibs. per da	у	-
	Max. Allowable Conc. based				
	on Mass Loading	2.9401	mg/l		
	Max. Allowable Conc. based				
	on Background Conc.	0.0050			
	Program Limit	2.9401			

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**Mercury** (0.0001 mg/L maximum) In previous background testing, both in 1989 and in 1995, mercury was not detected at the detection limit. In the 1989 testing, the detection limit was 0.0001 mg/L, while in the 1995 testing, the detection limit was 0.0002 mg/L due to differences in labs. The background concentration was established at one-half the higher detection limit, or 0.0001 mg/L.

Mercury is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 0.1 mg/L (see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). In addition, there is a limiting water quality effluent concentration of  $1.20 \times 10^5$  mg/L for Class III surface waters. In both the 1989 and 1995 testing, mercury was not detected in the plant influent. Therefore, it is impossible to calculate a plant specific removal efficiency for mercury. It has been assumed, lacking specific test data, that the removal of mercury in the POTW will be equivalent to 53%, as identified in the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual.* To meet 503 and 17-640 regulations, there are also limitations on mercury in sludge.

Meeting Class III surface water standards governs. However, the data would indicate that the system has no capacity for additional mercury. Therefore, the program limit has been set at 1/2 the detection limit (which equals the assumed background concentration) or 0.0001 mg/L.





	Mercury					
A	BACKGROUND INFORMATION					
	Pollutant of Concern	Mercury		A	240-401	
	Avg. Background Conc.: Industrial Contribution:	0.0001		Assumed (	1/2 of D.L	
	Plant Design Capacity:		MGD		-	
	Domestic Portion		MGD			
	Total Domestic Loading of Pollutant:		pounds per	day		
В.	CALCULATION OF HEADWORKS					
	LOADING FOR:	Mercury				
•	Inhibition of Activated Sludge Process					
I	Initibilition of Activated Studge Process					
	Inhibiting Concentration:	. 0.1	mg/l			
	Influent Limiting Concentration:		mg/l			
	Influent Limiting Mass Loading:	1.1676	pounds per	day		
			an Ourslitu			
2	Max. Allowable Mass Loading to Meet		er Quality			
	7Q10 of Lake Lena Run	n	mgd			
	Max. Q of Effluent		mgd			
	Dilution Factor	1				
	Limiting WQ Concentration	1.20E-05				
	Maximum Effluent Conc.	0.000012				
	Reduction of Pollutant in POTW		based on C	CERCLA M	anual	
	Maximum Influent Conc.	2.553E-05	pounds pe	dav		
		0.0002981	pounds per	uay		
3	Max. Allowable Mass Loading to Prote	ct Effluent Sp	brayfield			
-	Maximum Effluent Concentration	N.A.	mg/l			
	Reduction of Pollutant in POTW		based on (		anual	
	Maximum Influent Conc.	#VALUE! #VALUE!	pounds pe	r dav		
			poundo po			
4	Max. Allowable Mass Loading to Meet	Sludge Criter	ria			
	Limiting Concentration	17	mg/kg	dry solids		
	Sludge Flow to Disposal	10.17				1
	(wet solids):	7831.56	cf/day	(design)		
		29642.455	l /dav			
		29642.455	kg/day			
	Final callele concentration	4%				
	Final solids concentration	470				
	Sludge Flow to Disposal					
	Sludge Flow to Disposal (dry basis)	1185.70	kg/day			
	Sludge Flow to Disposal	1185.70 20156.87	mg/day			
	Sludge Flow to Disposal (dry basis)	1185.70 20156.87		y		
	Sludge Flow to Disposal (dry basis)	1185.70 20156.87	mg/day lbs. per da	y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1185.70 20156.87 0.0444 53%	mg/day lbs. per da			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1185.70 20156.87 0.0444 53%	mg/day lbs. per da			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1185.70 20156.87 0.0444 53% 0.083845	ibs, per da Ibs, per da Ibs, per da	y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	1185.70 20156.87 0.0444 53% 0.083845 1.1676	Ibs. per da	y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	1185.70 20156.87 0.0444 53% 0.083845 1.1676	ibs. per da ibs. per da ibs. per da ibs. per da	y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981	Ibs. per da	y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845	mg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y		
с.	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845	mg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1185.70 20156.87 0.0444 533% 0.083845 1.1676 0.0002981 0.083845 0.0002981	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	1185.70 20156.87 0.0444 533% 0.083845 1.1676 0.0002981 0.083845 0.0002981	mg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845 0.0002981	mg/day lbs. per da lbs. per da	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845 0.0002981	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845 0.0002981 0.0002981	mg/day lbs. per da lbs. per da	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845 0.0002981 0.0002981 0.0002981 0.0002981	mg/day ibs. per da ibs. per da	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845 0.0002981 0.0002981	mg/day ibs. per da ibs. per da	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1185.70 20156.87 0.0444 53% 0.083845 1.1676 0.0002981 0.083845 0.0002981 0.0002981 0.0002981 0.0002981	mg/day libs. per da libs. per da	y y y y y y y y		

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**Molybdenum** - Molybdenum was originally established as a pollutant of concern because of the EPA 503 regulations governing sludge disposal. Because the City has not experienced any problems with molybdenum concentrations in the sludge, and because EPA has revised the rules governing molybdenum, it is recommended that this contaminant be dropped, at least for the present time, from the City's pretreatment standards.

**Nickel** (1.75 mg/L maximum) In previous background testing in 1989 nickel was not detected at the detection limit. In the 1989 testing, the detection limit was 0.02 mg/L. The background concentration was established at one-half the detection limit, or 0.01 mg/L.

Nickel is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 1.0 mg/L and on nitrification at 0.5 mg/L(see Appendix L, *Guidance Manual for POTW Pretreatment Program Development*). WEF, in *Pretreatment of Industrial Wastes, Manual of Practice FD*-3, lists an inhibitory concentration for nickel of 1 mg/L for activated sludge and 0.25 mg/L for nitrification. In addition, there is a limiting water quality effluent concentration of 0.1696 mg/L for Class III surface waters. In both the 1989 and 1994 testing, nickel was not detected in the plant influent. Therefore, it is impossible to calculate a plant specific removal efficiency for nickel. It has been assumed, lacking specific test data, that the removal of nickel in the EPA publication *CERCLA Site Discharges to POTWS Treatability Manual*. To meet 503 and 17-640 regulations, there are also limitations on nickel in sludge. Finally, the effluent sprayfield can be impacted by effluent concentrations greater than 0.2 mg/L.

Meeting Class III surface water standards governs. Based on the estimated removal rate, the influent limitation would be 1.75 mg/L.





Pollutant:	Nickel				
۹.	BACKGROUND INFORMATION				
	Pollutant of Concern	Nickel			
	Avg. Background Conc.:		mg/l	1994 Testi	ng
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD	dau	
	Total Domestic Loading of Pollutant:	0.105084	pounds per	day	
3.	CALCULATION OF HEADWORKS				
<b>)</b> .	LOADING FOR:	Nickel			
	LOADING FOR.	NICKEI			
1	Inhibition of Activated Sludge Process				
	<b>_</b>				
	Inhibiting Concentration:	0.25	ma/l		
	Influent Limiting Concentration:	0.25	mg/l		
	Influent Limiting Mass Loading:		pounds per	day	
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
_					
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run	0	mgd		
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	1.70E-01			
	Maximum Effluent Conc.	0.1696			
	Reduction of Pollutant in POTW		based on F	Plant Analys	ses
	Maximum Influent Conc.	0.1843	mg/i	1.	
	Influent Mass Loading	2.1524	pounds per	day	
	May Allewable Mass Londing to Dest		l 		
3	Max. Allowable Mass Loading to Prote	CLEINGENLOF	Jayneiu		
	Maximum Effluent Concentration	0.2	mg/l		
	Reduction of Pollutant in POTW		based on F	l Plant Analys	200
	Maximum Influent Conc.	0.2174			
	Influent Mass Loading	2.5383	pounds per	r dav	
			F		
4	Max. Allowable Mass Loading to Meet	Sludge Crite	ria		
	Limiting Concentration	420	mg/kg	dry solids	
	Sludge Flow to Disposal				
	(wet solids):		cf/day	(design)	
		7831.56			
		29642.455			
		29642.455	kg/day		
-	Final solids concentration		kg/day		
	Sludge Flow to Disposal	29642.455 4%	kg/day		
	Sludge Flow to Disposal (dry basis)	29642.455 4% 1185.70	kg/day kg/day		
	Sludge Flow to Disposal	29642.455 4% 1185.70 497993.24	kg/day kg/day mg/day		
	Sludge Flow to Disposal (dry basis)	29642.455 4% 1185.70 497993.24	kg/day kg/day	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.455 4% 1185.70 497993.24 1.0979	kg/day kg/day mg/day lbs. per da	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.455 4% 1185.70 497993.24 1.0979 8%	kg/day kg/day mg/day lbs. per da		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.455 4% 1185.70 497993.24 1.0979 8%	kg/day kg/day mg/day lbs. per da		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.455 4% 1185.70 497993.24 1.0979 8%	kg/day kg/day mg/day lbs. per da		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449	kg/day kg/day mg/day lbs. per da	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919	kg/day kg/day mg/day lbs. per da lbs. per da	y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524	kg/day kg/day mg/day lbs. per da lbs. per da	y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5 5 C.	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234 2.1524 2.1524	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234 2.1524 2.1524	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234 2.1524 2.1524 0.1051	kg/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234 2.5383 13.7234 2.1524 2.1524	kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.1524 2.5383 13.7234 2.1524 2.1524 0.1051 2.0474	kg/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max, Allowable Conc. based on Mass Loading	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.919 2.1524 2.5383 13.7234 2.5383 13.7234 2.1524 2.1524	kg/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.455 4% 1185.70 497993.24 1.0979 8% 13.723449 2.1524 2.5383 13.7234 2.1524 2.1524 0.1051 2.0474	kg/day mg/day lbs. per da lbs. per da	y y y y y y y	

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**Selenium**: There is insufficient data to validate the pretreatment limit for selenium. In addition, there has been no indication that selenium is a pollutant of concern for the City. Therefore, it is recommended that the pretreatment limit be dropped, at this time, and that the City test the facility's influent and effluent, as well as two background samples, for selenium concentrations.

**Silver** (0.005 mg/L maximum) Background testing was performed in both 1989 and in 1995 on silver. The silver concentration in 1989 was below detection limits on both samples. The detection limit in 1989 was 0.01 mg/L. In 1995 the silver concentration was again below detection limits, with one sample having a detection limit of 0.0002 mg/L and the other having a detection limit of 0.0001 mg/L. Because no silver has been detected, the average background concentration has been established at 1/2 the minimum detection limit.

Silver is documented as inhibiting normal activated sludge at concentrations of 0.25 mg/L in *Pretreatment of Industrial Wastes, Manual of Practice FD*-3. In addition, there is a limiting water quality effluent concentration of  $7 \times 10^{-5}$  mg/L for Class III surface waters. During both the 1989 and the 1995 testing, silver was not detected at the plant influent. Therefore, the removal of silver can not be determined on a plant specific basis. DEP had previously provided a removal efficiency for silver of 88%. This value has been utilized in the spreadsheets.

With the surface water quality criteria limiting, the effluent limitation for silver is 0.00538 mg/L.





Pollutant:	Silver				
•	BACKGROUND INFORMATION				
A	Pollutant of Concern	Silver			
	Avg. Background Conc.:	0.00005	ma/l	1/2 detection	n limit
	Industrial Contribution:	10%		72 4010000	
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Polutant:		pounds per	day	
	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	······	
B.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Silver			
		L			
1	Inhibition of Activated Sludge Proces	S			
		0.05			
	Inhibiting Concentration:		mg/l		
	Influent Limiting Concentration: Influent Limiting Mass Loading:		mg/l pounds per	day	
	Induent Limiting Mass Loading.	2.919	pounds per	uay	
· · · · · · · · · · · · · · · · · · ·	Max. Allowable Mass Loading to Me	t Class III Ws	ter Quality		
	Wax. Allowable Wass Loading to Met				
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	7.00E-05	mg/l		
	Maximum Effluent Conc.	0.00007	mg/l		
	Reduction of Pollutant in POTW	88%	DEP-Provi	ded Nos.	
	Maximum Influent Conc.	0.0005833	mg/l		
	Influent Mass Loading	0.006811	pounds pe	r day	
		L			
3	Max. Allowable Mass Loading to Pro	tect Effluent S	Sprayfield		
	Maximum Effluent Concentration	N.A.	mg/l		
	Reduction of Pollutant in POTW	88%			
	Maximum Influent Conc. Influent Mass Loading	#VALUE! #VALUE!	mg/i pounds pe	r dav	
	Indent Mass Loading	#VALUE:	pounds pe		
4	Max. Allowable Mass Loading to Me	et Sludge Crit	eria		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal				
	(wet solids):	1047	cf/day	(design)	
		7831.56			
		29642.455			
		29642.455			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.6982			
	Mass Loading to Sludge	#VALUE!		L	<u> </u>
		#VALUE!	lbs. per da	Y	
	Removal of Pollutant in POTW	88%			
	Allowable Influent Mass Loading	#VALUE!	lbs. per da	v	
				1	+
5	Determination of Limiting Factor		1		1
	Inhibition of Activated Sludge	2.919	lbs. per da	y	
	Class III Water Quality Standards		lbs. per da		
	Protection of Effluent Sprayfield		lbs. per da		
	Protection of Sludge Disposal		lbs. per da	y	
	Limiting Amount	0.006811	lbs. per da	y	
C.	ALLOCATION TO INDUSTRIES				
			<u> </u>	L	ļ
	Total Allowable Influent Loading	0.00681	lbs. per da	у	
	Loading Attributable to Domestic	0.00050	libe need-		
	Sources Mass Loading Available	0.00053	lbs. per da	у	
		0.00000	libe per d-		
	for Industrial Loading Max. Allowable Conc. based	0.00629	lbs. per da	y	
	on Mass Loading	0.00538	mal		
	Max, Allowable Conc. based	0.00038			-
	on Background Conc.	0.00005	ma/l		
			1		
	Program Limit	0.00538	i ma/i	}	

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**Total Toxic Organics** (4 mg/L maximum): The limitation on total toxic organics, as measured by the combination of EPA methods 624 and 625, is an expansion of the original phenols limitation, and is based on that original limitation. Some limited testing was performed in 1995, which indicated a total toxic organics concentration in the background samples of approximately 12 ug/L. This is consistent with the 1989 testing, which indicated background total phenols concentrations of 13 ug/L.

The various toxic organic substances have differing inhibitory concentrations for activated sludge. However, the most stringent case is phenol, which inhibits nitrification at concentrations of 4 mg/L (*Pretreatment of Industrial Wastes, Manual of Practice FD*-3). In addition, there is a limiting water quality effluent concentration for Class III surface waters. During the 1989 testing, a plant specific removal efficiency for phenols of 78% was calculated. Again, this correlates well with 1995 data, which indicates a removal of over 90%. The lower value has been used in the spreadsheets.

Based on the data, the surface water quality criteria governs and results in a limiting concentration of 4.375 mg/L. For simplicity, this has been rounded to 4 mg/L.



Pollutant:	Total Toxic Organics					·····
A	BACKGROUND INFORMATION	Total Taxia C	)	4/625		<u> </u>
	Pollutant of Concern	Total Toxic C 0.012		1995 testir	20	
	Avg. Background Conc.: Industrial Contribution:	10%	mg/i	1995 (65(1)	iy i	
<u> </u>	Plant Design Capacity:		MGD			
	Domestic Portion		MGD		· · · · · · · · · · · · · · · · · · ·	
	Total Domestic Loading of Pollutant:		pounds per	r day		
			P	[		
В.	CALCULATION OF HEADWORKS					
	LOADING FOR:	Total Toxic C	Organics			
1	Inhibition of Activated Sludge Process					
				(h	Dharala	
	Inhibiting Concentration:		mg/l mg/l	(based on see WEF I		
	Influent Limiting Concentration: Influent Limiting Mass Loading:		pounds per		wanuar)	
	Initiaent Linitary Wass Loading.	40.104	pounos per			
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		1	
	7Q10 of Lake Lena Run	0	mgd		1	
L	Max. Q of Effluent		mgd		1	
	Dilution Factor	1				
	Limiting WQ Concentration	1.00E-01	mg/l			
	Maximum Effluent Conc.	0.1	mg/l			
	Reduction of Pollutant in POTW			Plant Analys	ses for Phen	ols
	Maximum Influent Conc.	0.4545				
	Influent Mass Loading	5.3073	pounds pe	r day		
			6.11	<u> </u>		
3	Max. Allowable Mass Loading to Prote	ect Effluent Sp	prayfield			
	Maximum Effluent Concentration	N.A.				
<u> </u>	Maximum Effluent Concentration Reduction of Pollutant in POTW		mg/l based on F	lant Anahu		
	Maximum Influent Conc.	#VALUE!	mg/l	ant Analys	565	
	Influent Mass Loading	#VALUE!	pounds pe	r dav		
			P P-			
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria :			
	Limiting Concentration	N.A.	mg/kg	dry solids		
	Sludge Flow to Disposal					
	(wet solids):		cf/day	(design)		
		7831.56				
· · · · · · · · · · · · · · · · · · ·		29642.455				
	Final solids concentration	29642.455				
	Sludge Flow to Disposal	4 70				
	(dry basis)	1185.70	ka/day			1
	Mass Loading to Sludge	#VALUE!				
		#VALUE!		v		
				1	-	
	Removal of Pollutant in POTW	78%	1		1	
	Allowable Influent Mass Loading	#VALUE!	lbs. per da	у		
			1			
	5 Determination of Limiting Factor		1	L		
				V		
	Inhibition of Activated Sludge		lbs. per da			1
	Class III Water Quality Standards		lbs. per da	y		
	Class III Water Quality Standards Protection of Effluent Sprayfield		lbs. per da Ibs. per da	у У		
	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	5.3073	lbs. per da lbs. per da lbs. per da	y y y		
	Class III Water Quality Standards Protection of Effluent Sprayfield	5.3073	lbs. per da Ibs. per da	y y y		
	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	5.3073	lbs. per da lbs. per da lbs. per da	y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	5.3073	lbs. per da lbs. per da lbs. per da	y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	5.3073	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	5.3073	lbs. per da lbs. per da lbs. per da	y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	5.3073 5.3073 5.3073	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	5.3073 5.3073 5.3073	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	5.3073 5.3073 5.3073 0.1261	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	5.3073 5.3073 5.3073 0.1261	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	5.3073 5.3073 5.3073 0.1261	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	5.3073 5.3073 5.3073 0.1261 5.1812	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y		
C.	Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	5.3073 5.3073 5.3073 0.1261 5.1812 4.4375	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da mg/l	y y y y y y		

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**Vanadium**: There is insufficient data to validate the pretreatment limit for vanadium. In addition, there has been no indication that vanadium is a pollutant of concern for the City. Therefore, it is recommended that the pretreatment limit be dropped, at this time, and that the City test the facility's influent and effluent, as well as two background samples, for vanadium concentrations.

**Zinc** (1.5 mg/L maximum) Background testing was performed in both 1989 and in 1995 on zinc. The zinc concentration in 1989 averaged 0.165 mg/L, while the zinc concentration in 1995 averaged 0.145 mg/L. The spreadsheet is based on the 1995 values.

Zinc is documented as inhibiting both normal activated sludge and nitrification. Zinc is listed by the EPA as having an inhibitory effect on activated sludge at concentrations of 1.0 mg/L, and on nitrification at 0.1 mg/L (see Appendix L, Guidance Manual for POTW Pretreatment Program Development). WEF, in Pretreatment of Industrial Wastes, Manual of Practice FD-3, lists an inhibitory concentration for zinc of 0.3 mg/L for activated sludge and 0.08 mg/L for nitrification. However, this would indicate that the system is presently inhibited, despite its continued compliance with effluent limitations. Therefore, the inhibition concentration has been set at the mid-point of the range reported by WEF, or 0.29 mg/L. In addition, there is a limiting water quality effluent concentration of 0.114 mg/L for Class III surface waters. During the 1989 testing, the removal efficiency of zinc was measured, and calculated to be 83%, based on an influent concentration of 0.03 mg/L, and an effluent concentration below detection limits. To protect the effluent sprayfield, the effluent concentration of zinc must be less than 2 Finally, to protect sludge disposal, the sludge solids can not have a zinc ma/L. concentration greater than 2800 mg/kg.

Based on the value of 0.29 mg/L for inhibition of nitrification, the pretreatment limit has been established at 1.595 mg/L maximum. For convenience, this has been rounded to 1.5 mg/L





Pollutant:	Zinc						
۱.	BACKGROUND INFORMATION						
	Pollutant of Concern	Zinc					
	Avg. Background Conc.:	0.145	mg/l	Past Testin	ng		
	Industrial Contribution:	10%			ľ		
	Plant Design Capacity:		MGD				
	Domestic Portion		MGD				
	Total Domestic Loading of Pollutant:		pounds per	dav			
·	Total Domestic Loading of Folidiant.	1.5257	pounds per	uay			
	CALCULATION OF HEADWORKS						
B	LOADING FOR:	Zinc					
	LOADING FOR.	ZINC					
	habitation of Astinated Obder Deserve						
1	Inhibition of Activated Sludge Process						
					I	(0.00.1-0.1	
	Inhibiting Concentration:		mg/l	(VVEF repo	rts values o	10.08 to 0.3	s mg/i)
	Influent Limiting Concentration:		mg/l	L			
	Influent Limiting Mass Loading:	3.3860	pounds per	r day			
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality				
	7Q10 of Lake Lena Run		mgd				
	Max. Q of Effluent	0.65	mgd				
	Dilution Factor	1					
	Limiting WQ Concentration	1.14E-01	mg/l				
	Maximum Effluent Conc.	0.114		1			
	Reduction of Pollutant in POTW			lant Analys	es		
	Maximum Influent Conc.	0.6706					
	Influent Mass Loading		pounds pe	r dav			
		1.0200	pounds po				
2	Max. Allowable Mass Loading to Prote	ot Effluent Sr	raufield	· · ·			
	Max. Allowable Mass Loading to Flote	Ci Ellideni Sp	aylieiu	····-	-		
	Movie Effluent Concentration						
	Maximum Effluent Concentration		mg/l				
	Reduction of Pollutant in POTW			Plant Analys	ses		
	Maximum Influent Conc.	11.7647					
	Influent Mass Loading	137.3647	pounds pe	r day			
4	Max. Allowable Mass Loading to Meet	Sludge Criter	ia				
	Limiting Concentration	2800	mg/kg	dry solids	(DEP LIMI	Г)	
	Sludge Flow to Disposal						
	(wet solids):		cf/day	(design)			
		7831.56					
		29642.455	L/day				
		29642.455	kg/day				
	Final solids concentration	4%					
	Chuden Elevete Diseased	+ /0					
	Sludge Flow to Disposal						
	Sludge Flow to Disposal (dry basis)		ko/dav				
	(dry basis)	1185.70					
		1185.70 3319954.9	mg/day				
	(dry basis)	1185.70 3319954.9		y			
	(dry basis) Mass Loading to Sludge	1185.70 3319954.9 7.3192	mg/day lbs. per da	y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1185.70 3319954.9 7.3192 83%	mg/day lbs. per da				
	(dry basis) Mass Loading to Sludge	1185.70 3319954.9 7.3192 83%	mg/day lbs. per da				
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1185.70 3319954.9 7.3192 83%	mg/day lbs. per da				
5	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	1185.70 3319954.9 7.3192 83% 8.8183	mg/day lbs. per da lbs. per da	y			
5	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	1185.70 3319954.9 7.3192 83% 8.8183 3.3860	mg/day lbs. per da lbs. per da lbs. per da	y y y			
5	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298	mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y			
5	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y			
5	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y			
5	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y			
5 5 C.	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860 1.5237	mg/day lbs. per da lbs. per da	y y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860 1.5237	mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860 1.5237 1.8623	mg/day lbs. per da lbs. per da	y y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860 1.5237	mg/day lbs. per da lbs. per da	y y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 1.5237 1.8623 1.595	mg/day lbs. per da lbs. per da	y y y y y y y y			
	(dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1185.70 3319954.9 7.3192 83% 8.8183 3.3860 7.8298 137.3647 8.8183 3.3860 3.3860 1.5237 1.8623	mg/day lbs. per da lbs. per da	y y y y y y y y			

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**Total Dissolved Solids** (1,405 mg/L maximum). This value for total dissolved solids was developed in 1994, as part of the review of the Mitco connection. It is based on background testing which indicated a present TDS level of 400 mg/L.

The only concern with total dissolved solids is long-term protection of the spray-field. Long-term TDS concentrations greater than 500 mg/L can cause damage to citrus crops (See EPA *Guidelines for Water Reuse*). Based on this, the pretreatment limit was established at 1405 mg/L.



			·		<b>}</b>
Pollutant:	Total Dissolved Solids				
A.	BACKGROUND INFORMATION				
	Pollutant of Concern	Total Dissolv			
	Avg. Background Conc.:		mg/l	1994 Testi	ng
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Pollutant:	4203.36	pounds per	day	
В.	CALCULATION OF HEADWORKS				
<b>.</b>	LOADING FOR:	Total Dissolv	ed Solids		
1	Inhibition of Activated Sludge Process				
	Inhibiting Concentration:	N.A.	mg/l	· · · ·	
	Influent Limiting Concentration:	N.A.	mg/l		
	Influent Limiting Mass Loading:	#VALUE!	pounds per	oay	
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
2	Max. Allowable Mass Loading to Meet		or laudinty		
	7Q <sub>10</sub> of Lake Lena Run	n	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	N.A.	mg/l	··· ·	
	Maximum Effluent Conc.	#VALUE!	mg/l		
	Reduction of Pollutant in POTW	0%	based on F	Plant Analys	es
	Maximum Influent Conc.	#VALUE!	mg/l	. <u>.</u>	
	Influent Mass Loading	#VALUE!	pounds per	r day	
2	Max. Allowable Mass Loading to Prote	et Effluent Sr	routiold		
3	Max. Allowable Mass Loading to Frote	CI Enident Sp			
	Maximum Effluent Concentration	500	mg/l		
	Reduction of Pollutant in POTW		based on F	lant Analys	es
	Maximum Influent Conc.	500.50			
	Influent Mass Loading	5843.84	pounds per	r day	
4	Max. Allowable Mass Loading to Meet				
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg	dry solids	
	(wet solids):	1047	cf/day	(design)	
		7831.56		(design)	
		29642.455			
		29642.455			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.6982	kg/day		
	Mass Loading to Sludge	#VALUE!			
		#VALUE!	lbs. per da	<u>у</u>	
	Removal of Pollutant in POTW	0%	1	Í	
	Allowable Influent Mass Loading	#VALUE!	lbs. per da	L	
				1	
5	Determination of Limiting Factor				
	Inhibition of Activated Sludge		lbs. per da		
	Class III Water Quality Standards		lbs. per da		
	Protection of Effluent Sprayfield	5843.84	lbs. per da		
	Protection of Sludge Disposal	E040.04	lbs. per day		· · · · · ·
	Limiting Amount	5843.84	lbs. per da	<b>y</b>	
C.	ALLOCATION TO INDUSTRIES	· · · ·		·	
·		+			
	Total Allowable Influent Loading	5843.84	lbs. per da	, Y	
	Loading Attributable to Domestic				
	Sources	4203.36	lbs. per da	у	
	Mass Loading Available				1
	for Industrial Loading	1640.48	lbs. per da	y	
	Max. Allowable Conc. based				
	on Mass Loading Max. Allowable Conc. based	1405.01	mg/l		
	on Background Conc.	400	mg/i		
	Program Limit	1405.01			
	1	1,400.01	····::::::::::::::::::::::::::::::::::	1	i.

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**Total Suspended Solids:** These values were developed from the original design criteria for the wastewater treatment plant.

**Total Nitrogen:** These values were developed from the original design criteria for the wastewater treatment plant.

**Soil Adsorption Ratio** (10 maximum). This value was developed in 1994, as part of the review of the Mitco connection. SAR is a non-conservative parameter, so it was established at the maximum allowable value for spray irrigation of citrus crops (See EPA *Guidelines for Water Reuse*).

**Total Identifiable Hydrocarbons:** This has been supplanted by the total toxic organics limitation and can be deleted.





Huburdale Program

## **Environmental Protection**

Lawton Chiles Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

July 17, 1996

Mr. John Dickson Wastewater Superintendent City of Auburndale P.O. Box 186 Auburndale, Florida 33823

Re: Pretreatment Program Proposed Local Limits Permit Number FL0021466

Dear Mr. Dickson:

The Department has reviewed your submission of revised local limits dated June 4. The review indicates that a number of comments from our January 24 letter on your previous submission have been addressed. However, as discussed during a telephone conversation between yourself and John Coates on July 15, the following additional requirements must also be addressed before the submission will fully comply with the requirements of Rule 62-625.500(2)(c), F.A.C.:

- The implementation of a four consecutive sample average limit must be technically justified by the control authority. Otherwise, it is recommended that the control authority implement only daily maximum local limits meeting the requirements of Rule 62-625.500(2)(c), F.A.C.
- Several sources of information have been used in the development of Auburndale's local limits; however, many of these are not well documented. The following information and their references must be clearly documented:
  - 1. The proposed local limits do not include a safety factor. Auburndale must provide the basis for not including a safety factor in its calculations or indicate whether other factors have been adjusted to provide uncertainty or growth allowances.
  - 2. The local limits do not contain any supporting information regarding the total industrial flow. The source used to determine that the industrial flow is 10% of the wastewater facility design flow (i.e., 140,000 gallons per day) should be indicated. If the value of 140,000 gallons per day includes an allowance for growth, then this should also be stated.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

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Mr. John Dickson July 17, 1996 Page 2

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- 3. The local limit calculations do not indicate the source for the background loading concentration data. The source for these values must be documented. Some of these values appear to be analytical detection limits. It is suggested that any data below analytical detection limits be used as one half the detection limit's value.
- 4. All of the inhibition concentrations selected for the local limit calculations do not have references. Auburndale should identify all references used for the selection of inhibition values.
- 5. A value of 300 mg/L as CaCO<sub>3</sub> was used to determine the hardness dependent water quality standards (WQS) for the local limits submitted on November 5, 1995. It now appears that the hardness value has been changed to approximately 110 mg/L for some parameters (e.g., copper). The source for the hardness value must be documented. Since the WQS are based on end-of-pipe conditions, the hardness value should represent the characteristics of Auburndale's wastewater discharge.

Once revisions are made to the draft local limits in response to the comments above, you should resubmit the revisions to the Department for preliminary approval. In addition to the local limit revisions, Auburndale should submit any other revised sections of its ordinance for preliminary approval (e.g., the section addressing hauled wastes). Upon preliminary approval of your revised local limits, you should schedule the revisions to the ordinance for formal adoption by the City of Auburndale. Following final adoption of these revisions by the city, the local limits and ordinance can be formally approved by the Department and become effective.

Your June 4 letter also transmitted minor changes to your approved enforcement response plan (ERP). The changes satisfactorily address the comment from the Department's January 4 letter following the December 6, 1995 pretreatment compliance inspection. The minor changes to your ERP only clarify your existing program requirements; therefore, these do not need to be submitted as a program modification.

If you have any questions on this correspondence or need clarification on local limit requirements, please contact John Coates or myself at the letterhead address or at (904) 488-4524.

Sincerely,

Robert E. Heilman, P.E. Pretreatment Coordinator

cc: Ed Snipes, P.E., DEP Tampa Al Herndon, P.E., USEPA Region IV Bobby M. Tillman, City of Auburndale



## City of Auburndale

AUBURNDALE, FLORIDA 33823

Office of the Director of Public Utilities

P.O. Box 186 1300 Recker Hwy. PHONE (813) 965-5549

June 4, 1996

Department of Environmental Protection Attention: Robert E. Heilman, P.E. Pretreatment Coordinator Twin Towers Office Building 2600 Blair Stone Road Tallahassee Fl 32399-2400

RE: Pretreatment Program Proposed Local Limits Permit Number FL0021466

Dear Mr. Heilman:

The City of Auburndale is requesting some revisions to its industrial pretreatment ordinance.

Attached is a copy of the proposed local limits and the backup spread sheets from Chastain-Skillman Engineering. At your request, we have added a Haul Waste Section to the ordinance and made some revisions to our enforcement response plan.

If you have any questions, please call me at (941) 965-5549.

Sincere/ly,

John Dickson Wastewater Superintendent

Enclosure



Dept. of Environmental Protection Domestic Waste Section

## UTILITIES

(b) (1) In order to protect the treatment plant from substances that may interfere with its operation, contaminate the sludge or cause a violation of its discharge permit, the following target limits are to be met at the influent to the treatment plant(s):

	SUBSTANCE	MG/1	SUBSTANCE	MG/1
a.	Cadmium	0.0005	h. Nickel	. 0.25
	Chromium (total)		i. Zinc	
c.	Chromium(hexavalent)	0.20	j. BOD5	300.0
d.	Copper	0.24	k. TSS	250.0
e.	Cyanide	0.01	1. TN	40.0
f.	Lead	0.008	m. TP	40.0
g.	Mercury (ug/l)	0.024	n. Silver	0.0006

- (2) The limits set out above may be used as a guide in design and plant control.
- (3) In order to ensure compliance with the target limits established in paragraph (b)(1) above, set standards to be met by each industrial user are established as follows:

PARAMETER	FOUR CONSECUTIVE SAMPLE AVERAGE(mg/1)	DAILY MAXIMUM(mg/l)
Antimony	. 20	40
Arsenic		0.27
Beryllium		0.0013
Boron	. 4.44	16.94
Cadmium	. 0.009	0.018
Chromium		0.20
Cobalt		• • •
Copper		1.7
Cynaide. $\ldots$ $\ldots$ $\ldots$		
Fluoride		
Lead		
Manganese	_	
Mercury		
Molybdenum		
Nickel		
Oils and grease		
Selenium		· · · -
Silver		
Total Toxic Organics		
Vanadium		• •
	• • • • • • • •	•••••••

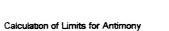
## AUBURNDALE CODE

PARAMETER	FOUR CONSECUTIVE SAMPLE AVERAGE(mg/l)	DAILY MAXIMUM(mg/l)
Zinc		1.5
CBOD5	975	1500
TSS	290	520
Total Nitrogen	••• 40 •••	80
Total Identifiable Hydrocarbon	ns 3.0	6.0
Total dissolved solids	••• 1405 •••	1405
Soil adsorption ratio	Less than 10	Less than 10.

(c) Any user discharging or anticipating a discharge of substances in his wastes within ten (10) percent or in excess of the concentrations identified in subsection 23-22(b)(3) may be classified as a significant industrial user and subject to the wastewater discharge permitting requirements of this article.

Significant industrial for users applying wastewater contribution permits may request a variance from the values identified in section 23-22(b)(3). The evaluation of requests for variances will be based on such factors as quantities of subject wastes and flows in relation to the total POTW influent flows and waste concentrations, the flow volume and velocities in sewer line, the materials utilized in the construction of the wastewater collection system, the nature of the sewage treatment process, the capacity of the POTW, the degree of treatability of wastes in the treatment plant, the quality of sludge for suitable disposal and water quality requirements of the receiving stream for the sewage treatment plant effluent. Variances, when granted, shall be specifically identified in the industrial user's wastewater contribution permit. Variances will not be granted from national standards.





Pollutant	Antimony				
A	BACKGROUND INFORMATION				
<u>4.</u>	Pollutant of Concern	Antimony	·	<u> </u>	<u> </u>
	Avg. Background Conc.:	Antimony	mg/l	(detection	limit)
	Industrial Contribution:	10%		(democrition)	
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD	<u> </u>	
	Total Domestic Loading of Pollutant:		pounds per	dav	
	Total Comesto Localing of Foldant.	1.00004	podrido por		
3.	CALCULATION OF HEADWORKS		· · ·		
	LOADING FOR:	Antimony		· · · · · · · · · · · · · · · · · · ·	
1	Inhibition of Activated Sludge Process	j	•		
		I		·	
	Inhibiting Concentration:	N.A.	mg/i	·····	
	Influent Limiting Concentration:	N.A.	mg/i		
	Influent Limiting Mass Loading:	#VALUE!	pounds per	day	
	<b>y</b>				
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
	¥.	T	[		
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd		<u> </u>
	Dilution Factor	1			1
	Limiting WQ Concentration	43	mg/i		
	Maximum Effluent Conc.		mg/l		
	Reduction of Pollutant in POTW		based on F	lant Analys	85
	Maximum Influent Conc.		mg/l	<u>/</u> _	<u> </u>
	Influent Mass Loading		pounds per	dav	
·					
3	Max. Allowable Mass Loading to Prote	ect Effluent Sc	ravfield	<u> </u>	•
. *	mat / donable made coucing to 1 to				-
	Maximum Effluent Concentration	N.A.	mg/l		
	Reduction of Pollutant in POTW		based on F	lant Analys	85
	Maximum Influent Conc.	#VALUE!			
	Influent Mass Loading		pounds per	dav	
	minute model counting	WWW.LOL.	peanes pa	<u></u>	+
	·····	1	1	1	· · · · · ·
	May Allowable Mass Loading to Mee	Sludge Criter	io		1
4	Max. Allowable Mass Loading to Mee			dry solids	· · ·
4	Limiting Concentration		na mg/kg	dry solids	
4	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg		
4	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)	 
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd		· · · ·
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day		
	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day kg/day		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4%	mg/kg cf/day gpd L/day kg/day		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day		
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day From Plant	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day From Plant	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day From Plant lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day ibs. per day ibs. per day	(design) (design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) (design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) (design)	
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5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) (design)	
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5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) (design) Testing (	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (de	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) (de	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068 1.05084	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design) (	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068 1.05084	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design) (	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068 50.2068 1.05084 49.15596	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design) (	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068 50.2068 1.05084 49.15596	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design) (	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068 1.05084 49.15596 42.1	mg/kg cf/day gpd L/day kg/day mg/day ibs. per day ibs. per day	(design) (design) (	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 50.2068 50.2068 1.05084 49.15596 42.1 0.1	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design) (	

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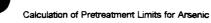




Calculation of Pretreatment Limits for Aluminum

Pollutant	Aluminum						
1	BACKGROUND INFORMATION						
	Pollutant of Concern	Aluminum			1		
	Avg. Background Conc.:	0.1	mg/i	(Assumed)			
	Industrial Contribution:	10%		<u>,                                     </u>			
	Plant Design Capacity:		MGD	· · · · · · · · · · · · · · · · · · ·	1		
	Domestic Portion		MGD		+		· · · · ·
				L			
	Total Domestic Loading of Pollutant:	1.05084	pounds per d	ay	+		
3	CALCULATION OF HEADWORKS						
	LOADING FOR:	Aluminum					
1	Inhibition of Activated Sludge Process						
					-		
	Inhibiting Concentration:	N.A.	mg/i	i			
	Influent Limiting Concentration:	N.A.	ma/i				
	Influent Limiting Mass Loading:		pounds per d	av			
	Indent Enning Mass Coacing.	WWALCE.	pounda per o	ay	<u>+</u>		
	Mary Alley while Marga I and in the Marga				<u> </u> i		
2	Max. Allowable Mass Loading to Meet	Class III vvat	erquanty				
					<u> </u>		
	7Q10 of Lake Lena Run	0	mgd		I		
	Max. Q of Effluent	0.65	mgd				
	Dilution Factor	1		[	1		
	Limiting WQ Concentration	N.A.	mg/i		1		
	Maximum Effluent Conc.	#VALUE!		j	+		
	Reduction of Pollutant in POTW		based on Pla	1			
				IIL AVREIYSES			
	Maximum Influent Conc.	#VALUE!		ļ			
	Influent Mass Loading	#VALUE!	pounds per d	ay			
					L		
3	Max. Allowable Mass Loading to Prote	ct Effluent Sp	rayfield				
		Long-term			Short-term		
	Maximum Effluent Concentration		ma/i		20	mg/l	
	Reduction of Pollutant in POTW		based on Pla	nt Analyses	0		
	· · · · · · · · · · · · · · · · · · ·						
		5		liter that your	20	ma/l	
	Maximum Influent Conc.		mg/l			mg/l	day
	Influent Mass Loading					mg/l pounds per	day
	Influent Mass Loading	58.38	mg/l pounds per d				day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet	58.38 Sludge Criter	mg/i pounds per d	ay			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	58.38	mg/l pounds per d				day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet	58.38 Sludge Criter	mg/i pounds per d	ay			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	58.38 Sludge Criter N.A.	mg/i pounds per d	ay			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	58.38 Sludge Criter N.A. 1047	mg/l pounds per d na mg/kg cf/day	ay dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	58.38 Sludge Criter N.A. 1047 7831.56	mg/i pounds per d mg/kg cf/day gpd	ay dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546	mg/i pounds per d mg/kg cf/day gpd L/day	ay dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546	mg/l pounds per d is mg/kg cf/day gpd L/day kg/day	ay dry solids		pounds per	day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546	mg/l pounds per d is mg/kg cf/day gpd L/day kg/day	ay dry solids		pounds per	day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4%	mg/l pounds per d isa mg/kg cf/day gpd L/day kg/day	ay dry solids		pounds per	day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546	mg/l pounds per d isa mg/kg cf/day gpd L/day kg/day	ay dry solids		pounds per	day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4%	mg/l pounds per d ina mg/kg cf/day gpd L/day kg/day kg/day	ay dry solids		pounds per	day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/l pounds per d ina mg/kg cf/day gpd L/day kg/day kg/day	ay dry solids		pounds per	day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day mg/day	ay dry solids		pounds per	<u>day</u>
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/l pounds per d is mg/kg cf/day gpd L/day kg/day kg/day ibs. per day	ay dry solids		pounds per	
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per d is mg/kg cf/day gpd L/day kg/day kg/day kg/day ibs. per day	ay dry solids		pounds per	
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per d is mg/kg cf/day gpd L/day kg/day kg/day ibs. per day	ay dry solids		pounds per	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/l pounds per d is mg/kg cf/day gpd L/day kg/day kg/day kg/day ibs. per day	ay dry solids	233.52		
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	ay dry solids	Short-term		
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/i pounds per d mg/kg cf/day gpd i//day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52	pounds per	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	Short-term #VALUE!	lbs. per day	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/i pounds per d mg/kg cf/day gpd i//day kg/day kg/day ibs. per day ibs. per day	ay dry solids	Short-term #VALUE!	pounds per	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! 233.52	lbs. per day	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE!	lbs. per day lbs. per day lbs. per day	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE!	lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE!	lbs. per day lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE!	lbs. per day lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! Long-term 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd i//day kg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12	pounds per	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! Long-term 58.38 58.38	mg/l pounds per d mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12	lbs. per day lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	58.38 Studge Criter N.A 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12	pounds per bounds per bs. per day bs. per day bs. per day bs. per day bs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	58.38 Studge Criter N.A 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd i//day kg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12	pounds per	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	58.38 Studge Criter N.A 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12	pounds per bounds per bs. per day bs. per day bs. per day bs. per day bs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! 150.12 1.05084	pounds per pounds per lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	58.38 Studge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! 150.12 1.05084	pounds per bounds per bs. per day bs. per day bs. per day bs. per day bs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd L/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12 1.05084 149.0692	pounds per bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading	58.38 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38 58.38	mg/i pounds per d mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! 150.12 1.05084	pounds per bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	58.38 Studge Criter N.A 1047 7831.56 29642.4546 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! #VALUE! Long-term 58.38 58.38 1.05084 57.32916 49.1	mg/i pounds per d mg/kg cf/day gpd i//day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12 150.12 150.12 150.12 127.6714	pounds per pounds per bs. per day bs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based on Background Conc.	58.38 Studge Criter N.A 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084 57.32916 49.1 0.1	mg/i pounds per d mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12 1.05084 149.0692 127.6714 0.1	pounds per pounds per lbs. per day lbs. per day	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	58.38 Studge Criter N.A 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084 57.32916 49.1 0.1	mg/i pounds per d mg/kg cf/day gpd i//day kg/day ibs. per day ibs. per day	ay dry solids	233.52 Short-term #VALUE! #VALUE! #VALUE! 150.12 150.12 150.12 150.12 127.6714	pounds per pounds per lbs. per day lbs. per day	

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ollutant			1				
	BACKGROUND INFORMATION		·				
		Arsenic				····	
	Avg. Background Conc.:	0.001	mal	(detection limit)	•		
	Industrial Contribution:	10%		· · · · · · · · · · · · · · · · · · ·			
	Plant Design Capacity:	1.4	MGD				
	Domestic Portion	1.26	MGD	1 ·····			
	Total Domestic Loading of Pollutant	0.0105084	pounds per	day			
			·····	[			
	CALCULATION OF HEADWORKS						
	LOADING FOR:	Arsenic					
1	Inhibition of Activated Sludge Process						
	Inhibiting Concentration:	0.1	mg/l				
	Influent Limiting Concentration:		mg/l				
	Influent Limiting Mass Loading:		pounds per	r dav			
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality				
			1	· · · ·			
	7Q <sub>10</sub> of Lake Lena Run		mgd				
	Max. Q of Effluent		mgd	····-			
	Dilution Factor	1		· · · · · · · · · · · · · · · · · · ·			
	Limiting WQ Concentration		mg/l				
	Maximum Effluent Conc.						· · · -
	Reduction of Pollutant in POTW		mg/l	ERCLA Manuai	<u> </u>		
	and the second		· · · · · · · · · · · · · · · · · · ·	A Manual		<u> </u>	
	Maximum Influent Conc.	0.07462687		i dov			
	Influent Mass Loading	0.07134328	pounds be				
	Max. Allowable Mass Loading to Prote			<u> </u>	<u> </u>		
3	Max. Allowable Mass Loading to Prou		Jrayneko		0	• • • •	
	Maximum Efficient Concentration	Long-term			Short-term		
	Maximum Effluent Concentration Reduction of Pollutant in POTW	0.1	mg/l	ERCLA Man.	33%	mg/l	
	Reduction of Politiant in POTVV	J 3370			1 3370	1	
	Marines and tall used Came				0.005075		
	Maximum Influent Conc.	0.14925373	mg/l		2.985075		day
	Maximum Influent Conc. Influent Mass Loading		mg/l			mg/l pounds per	day
	Influent Mass Loading	0.14925373 1.74268657	mg/i pounds per				day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet	0.14925373 1.74268657 Sludge Crite	mg/i pounds per	r day			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	0.14925373 1.74268657 Sludge Crite	mg/i pounds per				day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.14925373 1.74268657 Sludge Criter 41	mg/i pounds per nia mg/kg	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	0.14925373 1.74268657 Sludge Criter 41 1047	mg/l pounds per ma mg/kg cf/day	r day			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56	mg/l pounds per na mg/kg cf/day gpd	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546	mg/l pounds per ma mg/kg cf/day gpd L/day	r day dry solids			
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546	mg/l pounds per mg/kg cf/day gpd L/day kg/day	r day dry solids			
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546	mg/l pounds per mg/kg cf/day gpd L/day kg/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4%	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982	mg/l pounds per mg/kg cf/day gpd L/day kg/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255	mg/l pounds per mg/kg cf/day gpd L/day kg/day mg/day	r day dry solids (design)			day
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255	mg/l pounds per mg/kg cf/day gpd L/day kg/day	r day dry solids (design)			
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072	mg/l pounds per na mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	r day dry solids (design)	34.85373	pounds per	
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33%	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day kg/day ibs. per da CERCLA S	r day dry solids (design) (design) site Discharges 1	34.85373	pounds per	
4	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33%	mg/l pounds per na mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	r day dry solids (design) (design) site Discharges 1	34.85373	pounds per	day
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day kg/day ibs. per da CERCLA S	r day dry solids (design) (design) site Discharges 1	34.85373	pounds per	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day kg/day lbs. per da CERCLA S lbs. per da	r day dry solids (design) y site Discharges 1	34.85373	Pounds per	
	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 1.1676	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per da CERCLA S lbs. per da lbs. per da	r day dry solids (design) (design) y Site Discharges 1 y	34.85373	lbs. per da	
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	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 1.1676 0.8713 1.7427 0.3248	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y site Discharges 1 y y y y y	34.85373	lbs. per da lbs. per da lbs. per da	
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5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 1.1676 0.8713 1.7427 0.3248	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y site Discharges 1 y y y y y	34.85373	lbs. per da lbs. per da lbs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 1.1676 0.8713 1.7427 0.3248	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y site Discharges 1 y y y y y	34.85373	lbs. per da lbs. per da lbs. per da	
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	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 1.1676 0.8713 1.7427 0.3248 0.3248 0.3248	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day lbs, per da lbs, per da lbs, per da lbs, per da lbs, per da lbs, per da	r day dry solids (design) (design) y y y y y y y y y y y y y y y y	34.85373 reatability N Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248	lbs. per da lbs. per da lbs. per da lbs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 Long-term 1.1676 0.8713 1.7427 0.3248 0.3248 0.3248	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) (design) y y y y y y y y y y y y y y y y	34.85373 reatability N Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248	mg/l pounds per ina mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y y y y y y y y y y	34.85373 reatability M Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248 0.3248	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3348 0.3488 0	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day ibs. per da ibs. per da	y y y y y y y y y y y y y y y y y y y	34.85373 reatability M Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248 0.3248	fanual lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3348 0.3488 0	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day ibs. per da ibs. per da	y y y y y y y y y y y y y y y y y y y	34.85373 reatability M Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248 0.3248	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0.14925373 1.74268657 Sludge Criter 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248 0.3248	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day ibs. per da ibs. per da	y y y y y y y y y y y y y y y y y y y	34.85373 reatability M Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248 0.3248 0.3248 0.3143	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.6982 48613.6255 0.1072 33% 0.3248 0.3348 0.3488 0	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day ibs. per da ibs. per da	y y y y y y y y y y y y y y y y y y y	34.85373 reatability M Short-term 1.1676 0.8713 34.8537 0.3248	pounds per pounds per lbs. per da lbs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	0.14925373 1.74268657 Sludge Crite 41 1047 7831.56 29642.4546 29642.4546 29642.4546 29642.4546 0.1072 33% 0.3248 Long-term 1.1676 0.8713 1.7427 0.3248 0.03248 0.0105 0.3143 0.2692 0.001	mg/l pounds per ia mg/kg cf/day gpd U/day kg/day ibs. per da ibs. per da	y y y y y y y y y y y y y y y y y y y	34.85373 reatability M Short-term 1.1676 0.8713 34.8537 0.3248 0.3248 0.3248 0.3248 0.3248 0.3143	pounds per anual lbs. per da lbs. per da	



arreated the	Beryllium						
	BACKGROUND INFORMATION						
<u>.</u>	Poliutant of Concern	Beryllium		· · · · · · · · · · · · · · · · · · ·	t		
	Avg. Background Conc.:		mg/l	(assumed)	<del> </del>		
	Industrial Contribution:	10%		(assumed)			
	Plant Design Capacity:		MGD				
	¥		MGD				
	Domestic Portion						
	Total Domestic Loading of Pollutant:	0	pounds per	cay			
l	CALCULATION OF HEADWORKS						
	LOADING FOR:	Beryllium			1		
1	Inhibition of Activated Sludge Process						
_							
	Inhibiting Concentration:	N.A.	mg/t				
	Influent Limiting Concentration:	N.A.	mg/l				
	Influent Limiting Mass Loading:	#VALUE!	pounds per	dav			
			<b>.</b>				
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality				
	Max, Alonable Mass Loading & Moet	Class In Trac					
	O of Lake Land Dur	~	mad	·	╆╌──┤		
·····	7Q10 of Lake Lena Run		mgd	L	<b>↓</b> ·		
	Max. Q of Effluent	0.65	mgd		ļ	<u> </u>	
	Dilution Factor	1					
	Limiting WQ Concentration	0.00013					
	Maximum Effluent Conc.	0.00013	mg/l				
	Reduction of Pollutant in POTW	0%	based on P	lant Analyses			
	Maximum Influent Conc.	0.00013		· · · · · · · · · · · · · · · · · · ·	1		
	Influent Mass Loading	0.00151788		dav	1		
3	Max. Allowable Mass Loading to Prote	et Effluent Sr	ravfield				
	Max. Allowable Mass Loading to Prote	Long-term	Adviced		Short-term		
	Maximum Effluent Concentration						
	Reduction of Pollutant in POTW		mg/l			mg/l	
				lant Analyses	0		
	Maximum Influent Conc.	0.1	mg/i		0.5	mg/l	
		0.1			0.5		day
	Maximum Influent Conc.	0.1	mg/i		0.5	mg/l	day
4	Maximum Influent Conc.	0.1 1.1678	mg/i pounds per		0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet	0.1 1.1676 Sludge Criter	mg/l pounds per ia	day	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	0.1 1.1678	mg/i pounds per		0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.1 1.1676 Sludge Criter N.A.	mg/i pounds per ia mg/kg	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	0.1 1.1676 Sludge Criter N.A. 1047	mg/i pounds per ia mg/kg cf/day	day	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.1 1.1678 Sludge Criter N.A. 1047 7831.56	mg/l pounds per ia mg/kg cf/day gpd	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.1 1.1678 Sludge Criter N.A. 1047 7831.56 29642.4546	mg/l pounds per ia mg/kg cf/day gpd L/day	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):	0.1 1.1678 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546	mg/l pounds per ia mg/kg cf/day gpd L/day	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	0.1 1.1678 Sludge Criter N.A. 1047 7831.56 29642.4546	mg/l pounds per ia mg/kg cf/day gpd L/day	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642 4546 29642 4546 4%	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.1 1.1676 Sludge Criter N.A 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day	day dry solids	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day	day dry solids (design)	0.5	mg/l	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day	day dry solids (design)	0.5	mg/l	day
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day kg/day ibs. per day	day dry solids (design)	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	day dry solids (design)	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day kg/day ibs. per day	day dry solids (design)	0.5	mg/l	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	day dry solids (design)	0.5	mg/l	day
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	day dry solids (design)	0.5	mg/l pounds per	day
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design)	0.5	mg/l pounds per	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term	ng/i pounds per	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0%	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518	ng/i pounds per	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0%	mg/l pounds per ia rng/kg gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518	ng/i pounds per	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTV Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838	ibs. per day ibs. per day ibs. per day	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0%	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838	ng/i pounds per	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838	ibs. per day ibs. per day ibs. per day	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTV Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838	ibs. per day ibs. per day ibs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 0% 0.00151788 1.1676 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838 0.001518	ng/l pounds per lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838 0.001518	ibs. per day ibs. per day ibs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 0% 0.00151788 1.1676 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838 0.001518	ng/l pounds per lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676 0.00151788 0.00151788	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 5.838 0.001518 0.001518 0.001518	mg/i pounds per los. per day lbs. per day lbs. per day lbs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTV Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676 0.00151788 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 5.838 0.001518 0.001518 0.001518	ng/l pounds per lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.00151788 0.00151788 0.00151788 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838 0.001518 0.001518 0.001518	ng/i pounds per lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 1.1676 0.00151788 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838 0.001518 0.001518 0.001518	mg/i pounds per los. per day lbs. per day lbs. per day lbs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 0% #VALUE! 0% 0.00151788 0.00151788 0.00151788 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518	ng/i pounds per pounds per lbs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.00151788 0.00151788 0.00151788 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 Short-term 0.001518 5.838 0.001518 0.001518 0.001518	ng/i pounds per pounds per lbs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 0% #VALUE! 0% 0.00151788 0.00151788 0.00151788 0.00151788	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518 0.001518 0.001518	mg/i pounds per pounds per lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Atributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based on Background Conc.	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.00151788 0.00151788 0.00151788 0.00131788 0.00131788	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518 0.001518 0.001518 0.001518	mg/i pounds per pounds per los. per da los. per da	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	0.1 1.1676 Sludge Criter N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 0% #VALUE! 0% 0.00151788 0.00151788 0.00151788 0.00151788	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	day dry solids (design)	0.5 5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518 0.001518 0.001518	mg/i pounds per pounds per los. per da los. per da	

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۹.	BACKGROUND INFORMATION						
	Pollutant of Concern	Boron					
	Avg. Background Conc.:	0.34	mg/l	(1994 testing)			
-	Industrial Contribution:	10%		v			
	Plant Design Capacity:		MGD				
	Domestic Portion		MGD	h			
	Total Domestic Loading of Pollutant:	2.296836	pounds per	dav			<u>├</u> ──
•••••			F				
3.	CALCULATION OF HEADWORKS						
	LOADING FOR	Boron		···-			
			[				
	1 Inhibition of Activated Sludge Process				<u> </u>		
	Timiloluon of Abstrace clouge r rocess						
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A.	mg/i				
	Influent Limiting Mass Loading:		pounds per	dav			
	Inition Chinary Wass Edading.	# # # 12012.	poundo poi		· · · · · · · · · · · · · · · · · · ·		
-	2 Max. Allowable Mass Loading to Meet	Close III \A/at	nor Quality			<b> </b>	
	2 Max. Allowable Mass Loading to Meet	Class III Val			· · · · ·		
			ļ				I
	7Q10 of Lake Lena Run		mgd				<u> </u>
	Max. Q of Effluent	0.65	mgd				l
	Dilution Factor	1	-				l
	Limiting WQ Concentration	N.A.	mg/l				
	Maximum Effluent Conc.	#VALUE!					
	Reduction of Pollutant in POTW		*	lant Analyses			
	Maximum Influent Conc.	#VALUE!	mg/t				
	Influent Mass Loading	#VALUE!	pounds per	r day			
	3 Max. Allowable Mass Loading to Prote	ect Effluent Sp	orayfieid		1		
		Long-term			Short-term		
	Maximum Effluent Concentration	0.75	mg/l		2	mg/i	
	Reduction of Pollutant in POTW	0%			0		
	Maximum Influent Conc.	0.75	mg/l		2	mg/l	·
	Influent Mass Loading		pounds per	dav		pounds per	dav
	4 Nax Arowadie Mass Loading to Nee		10			1	
	4 Max. Allowable Mass Loading to Meet Limiting Concentration	N.A.	mg/kg	dry solids			
				dry solids		·····	
	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)			
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg cf/day				
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day				
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd L/day				
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4%	mg/kg cf/day gpd L/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day kg/day				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	Short-term		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	Short-term		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design)	Short-term	ibs. per da	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design)		ibs. per da Ibs. per da	y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design)		ibs. per da ibs. per da ibs. per da	y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design)	15.012	ibs. per da ibs. per da ibs. per da ibs. per da	y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design)	15.012	ibs. per da ibs. per da ibs. per da	y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design)	15.012	ibs. per da ibs. per da ibs. per da ibs. per da	y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design)	15.012	ibs. per da ibs. per da ibs. per da ibs. per da	y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 5.6295 5.6295	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y y y y y y y	15.012 15.012	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 5.6295 5.6295	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y y y y y y y	15.012 15.012	ibs. per da ibs. per da ibs. per da ibs. per da	y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295	Ing/kg cf/day gpd L/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design)	15.012 15.012 15.012	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design)	15.012 15.012 15.012	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 15.012 2.296836	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836	Ing/kg cf/day gpd L/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 15.012 2.296836	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 15.012 2.296836	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836 3.332664	mg/kg cf/day gpd i/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 15.012 2.296836	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836 3.332664	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836 3.332664 4.44	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516 16.94	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	y y y y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based Mass. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69918 #VALUE! #VALUE! 0% #VALUE! 5.6295 5.6295 2.296836 3.332664 4.44 0.34	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	15.012 15.012 15.012 2.296836 12.71516 16.94	ibs. per da ibs. per da mg/l	y y y y y y y





Calculation of Pretreatment Limits for BOD

Pollutant:	800	<u> </u>			<u> </u>
	BACKGROUND INFORMATION	<u></u>			ļ. <u>-</u>
L		BOD			
	Pollutant of Concern				
- · · · · · · · · · · · · · · · · · · ·	Avg. Background Conc.: Industrial Contribution:	10%	mg/l	(routine tes	ung)
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Pollutant:		pounds per	dav	
	Total Domesus Loading of Folidizinc	1313.303	pounde per		
I.	CALCULATION OF HEADWORKS			· · · · ·	
·	LOADING FOR:	BOD			
1	Inhibition of Activated Sludge Process	l			
	Innibition of Adatated Clauge Freedo				
	Inhibiting Concentration:	300	mg/i		
	Influent Limiting Concentration:		mg/l	·	
·	Influent Limiting Mass Loading:		pounds per	dav	[
	Theory Entering theor codering.		poundo por		
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
	Hinax / doitable fildes Estating to filde				
	7Q10 of Lake Lena Run	0	mgđ		
	Max. Q of Effluent		mgd	<u>├</u>	
	Dilution Factor	1	ingu		
	Limiting WQ Concentration	N.A.	mg/i		+
	Maximum Effluent Conc.	#VALUE!			
	Reduction of Pollutant in POTW		based on P	l Nont Analus	
	Maximum Influent Conc.	#VALUE!	<u> </u>	ant Analys	
		#VALUE!		L	<u> </u>
<u> </u>	Influent Mass Loading	#VALUE!	pounds per	day	
	Max. Allowable Mass Loading to Prote	at Efficient Cu			
	Wax. Allowable Mass Loading to From	CLEMORIC SP		<u>}</u>	
	Maximum Effluent Concentration	N.A.	mg/l	<u> </u>	
	Reduction of Pollutant in POTW		based on P	Mant Analus	L
	Maximum Influent Conc.	#VALUE!		ant Analys	<u>ks</u>
	Influent Mass Loading	#VALUE!	pounds per	Gay	
	Afere Allerenhie Aferen Landing to Afer	Chudee Criter	<u> </u>	· · · · · ·	<u> </u>
4	Max. Allowable Mass Loading to Meet	N.A.		-las a-Kala	<u> </u>
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg	dry solids	
		1047		(decise)	
· · · ·	(wet solids):	7831.56	cf/day	(design)	-
		29642.4546			<u>.</u>
	·····	29642.4546			
<u> </u>	Final solids concentration	29042.4040		<u> </u>	
	Sludge Flow to Disposal	470			
		1105 00040	les (days	1	
	(dry basis)	1185.69818		ļ	
	Mass Loading to Sludge	#VALUE!		1	
	·····	#VALUE!	lbs. per da	<u> </u>	
	Removal of Pollutant in POTW				<u> </u>
	Allowable Influent Mass Loading	0%	lbs. per da	L	<u> </u>
- · .	Anowable milliont Mass Loading	#VALUE!	ius. per da	<b>,</b>	+
	Determination of Limiting Conter			<u> </u>	+
	Determination of Limiting Factor	2054.0	lbo non dr	L	<u>.                                    </u>
	Inhibition of Activated Sludge		lbs. per da		<u> </u>
	Class III Water Quality Standards		lbs. per da		
	Protection of Effluent Sprayfield	#VALUE!	ibs. per da		
	Protection of Sludge Disposal		ibs. per da		
	Limiting Amount	2251.8	lbs. per da	Y	<u> </u>
<u> </u>	ALLOCATION TO INDUCTORS	<u> </u>		<u> </u>	<u> </u>
<u>).</u>	ALLOCATION TO INDUSTRIES	+		<u> </u>	<b> </b>
	T-Ast Allowable 2-5-5		libe	L	┝
	Total Allowable Influent Loading Loading Attributable to Domestic	2251.8	ibs. per da	y	<u> </u>
	ILLINGING AUTIOLIZIDER TO LIGMORSOC				1
		. 4640 OCE	lbs. per da	у	
	Sources	1519.905			
	Sources Mass Loading Available				
	Sources Mass Loading Available for Industrial Loading		lbs. per da	Y	
	Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	731.835		<b>y</b>	
· · · · · · · · · · · · · · · · · · ·	Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	731.835	lbs. per da mg/l	<b>y</b>	
······································	Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	731.835		y	
	Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	731.835 975 225		Y	



Pollutant	Cadmium				
٩	BACKGROUND INFORMATION				
	Pollutant of Concern	Cadmium			
	Avg. Background Conc.:	0.0005		(1/2 detectio	n limit)
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion Total Domestic Loading of Pollutant:				·
	Total Domestic Loading of Pollutant	0.0052542	pounds per	cay	
3.	CALCULATION OF HEADWORKS				
<u>.                                    </u>	LOADING FOR:	Cadmium			
	LOADING FOR.	Caumum		·····	·
1	Inhibition of Activated Sludge Process	l			
·····	Innibility of Activation Globage / Toobss				
	Inhibiting Concentration:	0.5	mg/l		
	Influent Limiting Concentration:		mg/i		
	Influent Limiting Mass Loading:		pounds per	dav	
	inderic Enhang made Leading.	0.000	poundo pu		
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality		
			1		
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1		• • • • •	
	Limiting WQ Concentration	1.21E-03	ma/l		
	Maximum Effluent Conc.	0.00121		l	
	Reduction of Pollutant in POTW	45%	Plant Analy	Ses	
	Maximum Influent Conc.	0.0022	mg/l	{	
	Influent Mass Loading	0.0256872	pounds per	day	
				••••	
3	Max. Allowable Mass Loading to Prote	ect Effluent Sp	rayfield		
		1			
	Maximum Effluent Concentration	0.01	mg/l	İ	
	Reduction of Pollutant in POTW	45%	based on P	lant Analys	es .
	Maximum Influent Conc.	0.01818182			
	Influent Mass Loading	0.21229091		day	
		0.21229091	pounds per	r day	
4	Max. Allowable Mass Loading to Meet	0.21229091 Sludge Criter	pounds per ia	day	
4	Max. Allowable Mass Loading to Meet Limiting Concentration	0.21229091 Sludge Criter	pounds per	day dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.21229091 t Sludge Criter 39	pounds per ia mg/kg	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration	0.21229091 Sludge Criter 39 1047	pounds per ia mg/kg cf/day		
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.21229091 Sludge Criter 39 1047 7831.56	pounds per ia mg/kg cf/day gpd	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546	pounds per ia mg/kg cf/day gpd L/day	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546	pounds per ia mg/kg cf/day gpd L/day kg/day	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546	pounds per ia mg/kg cf/day gpd L/day kg/day	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4%	pounds per ia mg/kg cf/day gpd L/day kg/day	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.21229091 t Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day	dry solids	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day	dry solids (design)	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.21229091 t Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day	dry solids (design)	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day ibs. per day	dry solids (design)	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45%	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)	
4	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45%	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	dry solids (design)	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582	pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	dry solids (design) (v	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 49% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day	dry solids (design) y	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) y	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effuent Sprayfield Protection of Sludge Disposal	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) y	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effuent Sprayfield Protection of Sludge Disposal	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582 5.8380 0.0257 0.2123 0.2265	pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (v v v v v v v v v v v v v v v v v v v	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582 5.8380 0.0257 0.2123 0.2265	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (v v v v v v v v v v v v v v v v v v v	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.226555 0.226555 0.2265555 0.226555555555 0.22655555555555555555555555555555555555	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	dry solids (design) y y y y y y y y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.226555 0.226555 0.2265555 0.226555555555 0.22655555555555555555555555555555555555	pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) y y y y y y y y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265 0.0257 0.0257 0.0053	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	dry solids (design) y y y y y y y y y y y y y y y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265 0.0257 0.0257 0.0053	pounds per ia mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	dry solids (design) y y y y y y y y y y y y y y y	
	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582 0.22654582 0.0257 0.2123 0.2265 0.0257 0.0257 0.0053 0.0204	pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	dry solids (design) y y y y y y y y y y y y y y y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0.21229091 Sludge Crites 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.8380 0.0257 0.2123 0.2265 0.0257 0.0257 0.0053	pounds per ia mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	dry solids (design) y y y y y y y y y y y y y y y	
5	Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.21229091 Sludge Criter 39 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582 0.22654582 0.0257 0.2123 0.2265 0.0257 0.0257 0.0053 0.0204	pounds per ia mg/kg cf/day gpd L/day kg/day ibs. per day ibs. per day	dry solids (design) y y y y y y y y y y y y y y y	

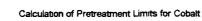




Calculation of Pretreatment Limits for Chromium

1	Chromium				
	RACKODOLINID INFORMATION	ļ			
<u>\</u>	BACKGROUND INFORMATION Pollutant of Concern	Chromium			
	Avg. Background Conc.:		mg/l	(1/2 detectio	n limit)
	Industrial Contribution:	10%			
—i	Plant Design Capacity:		MGD		
	Domestic Portion		MGD	·	
	Total Domestic Loading of Polutant:		pounds per	day	
	· · · · · · · · · · · · · · · · · · ·		<b>.</b>		
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Chromium			
		I			
1	Inhibition of Activated Sludge Process	·			L
	Inhibiting Concentration: Influent Limiting Concentration:		mg/l mg/l	•	
	Influent Limiting Mass Loading:		pounds per	dov	
	Indent Cirtilorig Wass Coading.	11.070	pounds per	Gay	
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality	·	
	7Q10 of Lake Lena Run	Ó	mgd		
	Max. Q of Effluent	+ · · · · · · · · · · · · · · · · · · ·	mgd		<b>├─</b> ·
	Dilution Factor	1			
	Limiting WQ Concentration	1.10E-02	mg/l		
	Maximum Effluent Conc.	0.011			<u> </u>
	Reduction of Pollutant in POTW	71%	based on P	lant Analys	86
	Maximum Influent Conc.	0.03793103			
	Influent Mass Loading	0.44288276	pounds per	day	
3	Max. Allowable Mass Loading to Prot	ect Effluent Sp	prayfield		
	Maximum Efficient Concentration	0.1			
	Maximum Effluent Concentration Reduction of Pollutant in POTW		mg/l based on P		
	Maximum Influent Conc.	0.34482759		ant Analys	85
<u> </u>	Influent Mass Loading		pounds per	dav	<u> </u>
			peanes po.		
4	Max. Allowable Mass Loading to Mee	t Sludge Criter	ia		
	Limiting Concentration		mg/kg	dry solids	
	Sludge Flow to Disposal				
		1			
	(wet solids):	1047	cf/day	(design)	
<u></u>		7831.56	gpd	(design)	
<u></u>		7831.56 29642.4546	gpd L/day	(design)	
	(wet solids):	7831.56 29642.4546 29642.4546	gpd L/day kg/day	(design)	
	(wet solids):	7831.56 29642.4546	gpd L/day kg/day	(design)	
	(wet solids): Final solids concentration Sludge Flow to Disposal	7831.56 29642.4546 29642.4546 4%	gpd L/day kg/day	(design)	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	7831.56 29642.4546 29642.4546 4% 1185.69818	gpd L/day kg/day kg/day	(design)	
	(wet solids): Final solids concentration Sludge Flow to Disposal	7831.56 29642.4546 29642.4546 4% 1185.69818 0	gpd L/day kg/day kg/day mg/day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	7831.56 29642.4546 29642.4546 4% 1185.69818 0	gpd L/day kg/day kg/day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	7831.56 29642.4546 29642.4546 4% 1185.69818 0	gpd L/day kg/day kg/day mg/day lbs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	7831.56 29642.4546 29842.4546 4% 1185.69818 0	gpd L/day kg/day kg/day mg/day lbs. per day	/	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	7831.56 29642.4546 29842.4546 4% 1185.69818 0	gpd L/day kg/day mg/day Ibs. per da	/	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71%	gpd L/day kg/day mg/day lbs. per day lbs. per day		
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	7831.56 29642.4546 29642.4548 4% 1185.69818 0 0 71%	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day		
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71% 71%	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71% 71%	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	7831.56 29642.4546 29842.4546 4% 1185.69818 0 0 0 71% 11.6760 0.4429 4.0262	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	7831.56 29642.4546 29842.4546 4% 1185.69818 0 0 0 71% 11.6760 0.4429 4.0262	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	7831.56 29642.4546 29842.4546 4% 1185.69818 0 0 0 71% 11.6760 0.4429 4.0262	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	7831.56 29642.4546 29842.4546 4% 1185.69818 0 0 0 71% 11.6760 0.4429 4.0262	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	7831.56 29642.4546 29642.4548 4% 1185.69818 0 0 71% 11.6760 0.4429 4.0262	gpd L/day kg/day mg/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	7831.56 29642.4546 29642.4548 4% 1185.69818 0 0 71% 11.6760 0.4429 4.0262	gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effuent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71% 11.6760 0.4429 4.0262 0.4429	gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71% 11.6760 0.4429 4.0262 0.4429	gpd L/day kg/day mg/day lbs. per day lbs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Atributable to Domestic Sources Mass Loading Available for Industrial Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 711% 11.6760 0.4429 4.0262 0.4429 0.4429 0.2102	gpd L/day kg/day mg/day lbs. per day lbs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71% 11.6760 0.4429 4.0262 0.4429 0.2102 0.2102	gpd L/day kg/day mg/day lbs. per day lbs. per day		
5 C.	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Maxitable for Industrial Loading Max. Allowable Conc. based on Mass Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 711% 11.6760 0.4429 4.0262 0.4429 0.4429 0.2102	gpd L/day kg/day mg/day lbs. per day lbs. per day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	7831.56 29642.4546 29642.4546 4% 1185.69818 0 0 71% 11.6760 0.4429 4.0262 0.4429 0.2102 0.2102	gpd L/day kg/day mg/day lbs. per day lbs. per day		

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A	BACKGROUND INFORMATION		1	1	<u> </u>		
	Pollutant of Concern	Cobait			1		
	Avg. Background Conc.:	0.0025	ma/l	(1/2 detection lim	nit)		· ·
	Industrial Contribution:	10%		<u></u>	1		
	Plant Design Capacity:		MGD	· · · — · · · · · · · · · · · · · · · ·	1 ~~		· · ·
	Domestic Portion		MGD				·····
	Total Domestic Loading of Polutant		pounds per	r dav			
	Total Bornoolo Lodaing of Foldaine	0.020211	pounde poi				· · · · · · · · · · · · · · · · · · ·
В.	CALCULATION OF HEADWORKS				1		···
	LOADING FOR:	Cobalt					
			1				
•	1 Inhibition of Activated Sludge Proces		1		1		
	Think borr of 7 to availed chauge 1 tool.	~				·····	
	Inhibiting Concentration:	N.A.	mg/i				
	Influent Limiting Concentration:	N.A.	ma/l		+		
	Influent Limiting Mass Loading:		pounds per	dav			
	Inneone Ennerig medo Coucing.	#UILOL.	pourios poi				
	2 Max. Allowable Mass Loading to Me	at Class III Wat	her Quality	···	1		
	Z Max. Anowable Mass Loading to Me						
	Ou of Loka Long Pure		mad	<u> </u>	+		
· · ·	7Q10 of Lake Lena Run		mgd				
	Max. Q of Effluent	0.65	mgd	[			
	Dilution Factor	1					
	Limiting WQ Concentration	N.A.	mg/i		+		
	Maximum Effluent Conc.	N.A.	mg/l				
	Reduction of Pollutant in POTW			Plant Analyses	· · · · · ·		
	Maximum Influent Conc.	#VALUE!	mg/i	l	ļ		
	Influent Mass Loading	#VALUE!	pounds pe	r day			
			<u> </u>				
	3 Max. Allowable Mass Loading to Pro	tect Effluent Sp	prayfield				
			ļ		Short-term		
	Maximum Effluent Concentration		mg/i	l		mg/l	
	Reduction of Pollutant in POTW		And the second design of the s	Plant Analyses	0		
	Maximum Influent Conc.		mg/l	1		mg/l	
	Influent Mass Loading	0.5838	pounds pe	r day	58.38	pounds per	day
	4 Max. Allowable Mass Loading to Me	et Sludge Crite	ria 📃				
	A fantition One and and an						
	Limiting Concentration	N.A.	mg/kg	dry solids			
	Sludge Flow to Disposal	<u>N.A.</u>	mg/kg	dry solids			
			mg/kg cf/day	dry solids (design)			
	Sludge Flow to Disposal		cf/day				
	Sludge Flow to Disposal	1047	cf/day gpd				
	Sludge Flow to Disposal	1047 7831.56	cf/day gpd L/day				
	Sludge Flow to Disposal	1047 7831.56 29642.4546	cf/day gpd L/day kg/day				
	Sludge Flow to Disposal (wet solids): Final solids concentration	1047 7831.56 29642.4546 29642.4546	cf/day gpd L/day kg/day				
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.4546 29642.4546 29642.4546 4%	cf/day gpd L/day kg/day				
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818	cf/day gpd L/day kg/day				
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	cf/day gpd L/day kg/day kg/day mg/day	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	cf/day gpd L/day kg/day	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 \$VALUE! \$VALUE!	cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 \$VALUE! \$VALUE!	cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	Short too		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	Short-term	· · · · · · · · · · · · · · · · · · ·	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da	(design) y	Short-term	lbs. per day	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y		lbs. per day lbs. per day	1
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y		lbs. per day lbs. per day lbs. per day	Y
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	Y Y Y
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day	Y Y Y
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	Y Y Y
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	Y Y Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0%	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) ( y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	Y Y Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0%	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) ( y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day	Y Y Y
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0%	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y	58.38	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	Y Y Y L L
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0%	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y	58.38	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	Y Y Y L L
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	cf/day gpd U/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	cf/day gpd U/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271	Ibs. per day Ibs. per day	Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373	Ibs. per day Ibs. per day	Y
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373	Ibs. per day Ibs. per day	Y
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838 0.5838 0.5838	cf/day gpd U/day kg/day mg/day ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y	58.38 58.38 58.38 0.026271 58.35373 49.9775	Ibs. per day Ibs. per day	Y





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A	BACKGROUND INFORMATION			
	Pollutant of Concern	Copper		
	Avg. Background Conc.:		mg/i	Avg. of conc. in collection system
	Industrial Contribution:	10%		
	Plant Design Capacity:		MGD	
	Domestic Portion		MGD	
	Total Domestic Loading of Polutant		pounds per	dav
	Total Domestic Loading of Foldanc	0.040072	pounds per	uay
В.	CALCULATION OF HEADWORKS	1	·	· · · · · · · · · · · · · · · · · · ·
<b>.</b>	LOADING FOR:	Copper		
1	Inhibition of Activated Sludge Process	<u></u>	·	
	Initialition of Acavated Citage Process	, 		· · · · · · · · · · · · · · · · · · ·
<i></i>			····	(WEF reports inhibition of AS @ 1 mg/i
	Inhibiting Concentration:	0.24	mg/l	and inhibition of Nit. @ 0.05 to 0.48 mg/l)
	Influent Limiting Concentration:		mg/i	and minibilitin to Mile & 0.05 to 0.46 mgh)
	Influent Limiting Mass Loading:	2.80224	pounds per	day
			l	
2	Max. Allowable Mass Loading to Meet	t Class III vvat	er Quainty	
	7Q10 of Lake Lena Run		mgd	
	Max. Q of Effluent	0.65	mgd	
	Dilution Factor	1		
	Limiting WQ Concentration	1.27E-02		
	Maximum Effluent Conc.	0.01272	mg/l	
	Reduction of Pollutant in POTW	95%	based on F	lant Analyses
	Maximum Influent Conc.	0.2544	mg/i	
	Influent Mass Loading		pounds per	day
				· · · · · · · · · · · · · · · · · · ·
3	Max. Allowable Mass Loading to Prote	ect Effluent So	ravfield	
		Long-term	1	
	Maximum Effluent Concentration		mg/i	
	Reduction of Pollutant in POTW			lant Analyses
	Maximum Influent Conc.		mg/l	
	Influent Mass Loading		pounds per	, day
	Initiation that a cooking		poundo poi	Gay
	Max. Allowable Mass Loading to Mee	t Sluden Criter	ļ	·
	Limiting Concentration		mg/kg	dry solids
	Sludge Flow to Disposal	1.000	mgrag	
	(wet solids):	1047	cf/day	
	(war solids).	7831.56		(design)
	· · · · · · · · · · · · · · · · · · ·	29642.4546	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
	Final solids concentration	29642.4546		
		4%		
	Sludge Flow to Disposal			
	(dry basis)	1185.69818		
	Mass Loading to Sludge	1778547.28		l
	<u> </u>	3.92098532	ibs. per da	Y
		l	<u> </u>	
	Removal of Pollutant in POTW	95%		L
	Allowable Influent Mass Loading	4.12735297	lbs. per da	Ý
5	Determination of Limiting Factor	Long-term		
	Inhibition of Activated Sludge		lbs. per da	Y
	Class III Water Quality Standards		lbs. per da	
	Protection of Effluent Sprayfield		ibs. per da	
	Protection of Sludge Disposal	4.12735297		
	Limiting Amount		ibs. per da	
C.	ALLOCATION TO INDUSTRIES	1		
<u> </u>		1	<u> </u>	······
	Total Allowable Influent Loading	2 80224	lbs. per da	1
	Loading Attributable to Domestic			
	Sources	0.840877	lbs. per da	v
	Mass Loading Available	0.040072	105. por US	Z
	-	1.004500	مدر سعد المطا	
	for Industrial Loading	1.90108	lbs. per da	¥
	Max. Allowable Conc. based			
	on Mass Loading	1.68	mg/l	
	Max. Allowable Conc. based			
	Inn Beekennund Cone	1 0.00	mg/i	
	on Background Conc. Program Limit		limg/l	

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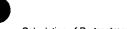




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rolutant	Cyanide				
					ļ
L	BACKGROUND INFORMATION				L
	Pollutant of Concern Avg. Background Conc.:	Cyanide 0.005	mail	(1) dotestis	(insit)
	Avg. background Conc	10%		(1/2 detectio	ri arracj
	Plant Design Capacity:	the second secon	MGĐ		
	Domestic Portion		MGD		
	Total Domestic Loading of Polutant:		pounds per	day	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Cyanide			
		<u> </u>			
1	Inhibition of Activated Sludge Process	\$			
				·· · · · · · · · · · · · · · · · · · ·	
	Inhibiting Concentration:		mg/t		
	Influent Limiting Concentration: Influent Limiting Mass Loading:		mg/l pounds per		
	innuent Linnung Mass Loading.	1.10/0	pounus per	uay	
2	Max. Allowable Mass Loading to Mee	t Class III Wat	er Quality		
<u> </u>	Max. Allowable Mass Loading to Mes				
~ · ·	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd	h	
	Dilution Factor	1			· · ·
	Limiting WQ Concentration	5.20E-03	mg/l		
	Maximum Effluent Conc.	0.0052			t
· · · · · ·	Reduction of Pollutant in POTW	56%	based on P	lant Analys	es
	Maximum Influent Conc.	0.01181818	mg/l	-	
	Influent Mass Loading	0.13798909	pounds per	day	
3	Max. Allowable Mass Loading to Prot	ect Effluent Sp	prayfield		
<u></u>					
	Maximum Effluent Concentration	N.A.	mg/l		
	Reduction of Pollutant in POTW		based on P	lant Analys	<b>85</b>
	Maximum Influent Conc.	#VALUE!	mg/i	 	
	Influent Mass Loading	#VALUE!	pounds per		<u> </u>
	Max. Allowable Mass Loading to Mee	i t Shudao Critor	i		
- 4	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal		mgr vg	ary solids	
	(wet solids):	1047	cf/day	(design)	
		7831.56		(	
	· • · · · · · · · · · · · · · · · · · ·				
		29642.4546			
					[
	Final solids concentration	29642.4546 29642.4546 4%	kg/day		
**	Final solids concentration Sludge Flow to Disposal	29642.4546	kg/day		
	Sludge Flow to Disposal (dry basis)	29642.4546 4% 1185.69818	kg/day kg/day		
	Sludge Flow to Disposal	29642.4546 4% 1185.69818 #VALUE!	kg/day kg/day mg/day		
	Sludge Flow to Disposal (dry basis)	29642.4546 4% 1185.69818 #VALUE!	kg/day kg/day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 4% 1185.69818 #VALUE! #VALUE!	kg/day kg/day mg/day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56%	kg/day kg/day mg/day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 4% 1185.69818 #VALUE! #VALUE!	kg/day kg/day mg/day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56%	kg/day kg/day mg/day lbs. per day		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE!	kg/day kg/day mg/day lbs. per day lbs. per day		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676	kg/day kg/day mg/day lbs. per day lbs. per day		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676	kg/day kg/day mg/day libs. per day libs. per day libs. per day libs. per day		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676	kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380	kg/day kg/day mg/day libs. per day libs. per day libs. per day libs. per day		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380	kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380	kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380	kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380	kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380	kg/day mg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380 0.1380	kg/day mg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380 0.1380	kg/day kg/day mg/day lbs. per day lbs. per day		
5 5 C.	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.4546 4% 1185.69818 #VALUE! #VALUE! 1.1676 0.1380 0.1380 0.1380	kg/day kg/day mg/day lbs. per day lbs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.4546 4% 1185.69818 #VALUE! #VALUE! 1.1676 0.1380 0.1380 0.1380 0.0525 0.0854	kg/day mg/day ibs. per day ibs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 4% 1185.69818 #VALUE! #VALUE! 1.1676 0.1380 0.1380 0.1380	kg/day mg/day ibs. per day ibs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.1380 0.1380 0.1380 0.0525 0.0854 0.0732	kg/day mg/day ibs. per day ibs. per day		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 4% 1185.69818 #VALUE! #VALUE! 1.1676 0.1380 0.1380 0.1380 0.0525 0.0854	kg/day mg/day ibs. per day ibs. per day		

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Calculation of Pretreatment Limits for Fluoride

	Fluoride				+		
	BACKGROUND INFORMATION			·			
<u>.</u>	Pollutant of Concern	Fluonde		·····			
	Avg. Background Conc.:	0.405	ma/l	1994 testing			
	Industrial Contribution:	10%		1304 tesuing			
	Plant Design Capacity:		MGD				
-	Domestic Portion		MGD		••••••		
			pounds per				<b>.</b> .
	Total Domestic Loading of Polutant:	4.200902	pounds per	Gay			
		·	·				
3.	CALCULATION OF HEADWORKS		ļ				
	LOADING FOR:	Fluoride				i	
		[	·				
1	Inhibition of Activated Sludge Process				<u> </u>		
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A.	mg/l	L <u></u> ,			
	Influent Limiting Mass Loading:	#VALUE!	pounds per	day			
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quality				
	7Q10 of Lake Lena Run	0	mgd		1		
	Max. Q of Effluent		mgd				
	Dilution Factor	1			1		
	Limiting WQ Concentration	1.00E+01	mal	h <del>.</del>	+		
	Maximum Effluent Conc.		mg/l	·			
	Reduction of Pollutant in POTW			Plant Analyses	· · ·		
· · · · · · · · · · · · · · · · · · ·				Tam Analyses			
	Maximum Influent Conc.	10.940919		l <u> </u>	+		<b>.</b>
	Influent Mass Loading	127.746171	pounds per	cay	<u> </u>		
		L	L	· · · · · ·			
3	Max. Allowable Mass Loading to Prote		rayfield			ļ	
		Long-term			Short-term		
	Maximum Effluent Concentration		mg/i	l	15	mg/l	
	Reduction of Pollutant in POTW	9%	based on F	Vant Analyses	9%		
_	Maximum Influent Conc.	1.0940919	mg/l		16.48352	mg/l	
-	Influent Mass Loading	12.7746171	pounds per	r day	192.4615	pounds per	day
4	Max. Allowable Mass Loading to Meet	Sludge Criter	ia				
	Limiting Concentration	N.A.	mg/kg	dry solids			····
	Sludge Flow to Disposal				+		
	(wet solids):	1047	cf/day	(design)			
				(aconge i/			
		792156					
		7831.56			+		
		29642.4546	L/day		+		
		29642.4546 29642.4546	L/day kg/day				
	Final solids concentration	29642.4546	L/day kg/day				
	Sludge Flow to Disposal	29642.4546 29642.4546 4%	L/day kg/day				
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818	L/day kg/day kg/day				
	Sludge Flow to Disposal	29642.4546 29642.4546 4%	L/day kg/day kg/day				
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818 #VALUE!	L/day kg/day kg/day	y			
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818 #VALUE!	L/day kg/day kg/day mg/day	y			
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818 #VALUE!	L/day kg/day kg/day mg/day lbs. per da	y			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9%	L/day kg/day kg/day mg/day lbs. per da				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9%	L/day kg/day kg/day mg/day lbs. per da				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9%	L/day kg/day kg/day mg/day lbs. per da		Short term		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9%	L/day kg/day mg/day lbs. per da lbs. per da		Short-term		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9%	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da	Y Y		lbs. per da	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Studge Class III Water Quality Standards	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE!	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da	y y y y	127.7462	lbs. per day lbs. per day	1
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE!	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	Y Y Y Y	127.7462	lbs. per day lbs. per day lbs. per day	/
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	/ /
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day	/ /
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	/ /
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	/ /
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	/ /
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	127.7462 192.4615 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	127.7462 192.4615 127.7462	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Y Y Y Y Y Y	127.7462 192.4615 127.7462 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	Y Y Y Y Y Y	127.7462 192.4615 127.7462 127.7462	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 4.2559 8.5187	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559	ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 4.2559 8.5187	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903 105.7642	Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 4.2559 8.5187	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903	Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 9% #VALUE! 127.7462 12.7746 12.7746 12.7746 4.2559 8.5187 7.2959	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.2559 123.4903 105.7642	ibs. per da ibs. per da	





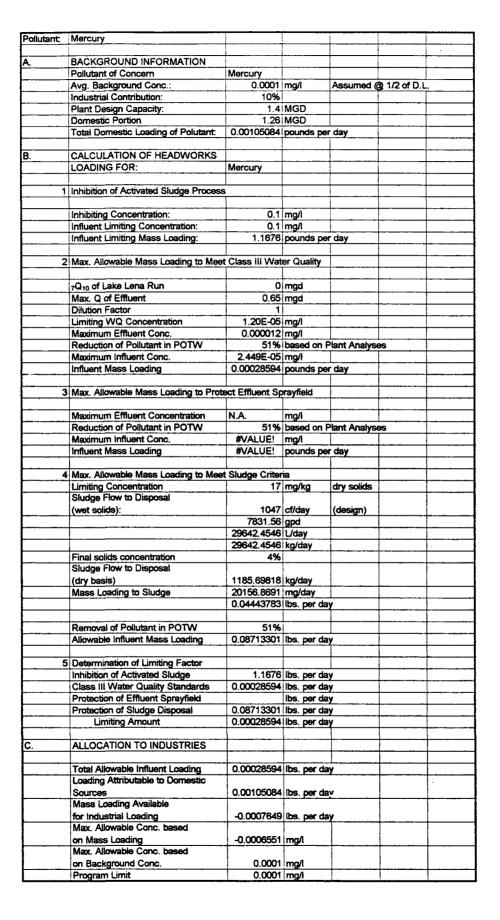
Poilutant:	Lead				
<b>.</b> .	BACKGROUND INFORMATION		· · · · ·		
<u> </u>	Pollutant of Concern	Lead			
	Avg. Background Conc.:	0.0105	ma/l	Previous T	esting
	Industrial Contribution:	10%	·····		T
	Plant Design Capacity:		MGD		
. <u></u> .	Domestic Portion		MGD	L <u>.,</u>	
·····	Total Domestic Loading of Polutant:	0.1103382	pounds per	day	
3.	CALCULATION OF HEADWORKS				
<u>.</u>	LOADING FOR:	Lead			<u> </u>
1	Inhibition of Activated Sludge Process	3			· · · · ·
	Inhibiting Concentration:		mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:	5.838	pounds per	day	
			Curlina -		· · ·
2	Max. Allowable Mass Loading to Mee	Class III vvat	er Quality	·	
	7Q <sub>10</sub> of Lake Lena Run	0	mgd	·	
	Max. Q of Effluent		mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	3.55E-03	mg/l		
	Maximum Effluent Conc.	0.00355	mg/l		
	Reduction of Pollutant in POTW		based on P	lant Analys	es
	Maximum Influent Conc.	0.00825581		l	
	Influent Mass Loading	0.09639488	pounds per	day	,
	May Alleymotic Mana Landing to Deet		and a failed		
3	Max. Allowable Mass Loading to Prot	ect Emuent Sp	rayneia		
	Maximum Effluent Concentration	5	mg/l		
	Reduction of Pollutant in POTW		based on P	lant Analys	L
	Maximum Influent Conc.	11.627907			
	Influent Mass Loading	135.767442		day	1
. 4	Max. Allowable Mass Loading to Mee				
	Limiting Concentration	300	mg/kg	dry solids	
	Sludge Flow to Disposal	10.17			
	(wet solids):	7831.56	cf/day	(design)	
		29642.4546			+
		29642.4548			<u> </u>
	Final solids concentration	4%			<u> </u>
	Sludge Flow to Disposal	1			1
	(dry basis)	1185.69818	kg/day		
	Mass Loading to Sludge	355709.455			
		0.78419706	lbs. per day	· · ·	
			ļ		ļ
	Removal of Pollutant in POTW	57%			
	Allowable Influent Mass Loading	1.37578432	ius. per da	·	
5	Determination of Limiting Factor	+		<u> </u>	+
	Inhibition of Activated Sludge	5 839	ibs. per day	·	+
	Class III Water Quality Standards	0.09639488			
	Protection of Effluent Sprayfield	135.767442	ibs. per dar	/	
	Protection of Sludge Disposal	1.37578432	lbs. per da	/	
	Limiting Amount	0.09639488	lbs. per da	/	
		l	<u> </u>	<b>_</b>	ļ
<u>C.</u>	ALLOCATION TO INDUSTRIES				
	Total Allowable Influent Loading	0.0004	lbs. per da	l	+
• • • • • • • • • • • • • • • • • • • •	Loading Attributable to Domestic	0.0504	nwa. µar uai	7	1
	Sources	0.1103	lbs. per da	v	
	Mass Loading Available				1
	for Industrial Loading	-0.0139	ibs. per da	Y	
	Max. Allowable Conc. based				1
	on Mass Loading	-0.0119	mg/l		L
	Max. Allowable Conc. based				1
	on Background Conc. Program Limit	0.0105			





Pollutant	Manganese			
A	BACKGROUND INFORMATION			
	Pollutant of Concern	Manganese		
	Avg. Background Conc.:		mg/l	(Assumed)
	Industrial Contribution:	10%		
	Plant Design Capacity:		MGD	
	Domestic Portion	1.26	MGD	
	Total Domestic Loading of Pollutant:	0	pounds per	day
3.	CALCULATION OF HEADWORKS			
	LOADING FOR:	Manganese		
1	Inhibition of Activated Sludge Process			
	Inhibiting Concentration:	10	mg/l	
	Influent Limiting Concentration:		mg/l	
	Influent Limiting Mass Loading:		pounds per	dav
	Indent Linding Muco Coulding.	110.10	pourido por	
2	Max. Allowable Mass Loading to Meet	Ciace III Mate	r Ouslibu	
2	Max. Anowable Mass Loading to Meet	Ciase in vvale		·
		<u> </u>		·
	7Q10 of Lake Lena Run	+	mgd	
	Max. Q of Effluent		mgd	L
	Dilution Factor	1		
	Limiting WQ Concentration	N.A.	mg/i	
	Maximum Effluent Conc.	#VALUE!	mg/t	
	Reduction of Pollutant in POTW			lant Analyses
	Maximum Influent Conc.	#VALUE!		
	Influent Mass Loading		pounds per	dav
	initiality indeed courses		pourios poi	
3	Max. Allowable Mass Loading to Prote	t Effluent So	wfield	
	Max. Allowable Mass Loading to 1 1000	Long-term		· · · · ·
	Maximum Effluent Concentration			
	Maximum Effluent Concentration		mg/l	
	Reduction of Pollutant in POTW	33%		
	Maximum Influent Conc.	0.29850746		
		0.29850746 3.48537313		day
	Maximum Influent Conc. Influent Mass Loading	3.48537313	pounds per	day
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet	3.48537313	pounds per a	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	3.48537313	pounds per	day dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet	3.48537313 Sludge Criteri	pounds per a	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration	3.48537313 Sludge Criteri N.A.	pounds per a	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Studge Flow to Disposal	3.48537313 Sludge Criteri N.A. 1047	pounds per a mg/kg cf/day	dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Studge Flow to Disposal	3.48537313 Sludge Criteri N.A. 1047 7831.56	pounds per a mg/kg cf/day gpd	dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Studge Flow to Disposal	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546	pounds per a mg/kg cf/day gpd L/day	dry solids
. 4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids):	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546	pounds per a mg/kg cf/day gpd L/day kg/day	dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546	pounds per a mg/kg cf/day gpd L/day kg/day	dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4%	pounds per a mg/kg cf/day gpd L/day kg/day	dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	pounds per a mg/kg cf/day gpd L/day kg/day kg/day	dry solids
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day mg/day	dry solids (design)
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day	dry solids (design)
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day lbs. per da	dry solids (design)
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day lbs. per da	dry solids (design)
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day lbs. per da	dry solids (design)
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day bs. per day	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day bs. per day	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day bs. per day ibs. per day	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	pounds per a mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day ibs. per day	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76	pounds per mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	pounds per mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313	pounds per mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854	pounds per mg/kg cf/day gpd L/day kg/day mg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854	pounds per mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854	pounds per mg/kg cf/day gpd L/day kg/day mg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effuent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854 0.0000	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day lbs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Atributable to Domestic Sources Mass Loading Available for Industrial Loading	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854 0.0000	pounds per mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854 0.0000 3.4854	pounds per mg/kg cf/day gpd L/day kg/day mg/day ibs. per day ibs. per day	dry solids (design)
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854 0.0000	pounds per mg/kg cf/day gpd L/day kg/day mg/day ibs. per day ibs. per day	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! Long-term 116.76 3.48537313 3.4854 0.0000 3.4854	pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da	dry solids (design)
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Meet Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading	3.48537313 Sludge Criteri N.A. 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.48537313 3.4854 0.0000 3.4854	pounds per mg/kg cf/day gpd L/day kg/day kg/day bs. per day bs. per day	dry solids (design)







Pollutant:	Molybdenum				
A	BACKGROUND INFORMATION				
	Pollutant of Concern	Molybdenum			
	Avg. Background Conc.:		mg/l	(Assumed)	
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD	L <u></u>	
·	Total Domestic Loading of Polutant:	0	pounds per	day	
		+			
B	CALCULATION OF HEADWORKS				
	LOADING FOR:	Molybdenum			
- 1	Inhibition of Activated Sludge Process				
· · · · · · · · · · · · · · · · · · ·	Infinibitori di Activated Siddge Process	<b>.</b>			·
	Inhibiting Concentration:	N.A.	mg/l		
	Influent Limiting Concentration:	N.A.	mg/l		
	Influent Limiting Mass Loading:		pounds per	dav	
	unident Linding Mass Loading.	#VALUE:	pounda per		
2	Max. Allowable Mass Loading to Mee	t Class III Wat	er Quality		
2	man, reiomable mass coading to Mise		or undarry		
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	0.00	iiigu		
t	Limiting WQ Concentration	N.A.	mg/l		
	Maximum Effluent Conc.	#VALUE!			
	Reduction of Pollutant in POTW			lant Analyse	
	Maximum Influent Conc.	#VALUE!			~
	Influent Mass Loading	#VALUE!		dav	
	initiation industry		poundo por	·/	
3	Max. Allowable Mass Loading to Prot	ect Effluent So	ravfield		
		Ţ		·	
	Maximum Effluent Concentration	0.01	mg/l		
	Reduction of Pollutant in POTW	50%	based on F	'iant Anaiyşi	
			based on F mo/I	lant Analysi	25
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading	0.02	mg/l		
	Maximum Influent Conc.	0.02			
	Maximum Influent Conc. Influent Mass Loading	0.02	mg/l pounds per		
4	Maximum Influent Conc.	0.02 0.23352 t Sludge Criter	mg/l pounds per		
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee	0.02 0.23352 t Sludge Criter	mg/l pounds per ia	day	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration	0.02 0.23352 t Sludge Criter 75	mg/l pounds per ia	day	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0.02 0.23352 t Sludge Criter 75	mg/l pounds per ia mg/kg cf/day	day dry solids	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0.02 0.23352 t Sludge Criter 75 1047	mg/l pounds per ia mg/kg cf/day gpd	day dry solids	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0.02 0.23352 t Sludge Criter 75 1047 7831.56	mg/l pounds per ia mg/kg cf/day gpd L/day	day dry solids	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29842.4546	mg/l pounds per ia mg/kg cf/day gpd L/day	day dry solids	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29842.4546 29842.4546	mg/l pounds per ia mg/kg cf/day gpd L/day	day dry solids	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/l pounds per mg/kg cf/day gpd L/day kg/day	day dry solids	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day	dry solids (design)	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day	dry solids (design)	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day	dry solids (design)	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29842.4546 29842.4546 4% 1185.69818 88927.3638 0.19604927 50%	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design)	
4	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29842.4546 29842.4546 4% 1185.69818 88927.3638 0.19604927 50%	mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29842.4546 29842.4546 4% 1185.69818 88927.3638 0.19604927 50%	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	dry solids (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853	mg/l pounds per mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	dry solids (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.39209853	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.39209853	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.39209853	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.39209853	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.39209853 0.23352	mg/i pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.39209853 0.23352	mg/l pounds per ia rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.39209853 0.23352 0.39209853 0.23352	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.39209853 0.23352 0.39209853 0.23352	mg/i pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y y y y	
	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.23352 0.23352 0.23352 0.23352	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.23352 0.23352 0.23352 0.23352	mg/l pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.39209853 0.23352 0.39209853 0.23352 0.23352 0.23352	mg/i pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.23352 0.23352 0.23352 0.23352	mg/i pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.23352 0.23352 0.23352 0.23352 0.23352 0.23352	mg/i pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per day lbs. per day	y y y y y y y y y y y y y y y y	
5	Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.02 0.23352 t Sludge Criter 75 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 88927.3638 0.19604927 50% 0.39209853 0.39209853 0.23352 0.39209853 0.23352 0.23352 0.23352	mg/i pounds per ia mg/kg cf/day gpd L/day kg/day lbs. per da lbs. per da	y y y y y y y y y y y y y y y y	





Calculations of Pretreatment Limits for Nickel

	Nickel				
<u>\</u>	BACKGROUND INFORMATION				
	Pollutant of Concern	Nickel			
	Avg. Background Conc.:		mg/l	1994 Testir	ng
	Industrial Contribution:	10%			
·	Plant Design Capacity:	A contraction of the second	MGD MGD	· · · · · ·	
	Domestic Portion Total Domestic Loading of Polutant:		pounds per		
	Total Domestic Loading of Polularit	0.210100	pounds per	day	
3.	CALCULATION OF HEADWORKS	+			
	LOADING FOR:	Nickel			
1	Inhibition of Activated Sludge Process	5			
	Inhibiting Concentration:	0.5	mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:	5.838	pounds per	day	
2	Max. Allowable Mass Loading to Mee	t Class III Wat	er Quality		
	7Q <sub>10</sub> of Lake Lena Run	0	mgd		
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	1.70E-01			
	Maximum Effluent Conc.	0.1696			
	Reduction of Pollutant in POTW			lant Analys	95
	Maximum Influent Conc.	0.24941176			
	Influent Mass Loading	2.91213176	pounds per	r day	
				·	
3	Max. Allowable Mass Loading to Prot	ect Effluent Sp	rayfield		
	500 to 10				
	Maximum Effluent Concentration		mg/l		L
	Reduction of Pollutant in POTW			Plant Analys	35
	Maximum Influent Conc.	0.29411765			
	Influent Mass Loading	3.43411765	pounds per	Cay	
A	May Allouphia Mass Londing to Mag	t Sludge Criter	ja		
4	Max. Allowable Mass Loading to Mee			day solids	
4	Limiting Concentration		ia mg/kg	dry solids	
4	Limiting Concentration Studge Flow to Disposal	420	mg/kg		
4	Limiting Concentration	420	mg/kg cf/day	dry solids (design)	
4	Limiting Concentration Studge Flow to Disposal	420 1047 7831.56	mg/kg cf/day gpd		
4	Limiting Concentration Studge Flow to Disposal	420 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day		
4	Limiting Concentration Studge Flow to Disposal (wet solids):	420 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day		
4	Limiting Concentration Studge Flow to Disposal (wet solids): Final solids concentration	420 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day kg/day		
4	Limiting Concentration Studge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	420 1047 7831.56 29642.4546 29642.4546 4%	mg/kg cf/day gpd L/day kg/day		
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day		
4	Limiting Concentration Studge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497983.237	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32%	mg/kg gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589	mg/kg gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
	Limiting Concentration Studge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32%	mg/kg gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32%	mg/kg gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 3.2% 3.43086216 5.838	mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da	(design) y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 3.23% 3.43086216 5.838 2.9121	mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da	(design) y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497983.237 1.09787589 3.23% 3.43086216 5.838 2.9121 3.4341	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4341 3.4309	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4341 3.4309	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4341 3.4309	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4341 3.4309	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 3.2% 3.43086216 5.838 2.9121 3.4309 2.9121	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 3.2% 3.43086216 5.838 2.9121 3.4309 2.9121	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 3.2% 3.43086216 5.838 2.9121 3.4341 3.4309 2.9121	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 3.2% 3.43086216 5.838 2.9121 3.4341 3.4309 2.9121	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	420 1047 7831.56 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4309 2.9121 3.4309 2.9121 0.2102	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	420 1047 7831.56 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4309 2.9121 3.4309 2.9121 0.2102	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4309 2.9121 0.2102 2.7020	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Arnount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	420 1047 7831.56 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4309 2.9121 3.4309 2.9121 0.2102	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	420 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 497993.237 1.09787589 32% 3.43086216 5.838 2.9121 3.4309 2.9121 0.2102 2.7020	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	

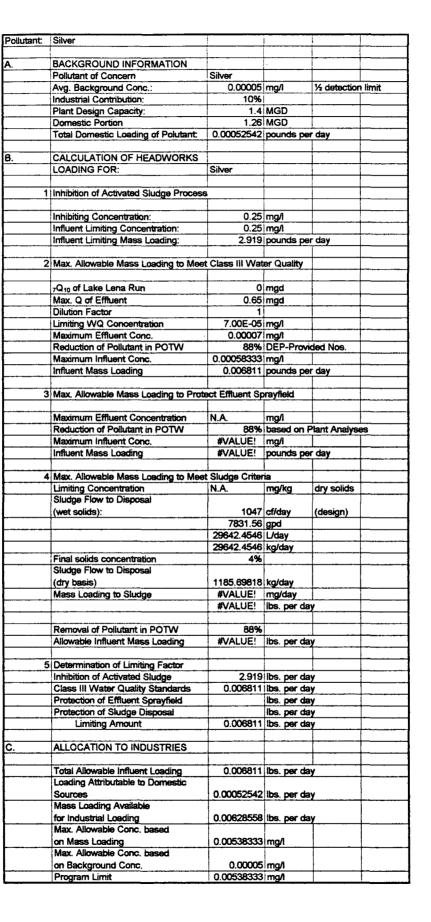
# Calculation of Pretreatment Limits for Selenium



Pollutant	Selenium			
	PACKOROLIND INFORMATION	<u> </u>		
A	BACKGROUND INFORMATION	Calasium		
	Pollutant of Concern	Selenium		(
	Avg. Background Conc.:		mg/i	(Assumed
	Industrial Contribution:	10%		
	Plant Design Capacity:		MGD	
	Domestic Portion		MGD	L.,
	Total Domestic Loading of Polutant:	0	pounds per	day
B.	CALCUL ATION OF HEADINORKS			
<b>D</b> .	CALCULATION OF HEADWORKS	Selenium		
		Selenium		
	Inhibition of Activated Sludge Process			
· · · · · · ·	Thindudit of Activated Siddye Froces	<b>&gt;</b>	···· ···	
	Inhibiting Concentration:	N.A.	mg/l	
	Influent Limiting Concentration:		mg/l	
	Influent Limiting Mass Loading:		pounds per	dau
	Indent Limburg Mass Loading.	#VALUE:	pounds per	uay
	Max. Allowable Mass Loading to Mee			
2	Max. Allowable mass coading to mee		erQuanty	
	0			
	7Q10 of Lake Lena Run		mgd	
	Max. Q of Effluent	0.65	mgd	
	Dilution Factor	1		
	Limiting WQ Concentration	5.00E-03		
	Maximum Effluent Conc.	0.005		
	Reduction of Pollutant in POTW	0%		
	Maximum Influent Conc.	0.00500501		
	Influent Mass Loading	0.0584	pounds per	day
3	Max. Allowable Mass Loading to Prot	ect Effluent Sp	rayfield	
	Maximum Effluent Concentration		mg/l	
	Reduction of Pollutant in POTW	0%		
	Maximum influent Conc.	0.02002002		
	Influent Mass Loading	0 23375375	pounds per	dav
	Theory Loughing	0.20070070	poonido poi	
4	Max. Allowable Mass Loading to Mee	t Sludge Criter	ia	
4	Max. Allowable Mass Loading to Mee Limiting Concentration	t Sludge Criter		
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	t Sludge Criter 100	ia mg/kg	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration	t Sludge Criter 100 1047	ia mg/kg cf/day	
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	t Sludge Criter 100 1047 7831.56	ia mg/kg cf/day gpd	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	t Sludge Criter 100 1047 7831.56 29642.4546	ia mg/kg cf/day gpd L/day	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546	ia mg/kg cf/day gpd L/day kg/day	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	t Sludge Criter 100 1047 7831.56 29642.4546	ia mg/kg cf/day gpd L/day kg/day	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4%	ia mg/kg cf/day gpd L/day kg/day	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	ia mg/kg gpd L/day kg/day	dry solids
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818	ia mg/kg gpd L/day kg/day kg/day mg/day	dry solids (design)
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818	ia mg/kg gpd L/day kg/day	dry solids (design)
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140	ia mg/kg of/day gpd L/day kg/day kg/day lbs. per day	dry solids (design)
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Potlutant in POTW	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0%	ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)
4	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0%	ia mg/kg of/day gpd L/day kg/day kg/day lbs. per day	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0%	ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Potlutant in POTW	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0%	ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0%	ia mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per da lbs. per da	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990	ia mg/kg gpd L/day kg/day kg/day ibs. per da ibs. per da	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990 0.0584 0.2338	ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990 0.0584 0.2338	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.2338 261.3990	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.2338 261.3990	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.2338 261.3990	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design)
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990 0.05844 0.2338 261.3990 0.05843844	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) ////////////////////////////////////
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990 0.05844 0.2338 261.3990 0.05843844	ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) ////////////////////////////////////
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990 0.0584 0.2338 261.3990 0.05843844	ia mg/kg gpd L/day kg/day kg/day lbs. per day lbs. per day	dry solids (design) 
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 261.3990 0.0584 0.2338 261.3990 0.05843844	ia mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) 
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.2338 261.3990 0.05843844 0.20584	ia mg/kg gpd L/day kg/day mg/day lbs. per day lbs. per day	dry solids (design) ( y y y y y y y y y y y y y y
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.2338 261.3990 0.05843844 0.20584	ia mg/kg gpd L/day kg/day kg/day lbs. per day lbs. per day	dry solids (design) ( y y y y y y y y y y y y y y
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.0584 0.0584 0.00584	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	dry solids (design) ( y y y y y y y y y y y y y y
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	t Sludge Criter 100 1047 7831.56 29842.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.2338 261.3990 0.05843844 0.20584	ia mg/kg gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	dry solids (design) ( y y y y y y y y y y y y y y
5	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	t Sludge Criter 100 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 118569.818 0.26140 0% 281.3990 0.0584 0.0584 0.0584 0.00584	ia mg/kg cf/day gpd L/day kg/day ibs. per day ibs. per day	dry solids (design) ( y y y y y y y y y y y y y y

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Pollucanc	Total Dissolved Solids	1			
۹.	BACKGROUND INFORMATION				<u>↓</u>
<u>"</u>	Pollutant of Concern	Total Dissolv	ed Solids		
	Avg. Background Conc.:	400	mg/l	1994 Testi	na
	Industrial Contribution:	10%			[
	Plant Design Capacity:	1.4	MGD		
	Domestic Portion	1.26	MGD		
	Total Domestic Loading of Polutant:	4203.36	pounds per	day	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Total Dissolv	ed Solids		L
1	Inhibition of Activated Sludge Process	5			
		L			
	Inhibiting Concentration:	N.A.	mg/l	····	
	Influent Limiting Concentration:	N.A.	mg/i	<u> </u>	<u> </u>
	Influent Limiting Mass Loading:	#VALUE!	pounds per	day	· · · · · · · · · · · · · · · · · · ·
			0		
2	Max. Allowable Mass Loading to Meet	Class III Wat	er Quainty		
	O stisks i see D				<u> </u>
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd	<u> </u>	
	Dilution Factor	1			
	Limiting WQ Concentration		mg/l	<b> </b>	
	Maximum Effluent Conc. Reduction of Pollutant in POTW	#VALUE!		lant Arch-	L
	Reduction of Pollutant in POTVV Maximum Influent Conc.	#VALUE!	based on P	IANT ANALYS	<del>55</del>
			pounds per	deur	
	Influent Mass Loading	#VALUE:	pounds per	day	
	Max. Allowable Mass Loading to Prot	ant Effluent Su			
	Max. Allowable Mass Loading to Prou	BCC Emuent op	rayneid		<u> </u>
	Maximum Effluent Concentration	500	mg/l	-,	
	Reduction of Pollutant in POTW		based on P	lont Analys	
	Maximum Influent Conc.	500.500501		ICT IT LATER AND A	
	Influent Mass Loading	5843.84384		dav	<u> </u>
	middlift made coacing	0010.01001	podilos poi	Gay	
		1			
	Max Allowable Mass Loading to Mee	t Sludge Criter	ia		
4	Max. Allowable Mass Loading to Mee			drv solids	
4	Limiting Concentration		ia mg/kg	dry solids	
4	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg		
4	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)	
4	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg cf/day gpd		
4	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd L/day		
4	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day kg/day		
4	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day		
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day		
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day		
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)	
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day lbs. per day	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 5843.84384	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	(design) 	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	(design) 	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Spreyfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 5843.84384	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	(design) 	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 5843.84384	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	(design) 	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) , , , , , , , , , , , , ,	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 5843.84384	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design) , , , , , , , , , , , , ,	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384 5843.84384	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design)	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design) (design)	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384 4203.36 1640.48384	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design) (design)	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Siudge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384 5843.84384	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design) (design)	
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 5843.84384 5843.84384 4203.36 1640.48384 1405.00501	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design) (design)	

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Calculation of Pretreatment Limits for Zinc

	Zinc			
<b>A</b> .	BACKGROUND INFORMATION Pollutant of Concern	Zinc		
	Avg. Background Conc.;	0.145	mail	Past Testing
	Industrial Contribution:	10%		r aor rosang
	Plant Design Capacity:	-	MGD	
	Domestic Portion		MGD	
				des.
	Total Domestic Loading of Polutant:	1.523/18	pounds per	day
<b>B</b> .	CALCULATION OF HEADWORKS LOADING FOR:	Zinc		
1	Inhibition of Activated Sludge Process	6		
	Inhibiting Concentration:	0.29	mg/l	(WEF reports values of 0.08 to 0.5 m
	Influent Limiting Concentration:	0.29	mg/l	
	Influent Limiting Mass Loading:	3.38604	pounds per	day
2	Max. Allowable Mass Loading to Mee	t Class III Wat	er Quality	
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run	0	mgdi	
	Max. Q of Effluent	0.65	mgd	
	Dilution Factor	1	-	
	Limiting WQ Concentration	1.14E-01	mg/i	
	Maximum Effluent Conc.	0.114	-	
	Reduction of Pollutant in POTW			lant Analyses
	Maximum Influent Conc.	0.49565217		···· <b>,</b>
	Influent Mass Loading	5.78723478	•	day
3	Max. Allowable Mass Loading to Prot	ect Effluent Sp	rayfield	
	Maximum Effluent Concentration	2	mg/l	
	Reduction of Pollutant in POTW		•	lant Analyses
**	Maximum Influent Conc.	8.69565217		,,,
	Influent Mass Loading	101.530435	•	day
4	Max. Allowable Mass Loading to Mee	t Sludge Criter	ia	
				dry solids (DEP LIMIT)
	Limiting Concentration			dry solids (DEP LIMIT)
	Limiting Concentration Sludge Flow to Disposal	2800	mg/kg	
	Limiting Concentration	2800	mg/kg cf/day	dry solids (DEP LIMIT) (design)
	Limiting Concentration Sludge Flow to Disposal	2800 1047 7831.56	mg/kg cf/day gpd	
	Limiting Concentration Sludge Flow to Disposal	2800 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day	
	Limiting Concentration Sludge Flow to Disposal (wet solids):	2800 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	2800 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	2800 1047 7831.56 29642.4546 29642.4546 4%	mg/kg gpd L/day kg/day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	(design)
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day ibs. per day	(design)
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604	rng/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day ibs. per day	(design)
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897	rng/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day ibs. per day	(design)
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604	mg/kg cf/day gpd L/day kg/day kg/day mg/day ibs. per day ibs. per day lbs. per day	(design)
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897	rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897	rng/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	(design)
5 C.	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897	rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604	rng/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604	rng/kg cf/day gpd L/day kg/day kg/day mg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	( <b>design</b> )
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604 3.38604 1.523718	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	( <b>design</b> )
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604 3.38604 1.523718	rng/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	( <b>design</b> )
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max, Allowable Conc. based	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604 1.523718 1.862322	rng/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	( <b>design</b> )
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604 3.38604 1.523718	rng/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	( <b>design</b> )
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mase Loading Max. Allowable Conc. based	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604 3.38604 1.523718 1.862322 1.595	rng/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	( <b>design</b> )
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	2800 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 3319954.92 7.31917261 77% 9.50541897 3.38604 5.78723478 101.530435 9.50541897 3.38604 1.523718 1.862322	mg/kg cf/day gpd L/day kg/day kg/day ibs. per day ibs. per day	( <b>design</b> )

### HAULED WASTEWATER

A. Septic tank waste may be introduced into the POTW only at locations disignated by the Director, and at such times as are established by the Director. Such waste shall be domestic waste and shall not violate Section 23-22 of this ordinance or any other requirements established by the City of Auburndale. The Director may require septic tank haulers to obtain wastewater permits.

B. The Director shall require haulers of industrial wastewater to obtain wastewater discharge permits. The Director may require generators of hauled waste to obtain wastewater discharge permits. The Director also may prohibit the disposal of hauled waste. The discharge of hauled waste is subject to all other requirements and fees of this ordinance.

C. Industrial waste haulers may discharge loads only at locations designated by the Director. No load may be discharged without prior consent of the Director. The Director may collect samples of each hauled load to ensure compliance with applicable standards. The Director may require the industrial waste hauler to provide a waste analysis of any load prior to discharge.

D. Industrial waste haulers must provide a waste-tracking form for every load. This form shall include, at a minimum, the name and address of the industrial waste hauler, permit number, truck identification, names and addresses of sources of waste, and volume and characteristics of waste. The form shall identify the type industry or business, known or suspected waste constituents, and whether any wastes are RCRA hazardous wastes.



# Department of Environmental Protection

# **TELEPHONE CONTACT:**

Øinitiated	□receive	d	Date:	71,519c	Time:	11:45
Person Cont	acted:	John	Dickso	<u>ہ</u> Teleph	one:( <u>941</u> )_	<u>965 - 10 5549</u>
Title: 🕖	stewater	Supering	udet R	epresenting:	Cizy of	Auburndale

## Summary:

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- pretreatment - Auburnale - Program Documents

# **Environmental Protection**

Lawton Chiles Governor Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Virginia B. Wetherell Secretary

January 24, 1996

Mr. Billie Mills Pretreatment Inspector City of Auburndale P.O.Box 186 Auburndale, Florida 33823

Re: Pretreatment Program Proposed Local Limits Permit Number FL0021466

Dear Mr. Mills:

The Department has reviewed your preliminary submission of revised local limits dated November 5, 1995. A summary of our comments on your submission is enclosed. Please review the enclosed comments and revise your submission accordingly.

Once revisions are made to the local limits, you should resubmit the revisions to the Department for further review. Upon preliminary approval of your revised local limits by the Department, you should schedule the revisions for formal adoption by the City of Auburndale. Following final adoption of the revised local limits by the city, the ordinance can be formally approved by the Department and become effective.

If you have any questions on this correspondence or need clarification on local limit requirements, please contact John Coates or myself at the letterhead address or at (904) 488-4524.

Sincerely,

Robert E. Heilman, P.E. Pretreatment Coordinator

enclosures

cc: Ed Snipes, P.E., DEP Tampa Al Herndon, P.E., USEPA Region IV Bobby M. Tillman, City of Auburndale





# PRELIMINARY - Local Limit Review Auburndale December 1, 1995 revised January 22, 1996

The following are comments based on the review of local limits and supporting information submitted by the City of Auburndale on November 2. These comments are designed to support the development of technically defensible local limits in accordance with the requirements of Rule 62-625.500(2)(c), Florida Administrative Code (F.A.C.).

## I. General

- A. The proposed local limits contain both daily maximum and monthly average local limits. The implementation of both a daily maximum and monthly average limit should be technically justified by the control authority. Otherwise, it is recommended that the control authority implement only daily maximum local limits meeting the requirements of Rule 62-625.500(2)(c), F.A.C.
- B. The local limit concentrations for aluminum, fluoride, iron, magnesium, manganese, and iodine (128, 105, 100, 425, 120, 100 mg/L, respectively) seem quite high. The control authority may want to review the technical justification to implement local limits for these pollutants. It appears that none of Auburndale's industrial users are likely to discharge wastewater containing those pollutants near those concentrations.
- C. The proposed local limits do not include a safety factor, which is normally used for either uncertainty or growth allowances. Auburndale should provide the basis for not including a safety factor in its calculations. The documentation should indicate whether an allowance for growth is provided elsewhere.

# II. Background Information/Nonindustrial Loading

A. The local limits do not contain any supporting information regarding the total industrial flow. The value used for the total industrial flow is 10% of the WWF design flow (i.e., 140,000 gallons per day). The actual industrial user contribution to the WWF should be documented. However, the industrial user flow for allocating the allowable industrial pollutant loadings may include an allowance for growth. If the value of 140,000 gallons per day includes an allowance for growth, then this should be stated.

B. The local limit calculations do not indicate the source of background loading concentrations. The source for these values must be documented. Some of these values appear to be analytical detection limits. It is suggested that any data below analytical detection limits be averaged or used as one half the detection limit's value.

# III. Development Criteria

- A. The local limit calculations included a water quality standard for cobalt. Cobalt does not have a Class-III freshwater quality standard (WQS); thus, this calculation should be deleted from the local limit submission.
- B. The freshwater Class-III WQS for antimony is 4.3 mg/L; however, the Auburndale calculations used a value of 0.2 mg/L. This calculation should be revised assordingly.
- C. A value of 300 mg/L as CaCO<sub>3</sub> was used to determine the hardness dependent WQS. The source for this value should be documented. Since the WQS are based on end-of-pipe conditions, the hardness value should represent the characteristics of Auburndale's wastewater discharge.
- D. Most of the inhibition data used in your local limit development appear to be the minimum inhibition threshold concentrations for activated sludge from EPA's "Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (local limit guidance manual)." However, some of the inhibition data differ from the guidance values. For example:
  - the inhibition value used for lead was 0.5 mg/L; however, the guidance threshold value is 0.1 mg/L, and
  - the inhibition value used for arsenic was 0.05 mg/L; however, the guidance threshold value is 0.1 mg/L.

Auburndale should identify any references used for the selection of inhibition values.

E. Auburndale should revise the local limit calculations to incorporate the current pollutant concentrations specified on Tables 1 and 3 at 40 CFR 503.13, which apply to land application and the sale of residuals. A number of the values used in the calculations have been recently revised, for example:

- The monthly average for selenium has been revised from 36 to 100 mg/kg,
- The residuals limits for chromium has been deleted,
- The molybdenum monthly average of 18 mg/kg has been deleted; therefore, the maximum limit of 75 mg/kg should be used.

The 40 CFR 503 monthly average for nickel is 420 mg/kg. However, the local limit calculations for residuals protection used the Department's current nickel limitation of 100 mg/kg. The limits in 40 CFR 503 should be used since the Department is in the process of revising its residuals requirements to match those in 40 CFR 503. A copy of the most recent revisions to 40 CFR 503.13 is enclosed.

## **IV.** Treatment Process Removal Efficiencies

A. The treatment process removal efficiencies appear to be a based on a combination of plant data monitoring data and results from a CERCLA treatability study. The source for the removal efficiencies should be clearly documented. Additionally, in several cases, different removal efficiencies were used for the same pollutant (e.g., arsenic and cadmium). A single removal efficiency should be selected for each pollutant and process combination and used consistently.

## V. Pollutant Specific Comments

The following are specific comments on certain pollutants. Please revise the calculations for these pollutants to correct the noted discrepancies or justify the calculated values.

antimony - The calculations use a WQS of 0.2 mg/L; however, the Class-III freshwater WQS is 4.3 mg/L.

- arsenic Auburndale's calculated local limit is 0.27 mg/L; however, the summary of proposed local limits indicates a proposed arsenic value of 0.01 mg/L for both the daily maximum and the monthly average.
- cobalt The guidance values for short-term and long-term discharge limits for the sprayfield differ by two orders of magnitude. Consequently, the calculated monthly average and daily maximum local limits for pass through also differ by an two orders of magnitude. The control authority should evaluate the utility of having both limits if the average

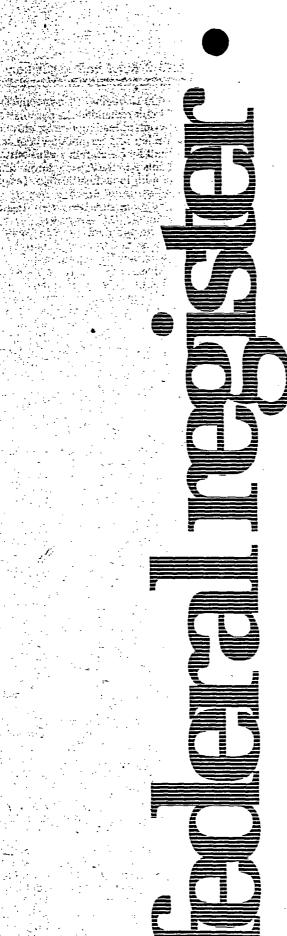
limit is two orders of magnitude more stringent than the daily maximum value.

- mercury The summary of proposed local limits contains a daily maximum of 0.014 mg/L for mercury. However, Auburndale's local limit calculations indicate a mercury local limit of 0.0001 mg/L based on analytical detection limits and limited background sampling data. The basis for the 0.0001 mg/L value is more justifiable since the calculations indicate that there is no allowable industrial loading for mercury. The local limit for mercury must be established at a concentration that provides protection against pass through.
- Silver The local limit for silver was calculated to be **0.00085 mg/L** using the current **0.07 µg/L** freshwater WQS. However, the proposed local limit is 0.008 mg/L. The calculations supporting the 0.00085 mg/L local limit for silver do not appear to contain any mathematical errors; however, a local limit at this concentration may not be achievable by industrial users. The control authority is encouraged to reevaluate and determine if the following assumptions are valid for the local limit calculations and those industrial users who are likely to discharge silver:
  - It appears that the silver concentration for the background loading calculation (i.e., 0.0001 mg/L) may be an analytical detection limit. If so, the background pollutant load to the headworks may be calculated using a value of one half the analytical detection limit. Alternatively, the city may wish to examine the feasibility of performing clean sampling techniques capable of achieving lower analytical detection limits.
  - The WWF removal efficiency was estimated as 60% for . Auburndale's facility based on plant analyses. However, this value seems low and inconsistent since pollutants with similar characteristics are expected to be removed at a similar efficiencies. For example, copper is removed at 95% according to Auburndale's calculations. A copper removal rate of 95% compares well to the 80th percentile removal rate for activated sludge processes (also 95%) found in EPA's Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, EPA 833/B-87-202 (local limits guidance document). One may expect that silver would also be removed similarly to those wastewater facilities achieving removal efficiencies near the 80th percentile values. The 80th percentile removal rate for silver in activated sludge processes in the local limit guidance document is 88%.

Therefore, one may expect that silver would also be removed at approximately 88% in Auburndale. Auburndale should review the analytical data used to calculate removal efficiencies. At a minimum, the review should consider whether the data are representative of their processes or if some of the data may be influenced by increased analytical imprecision that is inherent at concentrations near practical quantitation limits.

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• The local limit calculations assume that the total allowable silver load (e.g., in lb./day) for the wastewater facility should be allocated uniformly among the total industrial user contribution of 140,000 gallons per day. The control authority may wish to perform a more detailed review of the discharge flow rates from possible silver contributing industrial users. The value of 140,000 gallons per day may overestimate the total flow contribution from industrial users in Auburndale that may be likely to discharge silver. For example, if the total industrial contribution for all potential silver dischargers is 50,000 gallons per day, then the total allowable industrial contribution for silver could be allocated over 50,000 instead of 140,000 gallons per day.



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Wednesday October 25, 1995 

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Part II

# **Environmental Protection Agency**

40 CFR Parts 403 and 503

Standards for the Use or Disposal of Sewage Sludge; Final Rule and Proposed Rule

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in this rule. Such provisions, were they included, would be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C.,3501 *et seq.* 

#### 4. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, or tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. When such a statement is needed for an EPA rule, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, giving them meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising them on compliance with the regulatory requirements.

ÉPA has determined that today's amendments to part 403 and part 503 do not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local or tribal governments or the private sector in any one year. The changes to the part 503 regulation promulgated today, to the extent they reduce the costs of complying with current requirements, will, in fact, lessen the regulatory burden on State, local, or tribal governments.

The part 503 regulation includes monitoring and recordkeeping

requirements for certain POTWs and other treatment works treating domestic sewage when sewage sludge is applied to the land. Because EPA will no longer regulate the amount of chromium applied to the land in sewage sludge, POTWs and other treatment works treating domestic sewage will not need to incur any monitoring and recordkeeping cost for chromium.

Consequently, there are either no (or reduced) costs associated with the finalrule promulgated today. Thus, today's rule is not subject to the requirements in sections 202 and 205 of the Act.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect 'small governments that may operate publicly owned treatment works (POTWs) generating sewage sludge. The rule would not significantly affect small governments because, as explained above, the amendments would reduce the monitoring and recordkeeping requirements associated with land application. The amendments also would not uniquely affect small governments because deleting the land application pollutant limits for chromium and changing the pollutant concentration limit for selenium will not affect POTWs operated by small governments differently from other sewage sludge users or disposers.

#### List of Subjects

#### 40 CFR Part 403

Environmental protection, Incineration, Land application, Pollutants, Removal credits, Sewage sludge, and Surface disposal.

#### 40 CFR Part 503

Environmental Protection, Frequency of monitoring, Incineration, Incorporation by reference, Land application, Management practices, Pathogens, Pollutants, Reporting and recordkeeping requirements, Sewage sludge, Surface disposal and Vector attraction reduction.

Dated: October 10, 1995.

#### Carol M. Browner,

#### Administrator.

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is amended as set forth below:

### PART 403—GENERAL PRETREATMENT REGULATIONS FOR EXISTING AND NEW SOURCES OF POLLUTION

1. The authority citation for 40 CFR part 403 continues to read as follows:

Authority: Sec. 54(c)(2) of the Clean Water Act of 1977, (Pub. L. 95-217) sections 204(b)(1)(C), 208(b)(2)(C)(iii), 301(b)(1)(A)(ii), 301(b)(2)(A)(ii), 301(b)(2)(C), 301(h)(5), 301(i)(2), 304(e), 304(g), 307, 308, 309, 402(b), 405 and 501(a) of the Federal Water Pollution Control Act (Pub. L. 92-500) as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (Pub. L. 100-4).

2. Appendix G to part 403 is revised to read as follows:

Appendix G To Part 403—Pollutants Eligible For A Removal Credit

### 1. Regulated Pollutants in Part 503 Eligible for a Removal Credit

Dellutente	Use or disposal practice				
Pollutants	LA	SD /	I		
Arsenic Beryllium Cadmium Chromium Copper Lead Mercury Molybdenum Nickel Selenium Zinc Total hydro-	X X X X X X X X X X	x x x	x x x x x x x		

Key:

LA-land application.

SD-surface disposal site without a liner and leachate collection system.

I-firing of sewage sludge in a sewage sludge incinerator.

<sup>1</sup> The following organic pollutants are eligible for a removal credit if the requirements for total hydrocarbons in subpart E in 40 CFR Part 503 are met when sewage sludge is fired in a sewage sludge incinerator: Acrylonitrile, Aldrin/Dieldrin(total), Benzene, Benzidine, Benzo(a)pyrene, Bis(2-chloroethyl)ether, Bis(2ethylhexyl)phthalate, Brome Bromoethane, Bromoform, Bromodichloromethane, Carbon tetrachloride. Chlordane, Chloroform. Chloromethane, DDD.DDE.DDT. Dibromochloromethane, Dibutyl phthalate, 1,2-dichloroethane, 1,1-dichloroethylene, 2,4-.1,3-dichloropropene, Diethyl dichlorophenol. 2,4-dinitrophenol, phthalate, diphenylhydrazine, Di-n-butyl phthalate, Endosúlfan, Endrin, Ethylbenzene, Heptachlor, Heptachlor epoxide, Hexachlorobutadiene, Alpha-hexachlorocyclohexane, Betahexachlorocyclohexane,

Hexachlorocyclopentadiene, Hexachloroethane, Hydrogen cyanide, Isophorone, Lindane, Methylene chloride, Nitrobenzene, N-Nitrosodimethylamine, N-Nitrosodi-n-propyl-Polyamine, Pentachlorophenol, Phenol. tetrachloroethane, Tetrachloroethylene, 1,2,4-1,1,1-Trichloroethane, Trichlorobenzene, 1,1,2-Trichloroethane, and 2,4,6-Trichlorophenol.

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- II. Addit	IONAL POLLUTANTS ELIGIBLE FOR A REMOVAL CREDIT
· · · · · · · · · · · · · · · · · · ·	[milliorams per kilogram-dry weight basis]

Pollutant	LA	Use or dispo	sal practice	·
		SD	1	
			Unlined 1	Lined <sup>2</sup>
Arsenic			<sup>3</sup> 100	******
Aldrin/Dieldrin (Total)	2.1			
Benzene	316	140	3400	*****
Benzo(a)pyrene	15	3 100	3100	*****
Bis(2-ethylhexyl)phthalate		3100 ·	<sup>3</sup> 100	
Cadmium		3 100	- <sup>3</sup> 100	
Chiordane	86	<sup>3</sup> 100	<sup>3</sup> 100	
Chromium	4		<sup>3</sup> 100	•••••••••••••••••••••••
Copper		346	· · · · · · · · · · · · · · · · · · ·	1400
DDD, DDE, DDT (Total)	1.2	2000	2000	
2.4 Dichlorophenoxy-acetic acid		7	7	*******
Fluoride	730			••••••••••••••••••
Heptachlor	7.4			
Hexachlorobenzene				*****
Hexachlorobutadiene	. 600			
fron	378		***************************************	
Lead		3 100	3100	
Lindane	84	328	328	
Lindane		0.63	0.63	
Mercury		<sup>3</sup> 100	3100	
Molybdenum		40	40	
Nickel			3100	
N-Nitrosodimethylamine		0.088	0.088	
Pentachlorophenol				·
Phenol		82	82	
Polychlorinated biphenyls	4.6	<50	<50	
Selenium		4.8	4.8	4.8
Toxaphene		326	326	
Trichloroethylene		9500	3 10	
		4500	- 4500	4500

Key: LA—land application. SD—surface disposal.

Improvementation.
 Sewage sludge unit without a liner and leachate collection system.

<sup>2</sup> Sewage sludge unit with a liner and leachate collection system.
 <sup>3</sup> Value expressed in grams per kilogram—dry weight basis.

4 Value to be determined on a case-by-case basis.

# PART 503—STANDARDS FOR THE USE OR DISPOSAL OF SEWAGE SLUDGE

1. The authority citation for part 503 continues to read as follows:

Authority: Sections 405(d) and (e) of the Clean Water Act, as amended by Pub. L. 95-217, Sec. 54(d), 91 Stat. 1591 (33 U.S.C. 1345 (d) and (e)); and Pub. L. 100-4, Title IV, Sec. 406 (a), (b), 101 Stat., 71, 72 (33 U.S.C. 1251 et seq.).

2. § 503.13(b) is revised to read as follows:

§ 503.13 Pollutant limits.

(b) Pollutant concentrations and loading rates-sewage sludge.

(1) Ceiling concentrations.

## TABLE 1 OF § 503.13 .- CEILING CONCENTRATIONS

Pollutant	Ceiling con- centration (milligrams per kilo- gram) <sup>1</sup>
Arsenic	· 75
Cadmium	· 85
Copper	4300
Lead	840
Mercury	57
Molybdenum	. 75
Nickel	420
Selenium	100
Zinc	7500

### <sup>1</sup> Dry weight basis.

(2) Cumulative pollutant loading

rates.

## TABLE 2 OF § 503.13.--CUMULATIVE POLLUTANT LOADING RATES

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Pollutant	Cumulative pollutant loading rate (kilograms per hectare)
Arsenic	. 41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

## (3) Pollutant concentrations.

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	of § 503.13.		
	CONCENTRAT	IONS	

Pollutant       Monthly average concentration (milligrams)         Pollutant       centration (milligrams)         Persenic       gram) 1         Arsenic       41         Copper       1500         Lead       300         Mercury       17         Nickel       420         Selenium       100			<u>.</u>
Arsenic		Pollutant	erage con- centration (milligrams per kilo
Mercury	Arsenic Cadmium Copper		41 - 39 - 1500
	Mercury Nickel		420

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<sup>1</sup> Dry weight basis.

· . 

(4) Annual pollutant loading rates. TABLE 4 OF § 503.13. ANNUAL POLLUTANT LOADING RATES Annual pollu ant loading rate (kilo-Pollutant grams per المراجع المراجع المحمد معين المراجع ال محمد المراجع الم محمد المراجع الم E hectare per - 365 day pe

 Cadmium
 2.0
 Selenium

 1.9
 75
 1.9

 Copper
 75
 1.5

 Lead
 15
 [FR Doc. 95–25740 Filed 10-0.85

 Nickel
 21
 BILLING CODE 6560-50-P

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TABLE 4 OF § 503.13 .- ANNUAL POL-LUTANT LOADING RATES Continued 

nt- 1	Pollutant	Annual pollut- ant loading rate (kilo- grams per hectare per 365 day pe- riod)
<b>)</b>	Selenium Zinc	- 5.0 140
• • • • • • • • • • • • •	FR Doc. 95–25740 Filed 10–24	⊢95; 8:45 am]

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Department of Environmental Protection

TELEPHONE CONTACT:
Dinitiated Dreceived Date: 12219c Time: 41.5
Person Contacted: Billic Milly Telephone: () on Fix
Title: P. C. Representing: Auburdal
Summary:
Limite about the Fullowing:
<ul> <li>(i) Billic has already discussed the use of Monthly average local limits in addition to the standard daily max values with the Waste water sugerintendent. Aubundale would Like to follow the Department's recommendation Fillowing this conversation with Bib that they not use the Monthly limits</li> <li>(2) Billie also indicated that he also had guestioned the need for some of the local limits for those</li> </ul>
A nue for some of the local limit for those paranetice which are not likely to be excuded (e.g. Magnesium W/a proposed local limit of 425 mg/L). Billic said that he would discuss some of these w/ his supervisor when he gets are /cman. B we also discussed some of documentation Acedo For their cub mittal. Billic said that he
would review our comments and work with the Consultants who did the work to provide the recded references.
Follow Up Required:         Dyes       Image: Im
Copy to File: Major Anburndale Minor Program <u>CC: R. Heilman of Te</u>



City of Auburndale AUBURNDALE, FLORIDA 33823

Office of Director of Public Utilities

November 02, 1995

Attention: Robert Heilman Department of Environmental Protection Domestic Wastewater Section 2600 Blair Stone Road Tallahassee, Florida 32399-2400

Dear Mr. Heilman:

On February 06, 1995, the City Commission of the City of Auburndale adopted new pretreatment standards as part of the City's Pretreatment Program. After background sampling and reviewing the limits, we feel some changes need to be made.

Attached is a list of the parameters we would like to change and a copy of the calculations on limitations from the engineers. We are asking for your approval before we present this issue to the City Commission.

If you have any questions, please call me.

Sincerely,

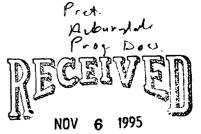
Bolly M. Tillan

Bobby Tillman Director of Public Utilities

vbj

Enclosure

cc: Al Herndon; Region IV Enforcement Section, U.S. EPA



Dept. of Environmental Regulation Domestic Waste Section

> P.O. Box 186 1300 Recker Hwy (813) 965-5549





Auburndele Prog. Doc

Lakeland Reply to: 646-1402 FAX 647-3806

October 27, 1995

Mr. Billie Mills, Pretreatment Coordinator City of Auburndale P.O. Box 186 Auburndale, Florida 33823

## RE: Revisions to Pretreatment Limits CSI File 1880.01

Dear Billie:

As requested, we have re-examined the required pretreatment limits for the Auburndale wastewater treatment plants. This re-examination was based on additional test data from the City, as well as a review of several site specific criteria. We have attached a revised copy of Table D-1, as well as the backup calculation sheets. The changed values are as listed below:

**Aluminum** - The daily maximum value for aluminum was reduced from 199 mg/l to 128 mg/l. This was done to reflect the City's request that the pretreatment calculations reflect a plant design loading of 1.4 mgd, rather than 0.9 mgd.

**Cadmium** - This monthly average value for cadmium was restored to the original (pre-1994) value of 0.03 mg/l, and the maximum daily value was restored to the 0.05 mg/l value. This was based on the additional background testing which the City performed recently.

**Copper** - The monthly average value for copper was raised to 0.84 mg/l, while the maximum daily value was raised to 1.68 mg/l. This was based on the additional background testing which the City performed recently.

**Manganese** - The monthly average value was increased to 3.5 mg/l, while the maximum daily value was raised to 120 mg/l. This was based on supplemental data on potential removals in secondary wastewater treatment plants.

**Mercury** - We have restored both the monthly average and daily maximum values to the original limitations. While the new test data provided by the City was insufficient to justify any modification, we are concerned that there is no feasible way to demonstrate compliance with surface water quality standards for mercury.

`: . Mr. Billie Mills October 27, 1995 Page Two

As we have discussed, the DEP's limitation for mercury is currently set at 0.012 ug/l. However, the latest edition of *Standard Methods* (18th ed., 1992) lists a minimum detectable concentration of 2 ug/l. Therefore, there is no "standard" laboratory method which would allow us to routinely monitor mercury compliance. We believe, especially as there are no suspected sources of mercury in the City's POTW system, that this justifies restoring the original values.

**Molybdenum** - The daily maximum value for molybdenum was reduced from 0.125 mg/l to 0.08 mg/l. This was done to reflect the City's request that the pretreatment calculations reflect a plant design loading of 1.4 mgd, rather than 0.9 mgd.

**Nickel** - The daily maximum value for nickel was reduced from 0.90 mg/l to 0.60 mg/l. This was done to reflect the City's request that the pretreatment calculations reflect a plant design loading of 1.4 mgd, rather than 0.9 mgd. It should be noted that the new values are the same as those which were originally in the pretreatment regulations.

**Phenols** - After several discussions with O.E. Albertson, a noted environmental engineer, and with faculty at Georgia Tech, we are recommending that this limit be deleted. In its place, we are recommending a limit on Total Toxic Organics.

**Silver** - We have restored both the monthly average and daily maximum values to the original limitations. While the new test data provided by the City was insufficient to justify any modification, we are concerned that there is no feasible way to demonstrate compliance with surface water quality standards for silver.

As we have discussed, the DEP's limitation for silver is currently set at 0.07 ug/l. However, the latest edition of *Standard Methods* (18th ed., 1992) lists a minimum detectable concentration of 0.2 ug/l (Method 3113). Therefore, there is no "standard" laboratory method which would allow us to routinely monitor silver compliance. We believe, especially as there are no suspected sources of silver in the City's POTW system, that this justifies restoring the original values.

**Total Toxic Organics** - This is a replacement parameter for phenols. The parameter is analyzed utilizing EPA Methods 624 and 625, and examines the presence of toxic priority pollutants in the wastewater. Based on plant data, the limit for this parameter has been set at the old limit for phenols.

**Zinc** - The monthly average concentration has been raised to 0.5 mg/l, and the daily maximum has been raised to 1.0 mg/l. This is based on the additional testing which the City has conducted in the sewer system.

**Total Identifiable Hydrocarbons** - It is recommended that this parameter be replaced with the total toxic organics parameter.

Mr. Billie Mills October 27, 1995 Page Three

We hope this information is sufficient for your use. If you have any further questions, or need additional assistance, please contact me at your convenience.

Sincerely,

CHASTAIN-SKILLMAN, INC.

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Paul A. Bizier, P.E. Director of Environmental Engineering

PAB/mc

Cc: Bobby Tillman, Director Public Utilities Robert R. Green, City Manager

Enclosures

	SUMMARY OF P					
	AUBURNDALE W	ASTEWATE	ER TREATME	NT PLANTS		
		Monthly Av	erage	Daily Maximu	m	
POLLUTANT	BACKGROUND CONCENTRATION (mg/l)		PROPOSED LIMIT	CURRENT	PROPOSED LIMIT	UNITS
Antimony	0.1	None	0.55	None		mg/l
Aluminum	0.1					mg/l
Arsenic	0.001	0.01		0.01		mg/l
Beryllium	0.001			None		
Boron	0.34			None		
Cadmium	0.04	0.03		0.05		
Chromium - Tota!	0.04	1.00		2.00		mg/l
Cobait	0.04	None		None		
Copper	0.08	1.00		2.00		
Cyanide	0.00	0.018		0.036		mg/l
Fluoride	0.405	None		None		mg/l
Iron	1.2	None	50	None	100	
Lead	0.0105	1.00		2.00		
Magnesium	7.93			None		mg/l
Manganese	0	None	i			
Mercury	0.0001	0.007	0.0070	0.014		
Molybdenum	0	None	0.04	None	·····	
Nickel	0.02	0.30		0.60		mg/l
Oils & Grease		100.00		100.00	100.00	
Phenols	0.013	2.00		4.00		mg/l
Selenium	0		0.025	None	1	mg/l
Silver	0.0001	0.004		0.008		
Total Toxic Organics (EPA Method 624/625)			2.000		4.000	mg/l
Vanadium		None		None		
Zinc	0.165	0.50		1.00		
BOD₅		1575		2520		
TSS		290	290.00	520	520.00	mg/l
<b>Total Dissolved Solids</b>	400	None	1,405.00	None	· · · · · · · · · · · · · · · · · · ·	
Total Nitrogen		40	40.00	80		
Soil Adsorption Ratio		None	≤10	None		

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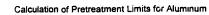


Pollutant:	Antimony					
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A	BACKGROUND INFORMATION					
	Pollutant of Concern	Antimony		(data atian	limaid	•
····-	Avg. Background Conc.:	10%	mg/l	(detection	mini)	
	Industrial Contribution: Plant Design Capacity:		MGD			
	Domestic Portion		MGD			
	Total Domestic Loading of Pollutant:		pounds pe	r dav		+
	Total Domestic Loading of Folidant.	1.00004	poundo po			
В.	CALCULATION OF HEADWORKS					
	LOADING FOR:	Antimony				
					1	
1	Inhibition of Activated Sludge Proces	S	j			
	Inhibiting Concentration:	N.A.	mg/l			
	Influent Limiting Concentration:	N.A.	mg/l			
	Influent Limiting Mass Loading:	#VALUE!	pounds pe	r day		
2	Max. Allowable Mass Loading to Mee	et Class III W	ater Quality			
						L
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run	0	mgd			
	Max. Q of Effluent	0.65	mgd			1
	Dilution Factor	1				
	Limiting WQ Concentration		mg/l			
	Maximum Effluent Conc.		mg/l			
	Reduction of Pollutant in POTW		based on F	Plant Analys	385	
	Maximum Influent Conc.		mg/l			
	Influent Mass Loading	2.3352	pounds pe	r day		
		l				
3	Max. Allowable Mass Loading to Pro	tect Effluent S	Sprayfield			·
		[				
	Maximum Effluent Concentration	N.A.	mg/l	l Naat Aaatu	1	÷
	Reduction of Pollutant in POTW		based on f	lant Analys	ses	
	Maximum Influent Conc.	#VALUEI	pounds pe			
	Influent Mass Loading	#VALUE!	pounds pe	ruay		+
A	Max. Allowable Mass Loading to Mee	t Sludge Crit	eria			
	Limiting Concentration	N.A.	mg/kg	dry solids		
	Sludge Flow to Disposal	11.0.	Ingrig	ary sonas		+
	(wet solids):	1047	cf/day	(design)		
		7831.56		(4001311)		·  - · · · · ·
		29642.455			· · · ·	+
		29642.455				·
	Final solids concentration	4%	· · · · · · · · · · · · · · · · · · ·			+
	Sludge Flow to Disposal					
	(dry basis)	1185.6982	kg/day			
	Mass Loading to Sludge	#VALUE!	mg/day		1	1
			lbs. per da	y		
		1	í			1
	Removal of Pollutant in POTW		CERCLAS		ges Treata	bility Manu
	Allowable Influent Mass Loading	#VALUE!	lbs. per da	y		
5	Determination of Limiting Factor					
	Inhibition of Activated Sludge		lbs. per da			
	Class III Water Quality Standards	2.3352	lbs. per da		1	
	Protection of Effluent Sprayfield		lbs. per da			
	Protection of Sludge Disposal		lbs. per da		ļ	
	Limiting Amount	2.3352	lbs. per da	<u>y</u>		ļ
		ļ	ļ	ļ	ļ	
C.	ALLOCATION TO INDUSTRIES				ļ	<u> </u>
				<u> </u>		
	Total Allowable Influent Loading	2.3352	lbs. per da	у	ļ	
	Loading Attributable to Domestic					
	Sources	1.05084	llbs. per da	у		
	Mass Loading Available					
	for Industrial Loading	1.28436	lbs. per da	у	ļ	
	Max. Allowable Conc. based		1			
	on Mass Loading	1.1	mg/l		Ļ	
	LARRY Allowable (Cone beend	1		1		1
	Max. Allowable Conc. based	1 -				1
	on Background Conc.		mg/l		ļ	
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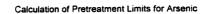
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'ollutant:	Aluminum				<u> </u>	
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	BACKGROUND INFORMATION					
	Pollutant of Concern	Aluminum				
	Avg. Background Conc.:		mg/l	(Assumed)		<u> </u>
	Industrial Contribution:	10%				
	Plant Design Capacity:		MGD		ļ	
	Domestic Portion		MGD		<u> </u>	
	Total Domestic Loading of Pollutant:	1.05084	pounds per o	lay		
3	CALCULATION OF HEADWORKS			ļ		
	LOADING FOR:	Aluminum		ļ	ļ	
	1 Inhibition of Activated Sludge Proces	8			L	
	Inhibiting Concentration:	N.A.	mg/i	1		
	Influent Limiting Concentration:	N.A.	mg/l			
	Influent Limiting Mass Loading:	#VALUE!	pounds per o	lay		
	2 Max. Allowable Mass Loading to Me	et Class III W	ater Quality			
		1				
	7Q10 of Lake Lena Run	0	mgd			
	Max. Q of Effluent	0.65	mgd		1	
	Dilution Factor	1				
	Limiting WQ Concentration	N.A.	mg/l		1	
	Maximum Effluent Conc.	#VALUE!	mg/l			
	Reduction of Pollutant in POTW	0%	based on Pla	ant Analyses		
	Maximum Influent Conc.	#VALUE!	mg/l		1	
	Influent Mass Loading	#VALUE!	pounds per o	lay	1	
			1		1	
	3 Max. Allowable Mass Loading to Pro	tect Effluent S	Sprayfield			
		Long-term			Short-term	1
	Maximum Effluent Concentration		mg/l		20	mg/l
	Reduction of Pollutant in POTW	0%	based on Pla	ant Analyses	0	
	Maximum Influent Conc.		mg/l	<u>_</u>	20	Img/I
	Influent Mass Loading	58.38	pounds per o	lav	233.52	pounds per day
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			1	1	1	1 1
	4 Max. Allowable Mass Loading to Mer	t Sludae Crit	ería			
	4 Max. Allowable Mass Loading to Med			dry solids		
	Limiting Concentration	et Sludge Crit N.A.	ería mg/kg	dry solids		
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg			
	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)		
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd			
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day kg/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4%	mg/kg cf/day gpd L/day kg/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	mg/kg cf/day gpd L/day kg/day kg/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per day			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day			
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	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day	(design)	#VALUE!	lbs. per day
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	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12	lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12 150.12 1.05084	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12 150.12 1.05084	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084 57.32916	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12 1.05084 149.0692	Ibs. per day Ibs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084 57.32916	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12 150.12 1.05084	Ibs. per day Ibs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 1.05084 57.32916 49.1	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12 1.05084 149.0692 127.6714	Ibs. per day Ibs. per day
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 58.38 58.38 58.38 1.05084 57.32916 49.1 0.1	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design)	#VALUE! #VALUE! 233.52 #VALUE! 150.12 1.05084 149.0692 127.6714	Ibs. per day Ibs. per day Img/I



	Arsenic		,				1
	BACKGROUND INFORMATION						
• • • • • • • • • • • • • • • • • • • •	Pollutant of Concern	Arsenic					
	Avg. Background Conc.:	0.001	ma/i	(detection limit)			
	Industrial Contribution:	10%	+	(00.000.000.000.000)			
	Plant Design Capacity:		MGD				
	Domestic Portion		MGD				
	Total Domestic Loading of Pollutant:		pounds pe	r dav			
	Total Domestic Loading of Politicant.	0.0103084	pounds pe	lay			
B.	CALCULATION OF HEADWORKS						
	LOADING FOR:	Arsenic					
	I Inhibition of Activated Sludge Proces	S					
	Inhibiting Concentration:		mg/l				
	Influent Limiting Concentration:		mg/l				
	Influent Limiting Mass Loading:	0.5838	pounds pe	r day			
	2 Max. Allowable Mass Loading to Mee	t Class III W	ater Quality				
			<b>_</b>				
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent		mgd				
	Dilution Factor						
		1				·	
	Limiting WQ Concentration		mg/l	<u> </u>			
	Maximum Effluent Conc.		mg/i				
	Reduction of Pollutant in POTW			Plant Analyses			
	Maximum Influent Conc.		mg/l				
	Influent Mass Loading	0.5838	pounds pe	r day			
	3 Max. Allowable Mass Loading to Pro	ect Effluent S	Sprayfield	1			
	<b>_</b>	Long-term	1		Short-term		
	Maximum Effluent Concentration		mg/l			mg/l	
	Reduction of Pollutant in POTW			Plant Analyses	0		
	Maximum Influent Conc.		mg/l	.entranayoos		mg/l	
			111501				
		4 4070	Inounda	r day			day
	Influent Mass Loading	1.1676	pounds pe	r day		pounds per	'day
				r day			day
	4 Max. Allowable Mass Loading to Mer	at Sludge Crit	eria				day
	4 Max. Allowable Mass Loading to Mer Limiting Concentration	at Sludge Crit		r day dry solids			' day
	4 Max. Allowable Mass Loading to Mer	at Sludge Crit	eria				'day
	4 Max. Allowable Mass Loading to Mer Limiting Concentration	at Sludge Crit 41	eria				day
	4 Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal	et Sludge Crit 41 1047	eria mg/kg cf/day	dry solids			day
4	4 Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal	at Sludge Crit 41 1047 7831.56	eria mg/kg cf/day lgpd	dry solids			day
	4 Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal	at Sludge Crit 41 1047 7831.56 29642.455	eria mg/kg cf/day lgpd L/day	dry solids			day
	4 Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal (wet solids):	at Sludge Crit 41 1047 7831.56 29642.455 29642.455	eria mg/kg cf/day igpd iL/day kg/day	dry solids			day
	Max. Allowable Mass Loading to Meri Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration	at Sludge Crit 41 1047 7831.56 29642.455	eria mg/kg cf/day igpd iL/day kg/day	dry solids			
	Max. Allowable Mass Loading to Mea Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal	at Sludge Crit 41 1047 7831.56 29642.455 29642.455 4%	eria mg/kg cf/day igpd iL/day kg/day	dry solids			
	Max. Allowable Mass Loading to Meri Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982	eria mg/kg cf/day igpd iL/day kg/day kg/day	dry solids			
	Max. Allowable Mass Loading to Mea Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal	t Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626	eria mg/kg cf/day igpd iL/day kg/day kg/day mg/day	dry solids (design)			
	Max. Allowable Mass Loading to Meri Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis)	t Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626	eria mg/kg cf/day igpd iL/day kg/day kg/day	dry solids (design)			
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	at Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736	eria mg/kg cf/day igpd iL/day kg/day kg/day mg/day lbs. per da	dry solids (design) y	23.352		
	Max. Allowable Mass Loading to Meri Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge     Removal of Pollutant in POTW	at Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736	eria mg/kg cf/day igpd iL/day kg/day kg/day mg/day lbs. per da	dry solids (design)	23.352		
	Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	et Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736 33%	eria mg/kg cf/day igpd iL/day kg/day kg/day mg/day lbs. per da	dry solids (design) y Site Discharges 1	23.352		
	Max. Allowable Mass Loading to Meri Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge     Removal of Pollutant in POTW	et Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736 33%	eria mg/kg cf/day igpd i//day kg/day kg/day mg/day libs. per da iCERCLA S	dry solids (design) y Site Discharges 1	23.352		
	Max. Allowable Mass Loading to Meri Limiting Concentration Sludge Flow to Disposal (wet solids):     Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge     Removal of Pollutant in POTW Allowable Influent Mass Loading	et Sludge Crit 41 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736 33% 0.3247685	eria mg/kg cf/day igpd i//day kg/day kg/day mg/day libs. per da iCERCLA S	dry solids (design) y Site Discharges 1	23.352	pounds per	
	Max. Allowable Mass Loading to Mea Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor	et Sludge Crit 41 1047 7831.56 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736 33% 0.3247685 Long-term	eria mg/kg igpd iL/day kg/day kg/day lkg/day lbs. per da iCERCLA S lbs. per da	dry solids (design) y y site Discharges 1 y	23.352	pounds per	
	Max. Allowable Mass Loading to Mea Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	t Sludge Crit 41 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736 333% 0.3247685 Long-term 0.5838	eria mg/kg igpd iL/day kg/day kg/day lkg/day lbs. per da iDs. per da	dry solids (design) y Site Discharges 1 y y	23.352	Manual A	
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	Max. Allowable Mass Loading to Met Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Studge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	et Sludge Crit 41 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 48613.626 0.1071736 0.1071736 0.3247685 0.3247685 0.3247685 0.3247685 0.3247685	eria mg/kg cf/day igpd iL/day kg/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da libs. per da	dry solids (design) y y Site Discharges 1 y y y y y y y y y y y y y y y y	23.352 	Manual Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
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Pollutant:	Beryllium			· · · · · · · · · · · · · · · · · · ·			
	RAOKOROLINE INFORMATION		· · · · · ·				
	BACKGROUND INFORMATION						
	Pollutant of Concern	Beryllium		(			
	Avg. Background Conc.:		mg/l	(assumed)	+		
	Industrial Contribution:	10%					
	Plant Design Capacity:		MGD				
	Domestic Portion		MGD	1			
	Total Domestic Loading of Pollutant:	0	pounds per	roay	+		
	CALCULATION OF HEADWORKS						
	LOADING FOR:	Beryllium					
1	Inhibition of Activated Sludge Proces	\$	1				
	Inhibiting Concentration:	N.A.	mg/l	ļ			
	Influent Limiting Concentration:	N.A.	mg/l	l			
	Influent Limiting Mass Loading:	#VALUE!	pounds pe	r day			
		 		l	L		
2	Max. Allowable Mass Loading to Mee	et Class III W	ater Quality				
	· · · · · · · · · · · · · · · · · · ·						
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent	0.65	mgd				
	Dilution Factor	1					
	Limiting WQ Concentration	0.00013			T	· · · · · · · · · · · · · · · · · · ·	
	Maximum Effluent Conc.	0.00013		1	†		
	Reduction of Pollutant in POTW			Plant Analyses	1		· · · ·
	Maximum Influent Conc.	0.00013		, <b>,,</b>	+		
	Influent Mass Loading		pounds per	r dav	†	<u>   </u>	
	Louing	0.0010110	poundo po		<u>+</u>		
3	Max. Allowable Mass Loading to Pro	tect Effluent S	Soravfield		+		
	max. Monuble mass coading to Pro	Long-term	i		Short-term		
	Maximum Effluent Concentration		mg/i	1		mg/l	
	Reduction of Pollutant in POTW			Plant Analyses	· · · · · · · · · · · · · · · · · · ·		
	Maximum Influent Conc.	·	isaseu on r	-ianit Analyses	0		
			ime/	1	0.5		
4	Influent Mass Loading Max. Allowable Mass Loading to Mee	1.1676 et Sludge Crit	+		<u> </u>	mg/l pounds per	day
4	Influent Mass Loading	1,1676	pounds pe	r day dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration	1.1676 et Sludge Crit N.A.	i pounds per eria		<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	1.1676 et Sludge Crit N.A.	pounds per eria mg/kg cf/day	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	1.1676 et Sludge Crit N.A. 1047	pounds per eria mg/kg cf/day gpd	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	1.1676 et Sludge Crit N.A. 1047 7831.56	eria mg/kg cf/day gpd L/day	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455	pounds per eria mg/kg cf/day gpd L/day kg/day	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):	1.1676 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455	pounds per eria mg/kg cf/day gpd L/day kg/day	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	1.1676 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455	pounds pe eria mg/kg cf/day gpd L/day kg/day	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4%	pounds per eria mg/kg cf/day gpd L/day kg/day kg/day	dry solids	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1.1676 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	pounds per eria mg/kg cf/day gpd L/day kg/day kg/day	dry solids (design)	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1.1676 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day mg/day	dry solids (design)	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1.1676 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	pounds per eria mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design)	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	pounds per eria mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	dry solids (design) 	<u> </u>		day
4	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	pounds per eria mg/kg cf/day gpd LL/day kg/day kg/day lkg/day lbs. per da	dry solids (design) 	<u> </u>		day
	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	pounds per eria mg/kg cf/day gpd LL/day kg/day kg/day lkg/day lbs. per da	dry solids (design) 	<u> </u>		day
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5	Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0	pounds per eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 0.001518 0.001518 0.001518 0.001518	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
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5	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0	pounds per eria mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 0.001518 0.001518 0.001518 0.001518 0.001518	pounds per pounds per lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
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5	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1.1676 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.0015179 0.0015179 0.0015179 0.0015179	pounds per eria mg/kg cf/day gpd L/day kg/day lbs. per da lbs. per da	dry solids (design) y y y y y y y y y y y y y y y y y y y	5.838 5.838 5.838 5.838 0.001518 5.838 0.001518 0.001518 0.001518 0.001518	pounds per pounds per lbs. per day lbs. per day	

where is monthly avs?

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Pollutant:	Boron						
			,				
۹.	BACKGROUND INFORMATION						
	Pollutant of Concern	Boron		(1004 100)			
	Avg. Background Conc.:	0.34		(1994 testing)			
	Industrial Contribution: Plant Design Capacity:		MGD	· · · · · · · · · · · · · · · · · · ·			
	Domestic Portion		MGD				
	Total Domestic Loading of Pollutant:		pounds pe	r dav			
3.	CALCULATION OF HEADWORKS			<u> </u>			
	LOADING FOR:	Boron	1				
1	Inhibition of Activated Sludge Proces	S					
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A. #VALUE!	mg/i pounds pe	t day			
	Innuent Limiting Mass Loading.	#VALUE!	pounus pe	luay			
2	Max. Allowable Mass Loading to Med	t Class III W	ater Quality				
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent		mgd				
	Dilution Factor	1					
	Limiting WQ Concentration	N.A.	mg/l				
	Maximum Effluent Conc.	#VALUE!					
	Reduction of Pollutant in POTW			Plant Analyses			
	Maximum Influent Conc.	#VALUE!		 - dau			
	Influent Mass Loading	#VALUE!	pounds pe	rday		· · · ·	
	Max. Allowable Mass Loading to Pro		Somufield				
	Max. Allowable Mass Loading to Pio	Long-term			Short-term		
	Maximum Effluent Concentration		img/l		· · · ·	mg/l	
	Reduction of Pollutant in POTW			Plant Analyses	0		
	Maximum Influent Conc.		mg/l		2	mg/l	
	Maximum Influent Conc. Influent Mass Loading	0.75	<u> </u>			mg/l pounds per	day
	Influent Mass Loading	0.75 5.6295	mg/l pounds pe				day
4	Influent Mass Loading Max. Allowable Mass Loading to Med	0.75 5.6295 et Sludge Crit	mg/l pounds pe eria	r day			day
4	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration	0.75 5.6295	mg/l pounds pe				day
4	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal	0.75 5.6295 et Sludge Crit N.A.	mg/l pounds pe eria mg/kg	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration	0.75 5.6295 et Sludge Crit N.A. 1047	mg/l pounds pe eria mg/kg cf/day	r day			day
4	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56	mg/l pounds pe eria mg/kg cf/day gpd	r day dry solids			r day
4	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455	mg/l pounds pe eria mg/kg cf/day gpd L/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal (wet solids):	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.75 5.6295 at Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day	r day dry solids			day
4	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day mg/day	r day dry solids (design)			day
4	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day	r day dry solids (design)			day
4	Influent Mass Loading Max. Allowable Mass Loading to Met Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	r day dry solids (design)			day
4	Influent Mass Loading Max. Allowable Mass Loading to Met Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	r day dry solids (design) y			day
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	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da	r day dry solids (design) y y	15.012	pounds per	
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	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% 5.6295	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y	15.012 Short-term 15.012	Ibs. per da Ibs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% 5.6295	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y	15.012 Short-term 15.012	Ibs. per da Ibs. per da Ibs. per da	
5	Influent Mass Loading Max. Allowable Mass Loading to Met Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! 0% #VALUE! 0% 5.6295	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y	15.012 Short-term 15.012	Ibs. per da Ibs. per da Ibs. per da	
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5	Influent Mass Loading Max. Allowable Mass Loading to Met Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 5.6295 5.6295 5.6295	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y y y y y	15.012 Short-term 15.012 15.012	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
	Influent Mass Loading Max. Allowable Mass Loading to Met Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 5.6295 5.6295 5.6295	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y y y y y	15.012 Short-term 15.012 15.012	Ibs. per da Ibs. per da Ibs. per da Ibs. per da	
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5	Influent Mass Loading Max. Allowable Mass Loading to Mea Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! #VALUE! #VALUE! 5.6295 5.6295 5.6295 2.296836 3.332664	mg/l pounds pe eria mg/kg df/day gpd L/day kg/day mg/day lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y y y y y	15.012 Short-term 15.012 15.012 2.296836 12.71516	pounds per pounds per lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! #VALUE! #VALUE! 5.6295 5.6295 5.6295 2.296836 3.332664	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day kg/day lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y y y y y	15.012 Short-term 15.012 15.012 2.296836	pounds per pounds per lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Influent Mass Loading Max. Allowable Mass Loading to Mer Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Max. Allowable Conc. based on Mass Loading Max. Allowable Conc. based	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 20962.296 5.6295 5.6295 5.6295 2.296836 3.332664 4.44	mg/l pounds pe eria mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y y y y y	15.012 Short-term 15.012 15.012 2.296836 12.71516 16.94	Ibs. per da Ibs. per da	y y y
5	Influent Mass Loading Max. Allowable Mass Loading to Med Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.75 5.6295 et Sludge Crit N.A. 1047 7831.56 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 29642.455 20962.296 5.6295 5.6295 5.6295 2.296836 3.332664 4.44 0.34	mg/l pounds pe eria mg/kg df/day gpd L/day kg/day mg/day lbs. per da lbs. per da	r day dry solids (design) y y y y y y y y y y y y y y y	15.012 Short-term 15.012 15.012 2.296836 12.71516 16.94	Ibs. per da Ibs. per da	y y y

### Calculation of Pretreatment Limits for BOD



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	BOD	·		<u> </u>	
	BACKGROUND INFORMATION				
·····	Pollutant of Concern	BOD			
	Avg. Background Conc.:	225	mg/l	(routine tes	sting)
	Industrial Contribution:	10%		· · · · ·	
	Plant Design Capacity:	0.9	MGD		
	Domestic Portion	0.81	MGD		
	Total Domestic Loading of Pollutant:	1519.965	pounds per	r day	
				[	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	BOD			
1	Inhibition of Activated Sludge Process	8			
	Inhibiting Concentration:	300	mg/l		
	Influent Limiting Concentration:		mg/i		
	Influent Limiting Mass Loading:	2251.8	pounds per	r day	
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
	7Q10 of Lake Lena Run	0	mgd		1
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	N.A.	mg/ł		
	Maximum Effluent Conc.	#VALUE!	mg/i		
	Reduction of Pollutant in POTW	0%	based on F	Plant Analys	es
	Maximum Influent Conc.	#VALUE!	mg/l		
	Influent Mass Loading	#VALUE!	pounds per	r day	
3	Max. Allowable Mass Loading to Prot	tect Effluent S	prayfield		
		l	İ		
	Maximum Effluent Concentration	N.A.	mg/l	· · · · · · · · · · · · · · · · · · ·	
	Reduction of Pollutant in POTW	0%	based on F	Plant Analys	es
	Maximum Influent Conc.	#VALUE!	mg/l		
	Influent Mass Loading	#VALUE!	pounds per	r day	1
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal	1			
	(wet solids):	1047	cf/day	(design)	
		1047 7831.56		(design)	
			gpd	(design)	
		7831.56	gpd L/day	(design)	
		7831.56 29642.4546	gpd L/day kg/day	(design)	
	(wet solids):	7831.56 29642.4546 29642.4546	gpd L/day kg/day	(design)	
	(wet solids): Final solids concentration	7831.56 29642.4546 29642.4546	gpd L/day kg/day	(design)	
	(wet solids): Final solids concentration Sludge Flow to Disposal	7831.56 29642.4546 29642.4546 4%	gpd L/day kg/day kg/day	(design)	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	gpd L/day kg/day kg/day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	gpd L/day kg/day kg/day mg/day		
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	gpd L/day kg/day kg/day mg/day Ibs. per da	y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	gpd L/day kg/day kg/day mg/day Ibs. per da	y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE!	gpd L/day kg/day kg/day mg/day Ibs. per da	y	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0%	gpd L/day kg/day mg/day Ibs. per da Ibs. per da	y	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE!	gpd L/day kg/day mg/day Ibs. per da Ibs. per da	y y y	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 2251.8 #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	
5	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE!	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! 2251.8	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0% #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! 2251.8	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! #VALUE! 2251.8	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! #VALUE! 2251.8	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! 2251.8 2251.8 1519.965	gpd L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y y y y y	
5 5 C.	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! 2251.8 2251.8 1519.965	gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! 2251.8 2251.8 1519.965 731.835	gpd L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! 2251.8 2251.8 1519.965 731.835	gpd L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y y y y y	
	(wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 2251.8 #VALUE! #VALUE! #VALUE! #VALUE! #VALUE! 2251.8 2251.8 1519.965 731.835 975	gpd L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y y y y y	

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	Cadmium		ļ		ļ
		· · · · · · · · · · · · · · · · · · ·	<u> </u>		
	BACKGROUND INFORMATION				
	Pollutant of Concern	Cadmium	 	(detection	limait\
	Avg. Background Conc.: Industrial Contribution:	0.001		(delection	
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		<u> </u>
	Total Domestic Loading of Polutant:		pounds pe	r day	1
	CALCULATION OF HEADWORKS				
	LOADING FOR:	Cadmium		ļ	1
		l			
1	Inhibition of Activated Sludge Proces	3	<u> </u>	 	
		0.5			<u> </u>
	Inhibiting Concentration:		mg/l mg/l		
	Influent Limiting Mass Loading:		pounds pe	r dav	
			<u></u>		†
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		1
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run	0	mgd		
	Max. Q of Effluent		imgd		
	Dilution Factor	1			<u> </u>
	Limiting WQ Concentration	3.03E-03			
	Maximum Effluent Conc. Reduction of Pollutant in POTW	0.003033	Piant Analy		
	Maximum Influent Conc.	0.006066		1303	
	Influent Mass Loading	0.07082662		r dav	<u> </u>
-		0.01002002	poundo po		
3	Max. Allowable Mass Loading to Prot	ect Effluent S	prayfield	[	
	Maximum Effluent Concentration		mg/l		
	Reduction of Pollutant in POTW		based on F	Plant Analys	ies
	Maximum Influent Conc.	0.01818182			
	Influent Mass Loading	0.21229091	pounds pe	r day	
_	Max. Allowable Mass Loading to Mee	t Sludge Crite			
	Limiting Concentration		img/kg	dry solids	
	Sludge Flow to Disposal			diy solida	
			cf/day	(design)	
	Sludge Flow to Disposal		cf/day		
	Sludge Flow to Disposal	1047 7831.56 29642.4546	cf/day Igpd L/day		
	Sludge Flow to Disposal (wet solids):	1047 7831.56 29642.4546 29642.4546	cf/day Igpd L/day Ikg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration	1047 7831.56 29642.4546	cf/day Igpd L/day Ikg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.4546 29642.4546 4%	cf/day Igpd L/day Ikg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818	cf/day Igpd L/day kg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292	cf/day gpd L/day kg/day kg/day mg/day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818	cf/day gpd L/day kg/day kg/day mg/day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292	cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562	cf/day Igpd L/day kg/day kg/day mg/day libs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45%	cf/day Igpd L/day kg/day kg/day mg/day libs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582	cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.838	cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da	(design) y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.838 0.07082662	cf/day gpd L/day kg/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.838 0.07082662 0.21229091	cf/day gpd L/day kg/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 5.838 0.07082662 0.21229091 0.22654582	cf/day igpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y	
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 5.838 0.07082662 0.21229091	cf/day igpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 5.838 0.07082662 0.21229091 0.22654582	cf/day igpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 5.838 0.07082662 0.21229091 0.22654582	cf/day igpd L/day kg/day kg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 5.838 0.07082662 0.21229091 0.22654582	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da	(design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 0.21229091 0.22654582 0.07082662 0.21229091	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da	(design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 0.21229091 0.22654582 0.07082662 0.07082662	cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Arnount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582 0.21229091 0.22654582 0.07082662 0.07082662 0.0105084	cf/day igpd L/day kg/day ikg/day ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 0.21229091 0.22654582 0.07082662 0.07082662	cf/day igpd L/day kg/day ikg/day ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Altowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1047 7831.56 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 0.27082662 0.21229091 0.22654582 0.07082662 0.07082662 0.07082662	cf/day gpd L/day kg/day mg/day libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 0.22654582 0.22654582 0.21229091 0.22654582 0.07082662 0.07082662 0.0105084	cf/day gpd L/day kg/day mg/day libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 0.2122991 0.22654582 0.07082662 0.2122991 0.22654582 0.07082662 0.07082662 0.0105084 0.06031822 0.05166	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 46242.2292 0.10194562 45% 0.22654582 0.21229091 0.22654582 0.07082662 0.21229091 0.22654582 0.07082662 0.07082662 0.0105084 0.06031822 0.05166 0.001	cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) y y y y y y y y y y y y y	





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Pollutant:	Chromium	<del>  ,</del>			<u> </u>
	PACKOROLIND INFORMATION	ļ		<u> </u>	
<b>\</b>	BACKGROUND INFORMATION Pollutant of Concern	Chromium			<u> </u>
	Avg. Background Conc.:		mg/l	(detection	limit)
	Industrial Contribution:	10%	···· · · · · · · · · · · · · · · · · ·	(usiocaon	
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Polutant:	L	pounds per	r dav	1
					1
B.	CALCULATION OF HEADWORKS				1
	LOADING FOR:	Chromium			
					1
1	Inhibition of Activated Sludge Proces	S			
	Inhibiting Concentration:	+	mg/l		
	Influent Limiting Concentration:		mg/l	<u> </u>	
	Influent Limiting Mass Loading:	11.676	pounds per	r day	
	1	í	1	<u> </u>	<u> </u>
2	Max. Allowable Mass Loading to Mee	et Class III Wa	ter Quality		<u> </u>
		ļ			
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1			1
	Limiting WQ Concentration	5.00E-02			
	Maximum Effluent Conc.		mg/l		
	Reduction of Pollutant in POTW		based on F	Plant Analys	ies
	Maximum Influent Conc.	0.17241379		<u> </u>	
	Influent Mass Loading	2.01310345	pounds per	r day	ļ
			<u> </u>		
3	Max. Allowable Mass Loading to Pro	tect Effluent S	prayfield		
					L
	Maximum Effluent Concentration		mg/l	<u> </u>	1
	Reduction of Pollutant in POTW		based on F	lant Analys	es
	Maximum Influent Conc.	0.34482759			
	Influent Mass Loading	4.0262069	pounds per	r day	
			<u> </u>		
4	Max. Allowable Mass Loading to Mee			day salida	ļ
	Sludge Flow to Disposal	1200	mg/kg	dry solids	
	(wet solids):	1047	cf/day	(docine)	
		7831.56		(design)	
		29642.4546	The second second		+
	<u> </u>	29642.4546		<u> </u>	
	Final solids concentration	23042.4340		 	
	Sludge Flow to Disposal	470			
	(dry basis)	1185.69818	ka/day		1
	Mass Loading to Sludge	1422837.82			
	Allos Louding to Sludge	3.13678826		· · · · · · · · · · · · · · · · · · ·	
	· · · · · · · · · · · · · · · · · · ·	3.13070020	iba. per da	,	
	Removal of Pollutant in POTW	71%			
	Allowable Influent Mass Loading	4.41801163		·	
				·	
5	Determination of Limiting Factor	1	<u> </u>		<u> </u>
	Inhibition of Activated Sludge	11.676	ibs. per day	v	
	Class III Water Quality Standards	2.01310345			† ••• • •
	Protection of Effluent Sprayfield		lbs. per da		
	Protection of Sludge Disposal	4.41801163			
	Limiting Amount	2.01310345			
		1	 	i	i –
	ALLOCATION TO INDUSTRIES	1	i	i	t
<u>C.</u>	ALLOCATION TO INDUSTRIES	+			1
C	ALLOCATION TO INDUSTRIES			v	1
C	Total Allowable Influent Loading	2.01310345	ibs. per da		i
C		2.01310345	ibs. per day	·	
C	Total Allowable Influent Loading				
C.	Total Allowable Influent Loading Loading Attributable to Domestic		ibs. per dar ibs. per dar		
C	Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0.420336	lbs. per da	y	
C	Total Allowable Influent Loading Loading Attributable to Domestic Sources		lbs. per da	y	
C	Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0.420336 1.59276745	lbs. per da lbs. per da	y	
C	Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0.420336	lbs. per da lbs. per da	y	
C	Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0.420336 1.59276745 1.36413793	lbs. per da lbs. per da	y	

Ditto

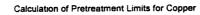
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1					i i		
	BACKGROUND INFORMATION						
	Pollutant of Concern	Cobalt					
	Avg. Background Conc.:	0.005	mg/l	(detection limit)			
	Industrial Contribution:	10%		··			
	Plant Design Capacity:	1.4	MGD				
	Domestic Portion		MGD				
			pounds per	r dav			
	Total Domestic Loading of Polutant:	0.052542	pounds per	luay			
	CALCULATION OF HEADWORKS						
	LOADING FOR:	Cobalt					
1	Inhibition of Activated Sludge Proces	s					
	Inhibiting Concentration:	N.A.	mg/l				
	Influent Limiting Concentration:	N.A.	mg/l				
	Influent Limiting Mass Loading:		pounds per	r dav			
	initiating made country.						
	Max. Allowable Mass Loading to Mee		tos Quality				-
2	Max. Allowable mass Loading to mee	at Class III wa	ater Quality				
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent	0.65	mgd				
	Dilution Factor	1		1	1		
	Limiting WQ Concentration	3.03E-03					
	Maximum Effluent Conc.	N.A.	mg/l				
	Reduction of Pollutant in POTW			Plant Analyses			
				ant Analyses			
	Maximum Influent Conc.	#VALUE!		l			
	Influent Mass Loading	#VALUE!	pounds pe	r day			
3	Max. Allowable Mass Loading to Prot	tect Effluent S	Sprayfield				
			1	1	Short-term	1	
	Maximum Effluent Concentration	0.05	mg/l		5	mg/l	
	Reduction of Pollutant in POTW		· · · · · · · · · · · · · · · · · · ·	lant Analyses	0		
	Maximum Influent Conc.		mg/l	1		mg/l	
			pounds pe	 			
	Influent Mass Loading	0.5658	pounas pe	roay	50.30	pounds per	aay
						··········	
				· · · · · · · · · · · · · · · · · · ·			
4	Max. Allowable Mass Loading to Mee	et Sludge Crit	eria				
4	Max. Allowable Mass Loading to Mee			dry solids			
4	Limiting Concentration	et Sludge Crit N.A.	eria mg/kg	dry solids			
4	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg				
4	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)			
4	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd				
4	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day				
4	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day				
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day kg/day				
4	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day				
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4%	mg/kg cf/day gpd L/day kg/day				
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	mg/kg cf/day gpd L/day kg/day kg/day				
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)			
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day	(design)			
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design)			
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design) (design) y			
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design) (design) y			
4	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design) (design) y			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design) (design) y	Short-term		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day ibs. per da ibs. per da	(design) y y			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da lbs. per da	(design) y y y		lbs. per da	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da	(design) (design) y y y y	Short-term	lbs. per da lbs. per da	y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y	Short-term	lbs. per da lbs. per da lbs. per da	y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	Short-term 58.38	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	Short-term 58.38	lbs. per da lbs. per da lbs. per da	y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	Short-term 58.38	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	Short-term 58.38	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Elfluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0%	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y	Short-term 58.38	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y	Short-term 58.38 58.38	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y	Short-term 58.38 58.38	lbs. per da lbs. per da lbs. per da lbs. per da	y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 58.38	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 58.38	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.052542	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 0.052542	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.052542	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 0.052542	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.5838 0.5838 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 58.38 0.052542 58.32746	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0.5838 0.5838 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 0.052542	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838 0.5838 0.5838	mg/kg cf/day gpd L/day kg/day ikg/day ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 0.052542 58.32746 49.955	Ibs. per da Ibs. per da	y y y y y y y
5	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! 0% #VALUE! 0% 0.5838 0.5838 0.5838 0.5838 0.5838 0.552542 0.531258 0.455 0.005	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	Short-term 58.38 58.38 58.38 0.052542 58.32746	Ibs. per da Ibs. per da	y y y y y y y

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Pollutant:			,	
A.	BACKGROUND INFORMATION			
	Pollutant of Concern	Copper		
	Avg. Background Conc.:	0.08	mg/l	Avg. of conc. in collection system
	Industrial Contribution:	10%	1	
	Plant Design Capacity:		MGD	
	Domestic Portion		MGD	
	Total Domestic Loading of Polutant:	0.840672	pounds pe	r day
B.	CALCULATION OF HEADWORKS			
	LOADING FOR:	Copper		
1	Inhibition of Activated Sludge Proces	S		
				(WEF reports inhibition of AS @ 1 mg/I
	Inhibiting Concentration:	0.24	mg/l	and inhibition of Nit. @ 0.05 to 0.48 mg/l)
	Influent Limiting Concentration:	0.24	mg/l	
	Influent Limiting Mass Loading:	2.80224	pounds pe	r day
2	Max. Allowable Mass Loading to Mee	et Class III W	ater Quality	
			1	
	7Q10 of Lake Lena Run	0	mgd	
	Max. Q of Effluent		mgd	
	Dilution Factor	1		
-	Limiting WQ Concentration	3.00E-02		· · · · · · · · · · · · · · · · · · ·
	Maximum Effluent Conc.		mg/l	
	Reduction of Pollutant in POTW			Plant Analyses
4m,	Maximum Influent Conc.		mg/i	
	Influent Mass Loading		pounds pe	r dav
	mildent Mass Coading	7.0000	pounds po	
	Max. Allowable Mass Loading to Pro	tect Effuent	Spraufield	· · · · · · · · · · · · · · · · · · ·
3	Max. Allowable Mass Loading to Pro		sprayneid	
	Maximum Effluent Concentration	Long-term	mg/l	
	Reduction of Pollutant in POTW			Plant Analyses
	Maximum Influent Conc.			Plant Analyses
			mg/l	
	Influent Mass Loading	45.704	pounds pe	r day
4	Max. Allowable Mass Loading to Med	** ************************************		
••	Limiting Concentration	1500	mg/kg	dry solids
	Sludge Flow to Disposal			(4
	(wet solids):		cf/day	(design)
		7831.56		
		29642.455		
		29642.455		
	Final solids concentration	4%		ļ
	Sludge Flow to Disposal			
<i></i>	(dry basis)	1185.6982		
	Mass Loading to Sludge	1778547.3		
		3.9209853	lbs. per da	<u>у</u>
			1	······
	Removal of Pollutant in POTW	95%		
	Allowable Influent Mass Loading	4.127353	libs. per da	<u>y</u>
5	Determination of Limiting Factor	Long-term	}	+ Monthly arg.
	Inhibition of Activated Sludge	2.80224	lbs. per da	У
	Class III Water Quality Standards	7.0056	lbs. per da	y J
	Protection of Effluent Sprayfield	46.704	ibs. per da	y V
	Protection of Sludge Disposal	4.127353	lbs. per da	y Daily Max P
	Limiting Amount	2.80224	lbs. per da	y Daily Incom
_				
C.	ALLOCATION TO INDUSTRIES			
	Total Allowable Influent Loading	2.80224	lbs. per da	y
	Loading Attributable to Domestic			,
	Sources	0.840672	lbs. per da	iy l
**	Mass Loading Available	1	1	
	for Industrial Loading	1.961568	lbs. per da	v /
	Max. Allowable Conc, based			f//
	on Mass Loading	1 60	ímg/i	
	Max. Allowable Conc. based	1.00	1118/1	
	on Background Conc.	0.00	Ima/	
			img/i	
				······
	Program Limit	1.68	Img/I	limit?

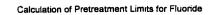




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Pollutant:	Cyanide	· . ,			
A.	BACKGROUND INFORMATION				
<u>.</u>	Pollutant of Concern	Cyanide			
	Avg. Background Conc.:		mg/l	(detection	imit)
	Industrial Contribution:	10%		(detection)	
			MGD		
	Plant Design Capacity:				
	Domestic Portion		MGD		-
	Total Domestic Loading of Polutant:	0.105084	pounds per	day	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Cyanide			
1	Inhibition of Activated Sludge Proces	\$			
		1			
	Inhibiting Concentration:	0.1	mg/l		
	Influent Limiting Concentration:	0.1	mg/l		
	Influent Limiting Mass Loading:	1.1676	pounds per	day	l
2	Max. Allowable Mass Loading to Mee	et Class III Wa	ter Quality		
					<u> </u>
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	5.20E-03	mg/i		
	Maximum Effluent Conc.	0.0052	mg/l		
	Reduction of Pollutant in POTW	56%	based on F	lant Analys	es
	Maximum Influent Conc.	0.01181818	mg/l		
	Influent Mass Loading	0.13798909	pounds pe	r day	
	1				
3	Max. Allowable Mass Loading to Pro	tect Effluent S	prayfield		
	Maximum Effluent Concentration	N.A.	mg/l		
	Reduction of Pollutant in POTW	56%	based on F	Plant Analys	es
	Maximum Influent Conc.	#VALUE!			
	Influent Mass Loading	#VALUE!	pounds per	r day	
4	Max. Allowable Mass Loading to Mee		ria		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal				
	(wet solids):	1047	cf/day	(design)	
		7831.56	apd		
		29642.4546	L/day		
			L/day		
	Final solids concentration	29642.4546	L/day kg/day		
	Final solids concentration Sludge Flow to Disposal	29642.4546 29642.4546	L/day kg/day	·····	
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818	L/day kg/day kg/day		
	Sludge Flow to Disposal	29642.4546 29642.4546 4%	L/day kg/day kg/day		
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818 #VALUE!	L/day kg/day kg/day	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 29642.4546 4% 1185.69818 #VALUE!	L/day kg/day kg/day mg/day	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.4546 29642.4546 4% 1185.69818 #VALUE!	L/day kg/day kg/day mg/day lbs. per da	y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56%	L/day kg/day kg/day mg/day lbs. per da		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56%	L/day kg/day kg/day mg/day Ibs. per da		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! \$6% #VALUE!	L/day kg/day mg/day Ibs. per da Ibs. per da	y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da	y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.4546 29642.4546 4% 1185.69818 #VALUE! \$6% #VALUE!	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909	L/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909	L/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909	L/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909 0.13798909 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909 0.13798909 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 56% #VALUE! 1.1676 0.13798909 0.13798909 0.13798909 0.13798909	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	
· · · · · · · · · · · · · · · · · · ·	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0.13798909 0.13798909 0.13798909 0.13798909 0.105084 0.03290509 0.02818182	L/day kg/day mg/day lbs. per da lbs. per da	y y y y y y y y	

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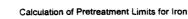
onutant:	Elugrido	1	;	1	1	1	
	Fluoride				1		
•	BACKGROUND INFORMATION						
	Pollutant of Concern	Fluoride	1			L	
	Avg. Background Conc.:	0.405	mg/l	1994 testing			
	Industrial Contribution:	10%					
	Plant Design Capacity:	1.4	MGD				
	Domestic Portion	1 26	MGD		1		
	Total Domestic Loading of Polutant:		pounds per	r dav	i	1 1	
	Total Domestic Loading of Polutant.	4.255502	pounds pe				
					ļ		
•	CALCULATION OF HEADWORKS						
	LOADING FOR:	Fluoride					
			1	l			
1	Inhibition of Activated Sludge Proces	S					
	d		1		1	1	- ^. ···
······································	Inhibiting Concentration:	N.A.	mg/l		1		
	Influent Limiting Concentration:	N.A.	mg/l				
				·			
	Influent Limiting Mass Loading:	#VALUE!	pounds per	r day			
		<u> </u>	i <u></u>				
2	Max. Allowable Mass Loading to Me	et Class III W	ater Quality				
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent		mad		1		
	Dilution Factor	0.05				<u> </u>	
	Limiting WQ Concentration	1.00E+01	+	•	·····	<u> </u>	
	Maximum Effluent Conc.		mg/l				
	Reduction of Pollutant in POTW			Plant Analyses	<u> </u>		
	Maximum Influent Conc.	10.940919	mg/l			1 1	
	Influent Mass Loading	127,74617	pounds per	r dav	1		
					1		
	Max. Allowable Mass Loading to Pro	tect Effluent 9	Soravfield				
	Inax. Allowable mass coading to FTO		prayneid		Short-term		
	569	Long-term				· · · · · · · · · · · · · · · · · · ·	
	Maximum Effluent Concentration		mg/l			mg/l	
	Reduction of Pollutant in POTW			Plant Analyses	9%		
	Maximum Influent Conc.	1.0940919	mg/l		16.48352		
	Influent Mass Loading	12.774617	pounds per	r day	192.4615	pounds per	dav
			<u>.</u>	i		· · · · ·	
	May Allowable Mass Londing to Ma	A Chuden Crit			<u> </u>		
4	Max. Allowable Mass Loading to Mer				<b> </b>	<b>├</b> ────┤	
	Limiting Concentration	N.A.	mg/kg	dry solids			
	Sludge Flow to Disposal	[	1		1		
	(wet solids):	1047	cf/day	(design)			
		7831.56	lapd			1	
	· · · · · · · · · · · · · · · · · · ·						
		29642.455		1			
		29642.455	L/day				
	Final solids concentration	29642.455	L/day kg/day				
	Final solids concentration		L/day kg/day				
	Sludge Flow to Disposal	29642.455 4%	L/day kg/day	1			
	Sludge Flow to Disposal (dry basis)	29642.455 4% 1185.6982	L/day kg/day kg/day				
	Sludge Flow to Disposal	29642.455 4% 1185.6982 #VALUE!	L/day kg/day kg/day mg/day				
	Sludge Flow to Disposal (dry basis)	29642.455 4% 1185.6982 #VALUE!	L/day kg/day kg/day	y			
	Sludge Flow to Disposal (dry basis)	29642.455 4% 1185.6982 #VALUE!	L/day kg/day kg/day mg/day	y			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.455 4% 1185.6982 #VALUE! #VALUE!	L/day kg/day kg/day mg/day lbs. per day	y			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.455 4% 1185.6982 #VALUE! #VALUE! 9%	L/day  kg/day  kg/day  mg/day  bs. per da				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.455 4% 1185.6982 #VALUE! #VALUE! 9%	L/day kg/day kg/day mg/day lbs. per day				
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.455 4% 1185.6982 #VALUE! #VALUE! 9%	L/day  kg/day  kg/day  mg/day  bs. per da				
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	29642.455 4% 1185.6982 #VALUE! #VALUE! 9%	L/day  kg/day   mg/day  bs. per day  bs. per day	Y	Short-term	in a	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE!	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	y y y		lbs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE!	L/day  kg/day   mg/day  bs. per day  bs. per day	y y y		in a	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	y y y	127.7462	lbs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day Ikg/day Ikg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y	127.7462	lbs. per day lbs. per day lbs. per day	_
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day Ikg/day Ikg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y	127.7462 192.4615	lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	127.7462 192.4615 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y	127.7462 192.4615 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617	L/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	127.7462 192.4615 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617	L/day kg/day kg/day lbs. per da lbs. per da	y y y y y y y	127.7462 192.4615 127.7462 127.7462	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617	L/day kg/day mg/day Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y	127.7462 192.4615 127.7462 127.7462	lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 4.255902	L/day kg/day mg/day ibs. per day ibs. per day	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 4.255902	L/day kg/day kg/day lbs. per da lbs. per da	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 4.255902	L/day kg/day mg/day ibs. per day ibs. per day	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.455 4% 1185.6982 #VALUE! #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 4.255902	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per da lbs. per da	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.455 4% 1185.6982 #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 4.255902 8.5187151	L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per da lbs. per da	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902 123.4903	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.455 4% 1185.6982 #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 12.774617 4.255902 8.5187151 7.295919	L/day kg/day kg/day lbs. per da lbs. per da	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902 123.4903 105.7642	Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	29642.455 4% 1185.6982 #VALUE! 9% #VALUE! 127.74617 12.774617 12.774617 12.774617 4.255902 8.5187151	L/day kg/day kg/day mg/day ibs. per da ibs. per da lbs. per da	y y y y y y y y y	127.7462 192.4615 127.7462 127.7462 4.255902 123.4903	Ibs. per day Ibs. per day mg/I	

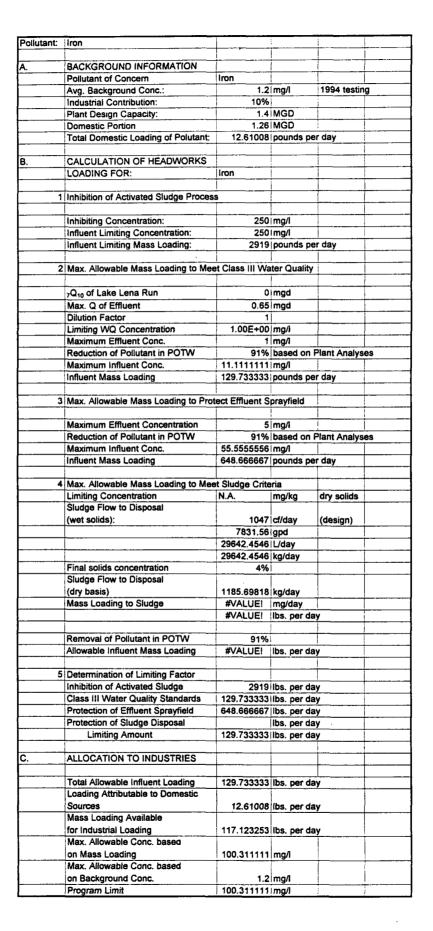
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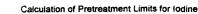
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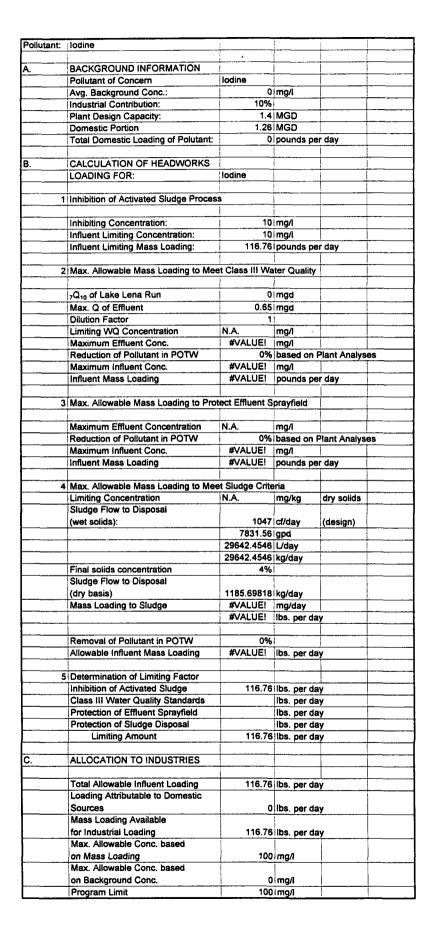
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#### Calculation of Pretreatment Limits for Lead



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ollutar	t: Lead	,	 •		
	BACKGROUND INFORMATION				
· · · · · · · · · · · · · · · · · · ·	Pollutant of Concern	Lead			
	Avg. Background Conc.:	0.0105	mg/l	Previous T	esting
	Industrial Contribution:	10%			
	Plant Design Capacity:	1.4	MGD		
	Domestic Portion	1.26	MGD		
	Total Domestic Loading of Polutant:	0.1103382	pounds per	day	ļ
l	CALCULATION OF HEADWORKS				
	LOADING FOR:	Lead			
	A Labilities of Astronomy Churdren Departs				
	1 Inhibition of Activated Sludge Proces	19	1		
	Inhibiting Concentration:	0.5	mg/l		
	Influent Limiting Concentration:		mg/l		
	Influent Limiting Mass Loading:		pounds per	r dav	
	millent Emiling miller Estering.		poundo po		
	2 Max. Allowable Mass Loading to Me	et Class III Wa	ter Quality		1
		1			<u> </u>
	<sub>7</sub> Q <sub>10</sub> of Lake Lena Run	0	mgd		1
	Max. Q of Effluent		mgd		<u> </u>
	Dilution Factor	1			
	Limiting WQ Concentration	1.29E-02			1
	Maximum Effluent Conc.	0.0129	mg/l		1
	Reduction of Pollutant in POTW	57%	based on F	Plant Analys	ies
	Maximum Influent Conc.		mg/l		
	Influent Mass Loading	0.35028	pounds per	r day	
	3 Max. Allowable Mass Loading to Pro	tect Effluent S	prayfield		
					<u> </u>
	Maximum Effluent Concentration		mg/l	<u> </u>	
	Reduction of Pollutant in POTW		based on F	Plant Analys	ies
	Maximum Influent Conc.	11.627907		l. <u>.</u>	ļ
	Influent Mass Loading	135.767442	pounds pe	r day	
	4 Max. Allowable Mass Loading to Me Limiting Concentration		mg/kg	day solida	+
	Sludge Flow to Disposal	300	паулку	dry solids	<u> </u>
	(wet solids):	1047	cf/day	(design)	
		7831.56		(design)	
		29642.4546			
		29642.4546			1
	Final solids concentration	4%			1
	Sludge Flow to Disposal				
	(dry basis)	1185.69818	kg/day		
	Mass Loading to Sludge	355709.455	mg/day		
		0.78419706	libs. per da	y	
					İ.
	Removal of Pollutant in POTW	57%			
	Allowable Influent Mass Loading	1.37578432	libs. per da	y	
	5 Determination of Limiting Factor				
	Inhibition of Activated Sludge		libs. per da		<b></b>
	Class III Water Quality Standards		libs. per da		
	Protection of Effluent Sprayfield	135.767442	·····		÷
	Protection of Sludge Disposal Limiting Amount	1.37578432	<u> </u>		<u> </u>
		0.35028	libs. per da	<b>y</b>	+
<b>;</b> .	ALLOCATION TO INDUSTRIES				+
	ALCOATION TO INDUSTRIES	+	+		
	Total Allowable Influent Loading	0 35028	libs. per da	J V	<u>+</u>
	Loading Attributable to Domestic	0.00020		,	
	Sources	0,1103382	   bs. per da	v	
	Mass Loading Available			,	
	for Industrial Loading	0.2399418	l libs. per da	v	
	Max. Allowable Conc. based		1	í	
	on Mass Loading	0.2055	ima/l		1
	Max. Allowable Conc. based	+		<u> </u>	
		0.0105	ima/I		
	on Background Conc.				

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	Magnesium				
	BACKGROUND INFORMATION				
	Pollutant of Concern	Magnesium	·		
	Avg. Background Conc.:		mg/l	Previous T	esting
	Industrial Contribution:	10%			]
	Plant Design Capacity:	1.4	MGD		
	Domestic Portion	1.26	MGD		
	Total Domestic Loading of Polutant:	83.331612	pounds per	r day	
<u>.                                    </u>	CALCULATION OF HEADWORKS				
	LOADING FOR:	Magnesium			
		1			
1	Inhibition of Activated Sludge Proces	S			-
	Inhibiting Concentration:	-	mg/l		· · · ·
	Influent Limiting Concentration:		mg/l	 	
	Influent Limiting Mass Loading:	583.8	pounds per	r day	
	Max. Allowable Mass Loading to Mee		ton Quality	[	
	Max. Allowable mass Loading to mee	er Class III vva	ter Quality		
	O of Lake Land But	0	med		
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1 N A			·····
	Limiting WQ Concentration Maximum Effluent Conc.	N.A. #VALUE!	mg/l		<u> </u>
	Reduction of Pollutant in POTW		based on F	lant Analus	
	Maximum Influent Conc.	#VALUE!		hant Analys	es
	Influent Mass Loading		pounds per	. dou	
	indent mass coading	#VALUE!	pounds per	lay	
	Max. Allowable Mass Loading to Pro	lact Effluent S	nraufield		
	Niax, Allowable Mass Loading to FIG				
	Maximum Effluent Concentration	N.A.	mg/l		-
	Reduction of Pollutant in POTW		based on F	lant Analys	1
····	Maximum Influent Conc.		mg/l		
	Influent Mass Loading		pounds per	r dav	
			peanee pe		
	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria	<u> </u>	<u> </u>
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal			.,,	
	(wet solids):	1047	cf/day	(design)	
		7831.56	gpd	<u> </u>	
		29642.4546	L/day		
		29642.4546	kg/day		1
	Final solids concentration	4%			
	Sludge Flow to Disposal			1	1.
	(dry basis)	1185.69818	kg/day		1
	Mass Loading to Sludge	#VALUE!	mg/day		
		#VALUE!	lbs. per da	ý	1
		1		İ	i
	Removal of Pollutant in POTW	0%			
	Allowable Influent Mass Loading	#VALUE!	lbs. per da	y	
	Determination of Limiting Factor				
	Inhibition of Activated Sludge		lbs. per da		
	Class III Water Quality Standards		lbs. per da	у	
	Protection of Effluent Sprayfield		lbs. per da	у	
	Protection of Sludge Disposal	1	lbs. per da		
	Limiting Amount	583.8	lbs. per da	<u>у</u>	
		<u> </u>			L
C	ALLOCATION TO INDUSTRIES				<u> </u>
		1			
	Total Allowable Influent Loading	583.8	ibs. per da	у	ļ
	Loading Attributable to Domestic				
	Sources	83.331612	lbs. per da	у	L
	Mass Loading Available				
	for Industrial Loading	500.468388	lbs. per da	<u>y</u>	
	Max. Allowable Conc. based				
	on Mass Loading	428.63	mg/l		
	Max. Allowable Conc. based				1
		7 0 2	mg/l	1	1
	on Background Conc.	7.93	mgn		

#### Calculation of Pretreatment Limits for Manganese

uant:	Manganese						·	
		<del>_</del>			<u> </u>			+
	BACKGROUND INFORMATION							
	Pollutant of Concern	Manganese			ļ			<u> </u>
	Avg. Background Conc.:		mg/i					
	Industrial Contribution:	10%				ļ		
	Plant Design Capacity:		MGD			<u>i</u>		
	Domestic Portion		MGD	1				
	Total Domestic Loading of Pollutant:	0	pounds pe	r day	1			1
	1	1			1			
	CALCULATION OF HEADWORKS						l	1
	LOADING FOR:	Manganese						i
		1	1		1			
	I Inhibition of Activated Sludge Process	3	T					
		1			1		-	1
	Inhibiting Concentration:	10	mg/l	·	1	i		- <u> </u>
	Influent Limiting Concentration:		mg/l		1			
	Influent Limiting Mass Loading:		pounds pe	r dav				<u> </u>
	Initident Liniting Wass Loading.	110.70	pounda pe	day				+
,	2 Max. Allowable Mass Loading to Mee	Class III Ma	ter Quality	· · · · ·		l		<u> </u>
	LIMAN. ANOWADIE WASS LOADING to Mee		iter Quanty		+	<u> </u>		<u> </u>
	O effete i see Due				<u>↓                                     </u>	<u> </u>	· · · · · · · · ·	+
	7Q10 of Lake Lena Run		mgd		<u> </u>		<u> </u>	
	Max. Q of Effluent		mgd		ļ	ļ		
	Dilution Factor	1			L	<u> </u>		<b>_</b>
	Limiting WQ Concentration	N.A.	mg/l		<u> </u>	4		
	Maximum Effluent Conc.	#VALUE!	mg/l					
	Reduction of Pollutant in POTW	0%	based on l	Plant Analyses	T		l	1
	Maximum Influent Conc.	#VALUE!	<u> </u>		1	j	J	1
	Influent Mass Loading		pounds pe	r dav	1		<u>.</u>	<u> </u>
			pequae pe					+
	3 Max. Allowable Mass Loading to Prot	act Effluent S	nravfield			· · ·		
	that the wable made county to the	Long-term	prayneia		Short-term			
	Maximum Effluent Concentration		mg/l			mg/l		
	Reduction of Pollutant in POTW	33%				CERCLA 1	i Trootobilib:	) Chudu
		1					reatability	Suudy
	Maximum Influent Conc.	0.2985075			14.92537		1	
	Influent Mass Loading	3.4853731	pounds pe	r day	1/4.268/	pounds pe	r day	
			t				1	
			<u>.</u>		+		<b></b>	+
	4 Max. Allowable Mass Loading to Mee							<u> </u>
	Limiting Concentration	t Sludge Crite N.A.	eria mg/kg	dry solids				<u> </u>
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg					
	Limiting Concentration	N.A. 1047	mg/kg cf/day	dry solids (design)				
	Limiting Concentration Sludge Flow to Disposal	N.A.	mg/kg cf/day					
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047	mg/kg cf/day gpd					
	Limiting Concentration Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd L/day					
	Limiting Concentration Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.455	mg/kg cf/day gpd L/day kg/day					
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.455 29642.455	mg/kg cf/day gpd L/day kg/day					
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4%	mg/kg cf/day gpd L/day kg/day					
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982	mg/kg cf/day gpd L/day kg/day					
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE!	mg/kg cf/day gpd L/day kg/day	(design)				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! \$VALUE! 0%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design) y	Short-term			
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/kg cf/day gpd L/day kg/day kg/day lbs. per da ibs. per da ibs. per da	(design) y y y		lbs. per da		
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design) y y y				
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76	mg/kg cf/day gpd L/day kg/day kg/day lbs. per da ibs. per da ibs. per da	(design) y y y y	116.76	lbs. per da	y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76	mg/kg cf/day gpd L/day kg/day kg/day lbs. per da ibs. per da lbs. per da lbs. per da	(design) y y y y y y y y y y y y	116.76	lbs. per da lbs. per da	y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	116.76 174.2687	lbs. per da lbs. per da lbs. per da	y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731	mg/kg cf/day gpd l/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	116.76 174.2687	lbs. per da lbs. per da lbs. per da lbs. per da	y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731	mg/kg cf/day gpd l/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	116.76 174.2687	lbs. per da lbs. per da lbs. per da lbs. per da	y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731	mg/kg cf/day gpd l/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da libs. per da	(design) (design) y y y y y y y y y y y y y	116.76 174.2687	lbs. per da lbs. per da lbs. per da lbs. per da	y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (y	116.76 174.2687 116.76	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731	mg/kg cf/day gpd l/day kg/day mg/day libs. per da libs. per da libs. per da libs. per da libs. per da libs. per da	(design) (y	116.76 174.2687 116.76	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Since Class III Water Quality Standards Protection of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading S Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	N.A. 1047 7831.56 29642.455 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0	mg/kg cf/day gpd L/day kg/day ikg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0	mg/kg cf/day gpd L/day kg/day ikg/day ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da ibs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0 116.76	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0 0 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0 116.76	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based Max Allowable Conc. based	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0 3.4853731 0 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0 116.76 100	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	
	Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max Allowable Conc. based on Mass Loading	N.A. 1047 7831.56 29642.455 29642.455 4% 1185.6982 #VALUE! #VALUE! 0% #VALUE! Long-term 116.76 3.4853731 3.4853731 0 3.4853731 0 3.4853731	mg/kg cf/day gpd L/day kg/day mg/day lbs. per da lbs. per da	(design) (design) y y y y y y y y y y y y y y y y y y y	116.76 174.2687 116.76 116.76 0 116.76 100 0	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y	

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#### Calculation of Pretreatment Limits for Mercury



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	Mercury				i	1	
		· · ·					
٩.	BACKGROUND INFORMATION					·····	
	Pollutant of Concern	Mercury			<u> </u>		
	Avg. Background Conc.:	0.0001	ma/l	Assumed (	@ 1/2 of D.	<u>.</u>	
	Industrial Contribution:	10%				i l	
	Plant Design Capacity:		MGD			+	
	Domestic Portion		MGD				
	Total Domestic Loading of Polutant:	0.00105084		dev			
	Total Domestic Loading of Polutant.	0.00105064	pounus per	uay			
	CALCULATION OF USADIMORKS						
8.	CALCULATION OF HEADWORKS		· · · · ·				
	LOADING FOR:	Mercury					
1	Inhibition of Activated Sludge Process	9			L		
					-		
	Inhibiting Concentration:		mg/l				
	Influent Limiting Concentration:		mg/l				
	Influent Limiting Mass Loading:	1.1676	pounds per	day			
			1				
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality				
					1		
	7Q10 of Lake Lena Run	0	mgd				
	Max. Q of Effluent		mgd		<u> </u>	1	
	Dilution Factor	1				†	
	Limiting WQ Concentration	1.20E-05					1
	Maximum Effluent Conc.	0.000012		· · · · · · · · · · · · · · · · · · ·	<u> </u>		
	Reduction of Pollutant in POTW		based on F	lant Anolu		+	L . 1
		2.449E-05		ant Analys		7	
	Maximum Influent Conc.					· · · · · · · · · · · · · · · · · · ·	
	Influent Mass Loading	0.00028594	pounds per	day			
· · · · · ·			!			<u> </u>	
3	Max. Allowable Mass Loading to Prot	ect Effluent S	prayfield				
			ļ				
	Maximum Effluent Concentration		mg/l	<u> </u>		h	
	Reduction of Pollutant in POTW		based on F	lant Analys	185		
	Maximum Influent Conc.	#VALUE!	mg/l		1		
	Influent Mass Loading	#VALUE!	pounds per	day			
			l				
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	nia				
	Limiting Concentration		mg/kg	dry solids			
	Sludge Flow to Disposal			(design)			
		1047	cf/day	(design)			
	Sludge Flow to Disposal	1047 7831.56	cf/day gpd	(design)			
	Sludge Flow to Disposal	1047 7831.56 29642.4546	cf/day gpd L/day	(design)			
	Sludge Flow to Disposal (wet solids):	1047 7831.56 29642.4546 29642.4546	cf/day gpd L/day kg/day	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration	1047 7831.56 29642.4546	cf/day gpd L/day kg/day	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.4546 29642.4546 4%	cf/day gpd L/day kg/day	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818	cf/day igpd L/day kg/day kg/day	(design)			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691	cf/day gpd L/day kg/day kg/day mg/day				
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	1047 7831.56 29642.4546 29642.4546 4% 1185.69818	cf/day gpd L/day kg/day kg/day mg/day				
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783	cf/day gpd L/day kg/day kg/day mg/day lbs. per day				
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51%	cf/day gpd iL/day kg/day kg/day mg/day lbs. per day	y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783	cf/day gpd iL/day kg/day kg/day mg/day lbs. per day	y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51%	cf/day gpd iL/day kg/day kg/day mg/day lbs. per day	y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51%	cf/day gpd iL/day kg/day kg/day mg/day lbs. per day	y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301	cf/day gpd iL/day kg/day kg/day mg/day lbs. per day	y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	y y y y y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301	cf/day gpd iL/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
5	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594	cf/day gpd iL/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301	cf/day gpd iL/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
5 	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301	cf/day gpd iL/day kg/day mg/day lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301 0.00028594	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.08713301	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.00028594 0.00028594 0.00105084	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.00028594 0.00028594 0.00105084	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.00028594 0.00028594 0.00105084	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 1185.69818 20156.8691 0.04443783 0.08713301 1.1676 0.00028594 0.00028594 0.00028594 0.00105084 -0.0007649	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	1047 7831.56 29642.4546 29642.4546 4% 1185.69818 20156.8691 0.04443783 51% 0.08713301 1.1676 0.00028594 0.00028594 0.00028594 0.00105084	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y			
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	1047 7831.56 29642.4546 29642.4546 1185.69818 20156.8691 0.04443783 0.08713301 1.1676 0.00028594 0.00028594 0.00028594 0.00105084 -0.0007649	cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y y y			



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Calculation of Pretreatment Limits for Molybdenum

Pollutant:	Molybdenum	·····		ļ	ļ
<b>\</b>	BACKGROUND INFORMATION				
	Pollutant of Concern	Molybdenum			
	Avg. Background Conc.:		mg/l		
	Industrial Contribution:	10%			
	Plant Design Capacity:	· · · · · · · · · · · · · · · · · · ·	MGD MGD		
	Domestic Portion Total Domestic Loading of Polutant:				
	Total Domestic Loading of Polutant:	U	pounds per	day	
3.	CALCULATION OF HEADWORKS				
<b>.</b>	LOADING FOR:	Molybdenum			<u> </u>
	LUADING FOR.	Norybaenam			
1	Inhibition of Activated Sludge Process	s			
'	Annabition of Activated Studge 110003		·····		
	Inhibiting Concentration:	N.A.	mg/l		
	Influent Limiting Concentration:		mg/l	 	
	Influent Limiting Mass Loading:		pounds per	r dav	
			F F		
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
			· · ·		
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	N.A.	mg/i		
	Maximum Effluent Conc.	#VALUE!	mg/l		
	Reduction of Pollutant in POTW		based on F	lant Analys	es
	Maximum Influent Conc.	#VALUE!			
	Influent Mass Loading		pounds per	r dav	
3	Max. Allowable Mass Loading to Prot	ect Effluent S	oravfield		
	<b>_</b>				
	Maximum Effluent Concentration	0.01	mg/l		
	Reduction of Pollutant in POTW		based on P	lant Analys	es
	Maximum Influent Conc.		mg/l		
	Influent Mass Loading		pounds per	r dav	
4	Max. Allowable Mass Loading to Mee	t Sludge Crite	ria		
··	Limiting Concentration		mg/kg	dry solids	
	Sludge Flow to Disposal			ary condo	
	(wet solids):	1047	cf/day	(design)	
		7831.56		(accigit)	
,		29642.4546			
		29642.4546			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.69818	ko/dav		•
	(dry basis) Mass Loading to Sludge	1185.69818		 	
	(dry basis) Mass Loading to Sludge	21342.5673	mg/day		
			mg/day	y	
	Mass Loading to Sludge	21342.5673 0.04705182	mg/day lbs. per da	y	
	Mass Loading to Sludge Removal of Pollutant in POTW	21342.5673 0.04705182 50%	mg/day libs. per da		
	Mass Loading to Sludge	21342.5673 0.04705182	mg/day libs. per da		
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	21342.5673 0.04705182 50%	mg/day libs. per da		
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor	21342.5673 0.04705182 50% 0.09410365	Ing/day Ibs. per da Ibs. per da	y	
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	21342.5673 0.04705182 50% 0.09410365	Ibs. per da Ibs. per da Ibs. per da	y y y	
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	21342.5673 0.04705182 50% 0.09410365	mg/day lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	21342.5673 0.04705182 50% 0.09410365 0.23352	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	
5	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	21342.5673 0.04705182 50% 0.09410365 0.23352	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y	
5 	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365	mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365 0.09410365 0.09410365	Ibs. per da Ibs. per da	y y y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365	Ibs. per da Ibs. per da	y y y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365 0.09410365 0.09410365	Ibs. per da Ibs. per da	y y y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	21342.5673 0.04705182 50% 0.09410365 0.23352 0.09410365 0.09410365 0.09410365 0.09410365	Ibs. per da Ibs. per da	y y y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	21342.5673 0.04705182 50% 0.09410365 0.09410365 0.09410365 0.09410365 0.09410365 0.09410365	mg/day lbs. per day lbs. per day	y y y y y y y y	
	Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	21342.5673 0.04705182 50% 0.09410365 0.09410365 0.09410365 0.09410365 0.09410365 0.09410365	mg/day lbs. per day lbs. per day	y y y y y y y y	

Monthly ars 2

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#### Calculations of Pretreatment Limits for Nickel



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Pollutant:	Nickel					
A	BACKGROUND INFORMATION					
	Pollutant of Concern	Nickel				
<u>.</u>	Avg. Background Conc.:	÷	mg/l	1994 Testir	ıg	
	Industrial Contribution:	10%				
	Plant Design Capacity:		MGD			
	Domestic Portion		MGD			
	Total Domestic Loading of Polutant:	0.210168	pounds per	day		
<u> </u>	ON OUR ATION OF HEADINGBUS					
В.	CALCULATION OF HEADWORKS	Nickel				
	LUADING FOR.	NICKEI	-			
1	Inhibition of Activated Sludge Process	s				
		Ţ	}			
	Inhibiting Concentration:	0.5	mg/l			
	Influent Limiting Concentration:		mg/l			
	Influent Limiting Mass Loading:		pounds per	r dav		
		1	· · · · · · · · · · · · · · · · · · ·			
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality			
		1	[			
	7Q10 of Lake Lena Run	0	mgd			
	Max, Q of Effluent		mgd			<u> </u>
	Dilution Factor	1	• ···			
	Limiting WQ Concentration	3.99E-01		<u> </u>		
	Maximum Effluent Conc.	0.3994		· · · · · · · · · · · · · · · · · · ·		
	Reduction of Pollutant in POTW			Plant Analys	es	
	Maximum Influent Conc.	0.58735294	mg/l			
	Influent Mass Loading	6.85793294	pounds per	r day		
3	Max. Allowable Mass Loading to Prot	tect Effluent S	prayfield			
	Maximum Effluent Concentration	0.2	mg/l			
	Reduction of Pollutant in POTW	32%	based on F	Plant Analys	es	
	Maximum Influent Conc.	0.29411765	mg/l			
	Influent Mass Loading	3.43411765	pounds per	r day		
4	Max. Allowable Mass Loading to Mee	et Sludge Crite	eria			
	Limiting Concentration	100	mg/kg	dry solids	(DEP LIMI	<u>n</u>
	Sludge Flow to Disposal					
	(wet solids):		cf/day	(design)		
		7831.56	gpd	1		
		+				
		29642.4546				
		29642.4546 29642.4546	kg/day			
	Final solids concentration	29642.4546	kg/day			
	Sludge Flow to Disposal	29642.4546 29642.4546 4%	kg/day			
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818	kg/day kg/day			
	Sludge Flow to Disposal	29642.4546 29642.4546 4% 1185.69818 118569.818	kg/day kg/day Img/day			
	Sludge Flow to Disposal (dry basis)	29642.4546 29642.4546 4% 1185.69818	kg/day kg/day Img/day			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902	kg/day kg/day Img/day Ibs. per day			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32%	kg/day kg/day Img/day Ibs. per day			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902	kg/day kg/day Img/day Ibs. per day			
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32%	kg/day kg/day Img/day Ibs. per day			
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194	kg/day kg/day Img/day Ibs. per day Ibs. per day	y		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838	kg/day kg/day Img/day Ibs. per day Ibs. per day Ibs. per day	y		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294	kg/day kg/day Img/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	y y y		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 29642.4546 4% 1185.69818 1185.69818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765	kg/day kg/day Img/day Ibs. per day Ibs. per day Ibs. per day Ibs. per day Ibs. per day	y y y y y		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194	kg/day kg/day img/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	y y y y y y		
5	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	29642.4546 29642.4546 4% 1185.69818 1185.69818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765	kg/day kg/day img/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194	kg/day kg/day img/day libs. per day libs. per day libs. per day libs. per day libs. per day	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194	kg/day kg/day img/day libs. per day libs. per day libs. per day libs. per day libs. per day	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194 0.81687194	kg/day kg/day img/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194	kg/day kg/day img/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194 0.81687194 0.81687194	kg/day kg/day img/day ibs. per day lbs. per day	y y y y y y		
5 C.	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194 0.81687194 0.81687194	kg/day kg/day img/day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day ibs. per day	y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 0.81687194 0.81687194 0.81687194	kg/day kg/day img/day ibs. per day ibs. per day	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Arnount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194 0.81687194 0.81687194	kg/day kg/day img/day ibs. per day ibs. per day	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Arnount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194 0.81687194 0.81687194 0.210168 0.60670394	kg/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max, Allowable Conc. based on Mass Loading	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 0.81687194 0.81687194 0.81687194	kg/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y		
	Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Arnount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	29642.4546 29642.4546 4% 1185.69818 118569.818 0.26139902 32% 0.81687194 5.838 6.85793294 3.43411765 0.81687194 0.81687194 0.81687194 0.81687194 0.210168 0.60670394 0.51961626	kg/day kg/day mg/day lbs. per day lbs. per day	y y y y y y y y		

.60? Monthly avs?

#### Calculations of Pretreatment Limits for Phenols

Phenois	,			
	· · · · ·			 
BACKGROUND INFORMATION				
Pollutant of Concern	Phenois			
Avg. Background Conc.:		-	Previous	
Plant Design Capacity:				
Domestic Portion	1.26	MGD		
Total Domestic Loading of Polutant:	0.1366092	pounds per	day	
CALCULATION OF HEADWORKS				
LOADING FOR:	Phenois			
inhibition of Activated Sludge Process	S			1
· · ·				
Inhibiting Concentration:	4	mg/l		
		-		-
			dav	
		F F -		1
Max Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
Max. Allowable Mass Coading to Mice		ter quanty		<u> </u>
O of Lake Lana Bus	0	mad		
		-		
	+			ļ
				ļ
Reduction of Pollutant in POTW	78%	based on F	Plant Analys	es
Maximum Influent Conc.	0.45454545	mg/l		
Influent Mass Loading	5.30727273	pounds per	r day	
Max. Allowable Mass Loading to Prot	ect Effluent S	prayfield		<u> </u>
	1			
Maximum Effluent Concentration	N.A.	ma/l		<u> </u>
			lant Analys	88
			r dav	
Indent Wass Loading	#VALUE:	pounds per	uay	
Afen Allements Afens I				
	· · · · · · · · · · · · · · · · · · ·		4. 61	
	N.A.	mg/kg	dry solids	
-	_			
(wet solids):			(design)	
	م ، ، ، ، ، ، ، ،			<u> </u>
	4%			
Sludge Flow to Disposal				
(dry basis)	1185.69818	kg/day		
Mass Loading to Sludge	#VALUE!	mg/day		
	- · · · · ·		y	
	1	······	<u> </u>	
Removal of Pollutant in POTW	78%			
				1
			V.	
Allowable Influent Mass Loading		lbs. per da	ý	
Allowable Influent Mass Loading			y	
Allowable Influent Mass Loading Determination of Limiting Factor	#VALUE!	lbs. per da		
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	#VALUE! 46.704	lbs. per da lbs. per da	y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	#VALUE! 46.704 5.30727273	lbs. per da lbs. per da lbs. per da	y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	#VALUE! 46.704 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da	y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	#VALUEI 46.704 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	#VALUE! 46.704 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	#VALUEI 46.704 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	#VALUEI 46.704 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	#VALUEI 46.704 5.30727273 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	#VALUEI 46.704 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	#VALUEI 46.704 5.30727273 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	#VALUEI 46.704 5.30727273 5.30727273 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	#VALUEI 46.704 5.30727273 5.30727273 5.30727273	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	#VALUEI 46.704 5.30727273 5.30727273 5.30727273 0.1366092	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	#VALUEI 46.704 5.30727273 5.30727273 5.30727273	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	#VALUE! 46.704 5.30727273 5.30727273 5.30727273 0.1366092 5.17066353	Ibs. per da Ibs. per da	y y y y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	#VALUEI 46.704 5.30727273 5.30727273 5.30727273 0.1366092	Ibs. per da Ibs. per da	y y y y y y y y	
Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	#VALUE! 46.704 5.30727273 5.30727273 5.30727273 0.1366092 5.17066353	Ibs. per da Ibs. per da	y y y y y y y y	
	Industrial Contribution: Plant Design Capacity: Domestic Portion Total Domestic Loading of Polutant: CALCULATION OF HEADWORKS LOADING FOR: Inhibition of Activated Sludge Proces Inhibiting Concentration: Influent Limiting Concentration: Influent Limiting Concentration: Influent Limiting Mass Loading: Max. Allowable Mass Loading to Mee PG <sub>10</sub> of Lake Lena Run Max. Q of Effluent Dilution Factor Limiting WQ Concentration Maximum Effluent Conc. Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Prot Maximum Effluent Conc. Influent Mass Loading Max. Allowable Mass Loading to Prot Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	Industrial Contribution:       10%         Plant Design Capacity:       1.4         Domestic Portion       1.26         Total Domestic Loading of Polutant:       0.1366092         CALCULATION OF HEADWORKS       Influent:         LOADING FOR:       Phenols         Inhibition of Activated Sludge Process       Inhibition of Activated Sludge Process         Inhibiting Concentration:       4         Influent Limiting Concentration:       4         Influent Limiting Mass Loading:       46.704         Max. Allowable Mass Loading to Meet Class III Wa       0         Max. Allowable Mass Loading to Meet Class III Wa       0         Max. Q of Effluent       0.65         Dilution Factor       1         Limiting WQ Concentration       1.00E-01         Maximum Effluent Conc.       0.45454545         Influent Mass Loading       5.30727273         Max. Allowable Mass Loading to Protect Effluent S       1         Maximum Influent Conc.       #VALUE!         Influent Mass Loading       #VALUE!         Maximum Influent Conc.       #VALUE!         Maximum Influent Conc.       #VALUE!         Maximum Influent Conc.       #VALUE!         Max. Allowable Mass Loading to Meet Sludge Crite       29642.4546 </td <td>Industrial Contribution:       10%         Plant Design Capacity:       1.4 MGD         Domestic Portion       1.26 MGD         Total Domestic Loading of Polutant:       0.1366092 pounds per         CALCULATION OF HEADWORKS      </td> <td>Industrial Contribution:       10%         Plant Design Capacity:       1.4 MGD         Domestic Portion       1.26 MGD         Total Domestic Loading of Polutant:       0.1366092 pounds per day         CALCULATION OF HEADWORKS      </td>	Industrial Contribution:       10%         Plant Design Capacity:       1.4 MGD         Domestic Portion       1.26 MGD         Total Domestic Loading of Polutant:       0.1366092 pounds per         CALCULATION OF HEADWORKS	Industrial Contribution:       10%         Plant Design Capacity:       1.4 MGD         Domestic Portion       1.26 MGD         Total Domestic Loading of Polutant:       0.1366092 pounds per day         CALCULATION OF HEADWORKS

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# Calculation of Pretreatment Limits for Selenium



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Pollutant:	Selenium		1		
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۹	BACKGROUND INFORMATION		l		
	Pollutant of Concern	Selenium			
	Avg. Background Conc.:		mg/l		
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD	<u> </u>	
	Total Domestic Loading of Polutant:	0	pounds per	day	
3	CALCULATION OF HEADWORKS				
	LOADING FOR:	Selenium			
		 	ļ		
1	Inhibition of Activated Sludge Proces	5	 		
		NI A			
	Inhibiting Concentration:		mg/l		ļ
	Influent Limiting Concentration:	N.A.	mg/l		
	Influent Limiting Mass Loading:	#VALUE!	pounds per	day	
		Clean III Ma	ton Quality		
2	Max. Allowable Mass Loading to Mee		tter Quality		
	O of Lake Land Burn	-	mad	·	
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd		<u> </u>
	Dilution Factor	1 5.00E-03			
	Limiting WQ Concentration				
	Maximum Effluent Conc.	0.005		lant Arabia	
	Reduction of Pollutant in POTW		based on P	lant Analys	es
	Maximum Influent Conc.	0.00500501	pounds per	dou	
	Influent Mass Loading	0.0504	pounds per	uay	
	Max. Allowable Mass Loading to Prot	Loct Effluent S	oroutiold		
	Max. Allowable Mass Loading to Pro	BCI Ellident S	praynetu		
	Maximum Cffluent Consectation	0.02			<u> </u>
	Maximum Effluent Concentration		mg/l	lant Anolue	00
	Reduction of Pollutant in POTW	0%	based on F	lant Analys	es
	Reduction of Pollutant in POTW Maximum Influent Conc.	0% 0.02002002	based on F mg/l		es
	Reduction of Pollutant in POTW	0%	based on F mg/l		es
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading	0% 0.02002002 0.23375375	based on F Img/I pounds per		es
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee	0% 0.02002002 0.23375375 at Sludge Crite	based on F Img/I pounds per eria	day	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration	0% 0.02002002 0.23375375 at Sludge Crite	based on F Img/I pounds per		
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0% 0.02002002 0.23375375 st Sludge Crite	based on F Img/I pounds per mg/kg	day dry solids	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration	0% 0.02002002 0.23375375 at Sludge Crite 36 1047	based on F Img/I pounds per mg/kg cf/day	day	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0% 0.02002002 0.23375375 at Sludge Crite /36 / 1047 7831.56	based on F mg/l pounds per mg/kg cf/day gpd	day dry solids	65
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal	0% 0.02002002 0.23375375 th Sludge Crite 36 1047 7831.56 29642.4546	based on F mg/ pounds per ma mg/kg cf/day gpd L/day	day dry solids	es
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids):	0% 0.02002002 0.23375375 at Sludge Crite /36 / 1047 7831.56	based on F mg/l pounds per ma mg/kg cf/day gpd L/day kg/day	day dry solids	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration	0% 0.02002002 0.23375375 st Sludge Crite 36 	based on F mg/l pounds per ma mg/kg cf/day gpd L/day kg/day	day dry solids	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0% 0.02002002 0.23375375 at Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 4%	based on F mg/l pounds per ma mg/kg cf/day lgpd L/day kg/day	day dry solids	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0% 0.02002002 0.23375375 tt Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	based on F mg/l pounds per mg/kg cf/day igpd L/day kg/day kg/day	day dry solids	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	0% 0.02002002 0.23375375 at Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 42685.1346	based on F mg/l pounds per mg/kg cf/day igpd L/day kg/day kg/day	day dry solids (design)	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0% 0.02002002 0.23375375 at Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 42685.1346	based on F mg/l pounds per mg/kg cf/day lgpd L/day kg/day kg/day mg/day	day dry solids (design)	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	0% 0.02002002 0.23375375 at Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 42685.1346	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day	day dry solids (design)	
4	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	0% 0.02002002 0.23375375 st Sludge Crite 36 0 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day	dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	0% 0.02002002 0.23375375 st Sludge Crite 36 0 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day	dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	0% 0.02002002 0.23375375 st Sludge Crite 36 0 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day	dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	0% 0.02002002 0.23375375 st Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day	day dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0% 0.02002002 0.23375375 10 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day	day dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	0% 0.02002002 0.23375375 tt Sludge Crite 76 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036	based on F mg/l pounds per mg/kg cf/day lgpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) /	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0% 0.02002002 0.23375375 st Sludge Crite 36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338	based on F mg/l pounds per mg/kg cf/day igpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0% 0.02002002 0.23375375 st Sludge Crite 36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal	0% 0.02002002 0.23375375 st Sludge Crite 36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	0% 0.02002002 0.23375375 st Sludge Crite 36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal	0% 0.02002002 0.23375375 st Sludge Crite 36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design)	
	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	0% 0.02002002 0.23375375 st Sludge Crite 36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036	based on F mg/l pounds per mg/kg cf/day lgpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	0% 0.02002002 0.23375375  tt Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036 0.05843844	based on F mg/l pounds per mg/kg cf/day lgpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	dry solids (design) (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0% 0.02002002 0.23375375 at Sludge Crite (36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036 0.05843844 0.05843844	based on F mg/l pounds per mg/kg cf/day igpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) (design) / /	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0% 0.02002002 0.23375375 at Sludge Crite (36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036 0.05843844 0.05843844	based on F mg/l pounds per mg/kg cf/day lgpd L/day kg/day kg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	day dry solids (design) (design) / /	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0% 0.02002002 0.23375375 st Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036 0.05843844 0.2338 0.05843844 0.0 0	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc, Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0% 0.02002002 0.23375375 at Sludge Crite (36 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036 0.05843844 0.05843844	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc, Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0% 0.02002002 0.23375375 et Sludge Crite 36 29642.4546 29642.4546 29642.4546 29642.4546 0.09410 0% 94.1036 0.05843844 0.05843844 0 0.05843844	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc. Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0% 0.02002002 0.23375375 st Sludge Crite 36 1047 7831.56 29642.4546 29642.4546 29642.4546 4% 1185.69818 42685.1346 0.09410 0% 94.1036 0.0584 0.2338 94.1036 0.05843844 0.2338 0.05843844 0.0 0	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) (design)	
5	Reduction of Pollutant in POTW Maximum Influent Conc, Influent Mass Loading Max. Allowable Mass Loading to Mee Limiting Concentration Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0% 0.02002002 0.23375375 1 Sludge Crite 1047 7831.56 29642.4546 29642.4546 29642.4546 0.09410 0% 94.1036 0.0584 0.05843844 0 0.05843844 0 0.05843844 0	based on F mg/l pounds per mg/kg cf/day gpd L/day kg/day kg/day lbs. per day lbs. per day	day dry solids (design) (design)	

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#### Calculation of Pretreatment Limits for Silver



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	it: Silver				
Ā	BACKGROUND INFORMATION		<u> </u>		
•.	Pollutant of Concern	Silver			·-·
	Avg. Background Conc.:	0.0001	ima/l	detection li	mit
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		
	Domestic Portion		MGD		
	Total Domestic Loading of Polutant:	0.00105084		dav	
	Total Bonnobilo Zodding of Foldania		P		
<b>B</b> .	CALCULATION OF HEADWORKS			· · · -	
	LOADING FOR:	Silver			
	1 Inhibition of Activated Sludge Proces	S			1
	Inhibiting Concentration:	0.25	mg/l		
	Influent Limiting Concentration:		mg/i		<u> </u>
	Influent Limiting Mass Loading:		pounds per	dav	
	inderit Einning mass County.		peanae pe		<u>-</u>
	2 Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
	2 Max. Allowable Made Coading to Mee		iter deatanty		
	7Q10 of Lake Lena Run		mgd		
	Max. Q of Effluent		mgd		
	Dilution Factor	0.65			
	-			<u> </u>	· · · · · · · · · · · · · · · · · · ·
	Limiting WQ Concentration	7.00E-05			
	Maximum Effluent Conc. Reduction of Pollutant in POTW	0.00007		rootobilib.	L.
	Maximum Influent Conc.		CERCLA T	reatability 3	
		0.000175	pounds per		
	Influent Mass Loading	0.0020433	pounds per	day	
		Effect of C			
	3 Max. Allowable Mass Loading to Prot	ect Emuent S	praymeid		
	The second secon				<b> </b>
<u></u>	Maximum Effluent Concentration		mg/l		
	Reduction of Pollutant in POTW		based on F	lant Analys	es
	Maximum Influent Conc.	#VALUE!			ļ
	Influent Mass Loading	#VALUE!	pounds per	day	
	4 Max. Allowable Mass Loading to Mee	t Sludge Crite	ma		
	Limiting Concentration		mg/kg	dry solids	
	Sludge Flow to Disposal	N.A.	mg/kg		
		N.A. 1047	mg/kg cf/day	dry solids (design)	
	Sludge Flow to Disposal	N.A. 1047 7831.56	mg/kg cf/day gpd		
	Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day		
	Sludge Flow to Disposal (wet solids):	N.A. 1047 7831.56 29642.4546 29642.4546	mg/kg cf/day gpd L/day kg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration	N.A. 1047 7831.56 29642.4546	mg/kg cf/day gpd L/day kg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4%	mg/kg cf/day gpd L/day kg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818	mg/kg cf/day gpd L/day kg/day kg/day		
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis)	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUEI #VALUEI	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUEI #VALUEI 60%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUEI #VALUEI 60%	mg/kg cf/day gpd L/day kg/day kg/day mg/day Ibs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUEI #VALUEI 60%	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per da	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE!	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919	mg/kg cf/day gpd L/day kg/day kg/day mg/day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day lbs. per day	(design)	
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 2.919 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 2.919 0.0020433 0.0020433 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 60% #VALUE! 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. pased	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0.0020433 0.0020433 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
C.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. pased on Mass Loading	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! #VALUE! 2.919 0.0020433 0.0020433 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	
c.	Sludge Flow to Disposal (wet solids): Final solids concentration Sludge Flow to Disposal (dry basis) Mass Loading to Sludge Removal of Pollutant in POTW Allowable Influent Mass Loading 5 Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. pased	N.A. 1047 7831.56 29642.4546 29642.4546 4% 1185.69818 #VALUE! #VALUE! 0.0020433 0.0020433 0.0020433 0.0020433	mg/kg cf/day gpd L/day kg/day mg/day lbs. per day lbs. per day	(design)	

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#### Calculation of Pretreatment Limits for TDS



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	Total Dissolved Solids	¦			
۸.	BACKGROUND INFORMATION				
<u>.                                    </u>	Pollutant of Concern	Total Dissolv	ed Solids		
	Avg. Background Conc.:		mg/l	1994 Testi	na
	Industrial Contribution:	10%			
	Plant Design Capacity:		MGD		1
	Domestic Portion	1.26	MGD		
	Total Domestic Loading of Polutant:		pounds per	r day	
				· · · · ·	
3.	CALCULATION OF HEADWORKS				
	LOADING FOR:	Total Dissolv	ed Solids		
1	Inhibition of Activated Sludge Process	S			
					· · · · · ·
	Inhibiting Concentration:	N.A.	mg/l		
	Influent Limiting Concentration:	N.A.	mg/l		
	Influent Limiting Mass Loading:	#VALUE!	pounds per	r day	
		1			
2	Max. Allowable Mass Loading to Mee	t Class III Wa	ter Quality		
	7Q10 of Lake Lena Run	0	mgd		
	Max. Q of Effluent	0.65	mgd		
	Dilution Factor	1			
	Limiting WQ Concentration	N.A.	mg/l		
	Maximum Effluent Conc.	#VALUE!			
	Reduction of Pollutant in POTW		based on F	lant Analys	es
	Maximum Influent Conc.	#VALUE!	mg/l		
	Influent Mass Loading	#VALUE!	pounds per	r day	
3	Max. Allowable Mass Loading to Prot	ect Effluent S	prayfield		
	Maximum Effluent Concentration	500	mg/l		
	Reduction of Pollutant in POTW	0%	based on F	lant Analys	es
	Maximum Influent Conc.	500.500501			1
	Influent Mass Loading	5843.84384	pounds per	day	
4	Max. Allowable Mass Loading to Mee		· · · · · · · · · · · · · · · · · · ·		
	Limiting Concentration	N.A.	mg/kg	dry solids	
	Sludge Flow to Disposal	{			ļ
	(wet solids):		cf/day	(design)	
		7831.56			ļ
		29642.4546			
		29642.4546			
	Final solids concentration	4%			
	Sludge Flow to Disposal				
	(dry basis)	1185.69818			ļ
	Mass Loading to Sludge	#VALUE!	mg/day	L	<u> </u>
		45 4 4 4 4 4 4 4 4	n ·		1
		#VALUE!	lbs. per da	1	
	Removal of Pollutant in POTW	0%			
	Removal of Pollutant in POTW Allowable Influent Mass Loading	0%			
	Allowable Influent Mass Loading	0%			
5	Allowable Influent Mass Loading Determination of Limiting Factor	0% #VALUE!	lbs. per da	/	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge	0% #VALUE!	lbs. per da lbs. per da	y 	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards	0% #VALUE!	lbs. per da lbs. per da lbs. per da	y 	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0% #VALUE!	lbs. per da lbs. per da lbs. per da lbs. per da	y y y y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	0% #VALUE! 5843.84384	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield	0% #VALUE!	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount	0% #VALUE! 5843.84384	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal	0% #VALUE! 5843.84384	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y	
5	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES	0% #VALUE! 5843.84384 5843.84384	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading	0% #VALUE! 5843.84384	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic	0% #VALUEI 5843.84384 5843.84384 5843.84384	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources	0% #VALUEI 5843.84384 5843.84384 5843.84384	lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da lbs. per da	y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available	0% #VALUE! 5843.84384 5843.84384 5843.84384 4203.36	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading	0% #VALUEI 5843.84384 5843.84384 5843.84384	Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da Ibs. per da	y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0% #VALUE! 5843.84384 5843.84384 5843.84384 4203.36 1640.48384	Ibs. per da Ibs. per da	y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Studge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based on Mass Loading	0% #VALUE! 5843.84384 5843.84384 5843.84384 4203.36	Ibs. per da Ibs. per da	y y y y y y y y	
	Allowable Influent Mass Loading Determination of Limiting Factor Inhibition of Activated Sludge Class III Water Quality Standards Protection of Effluent Sprayfield Protection of Sludge Disposal Limiting Amount ALLOCATION TO INDUSTRIES Total Allowable Influent Loading Loading Attributable to Domestic Sources Mass Loading Available for Industrial Loading Max. Allowable Conc. based	0% #VALUE! 5843.84384 5843.84384 5843.84384 4203.36 1640.48384 1405.00501	Ibs. per da Ibs. per da	y y y y y y y y	

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Pollutant: Zinc BACKGROUND INFORMATION A. Pollutant of Concern Zinc Past Testing Avg. Background Conc.: 0.145 mg/l Industrial Contribution: 10% 1.4 MGD Plant Design Capacity: **Domestic Portion** 1.26 MGD Total Domestic Loading of Polutant: 1.523718 pounds per day В. CALCULATION OF HEADWORKS LOADING FOR: Zinc 1 Inhibition of Activated Sludge Process Inhibiting Concentration: 0.29 mg/l (WEF reports values of 0.08 to 0.5 mg/l) Influent Limiting Concentration: 0.29 ma/l Influent Limiting Mass Loading: 3.38604 pounds per day 2 Max. Allowable Mass Loading to Meet Class III Water Quality 7Q10 of Lake Lena Run 0 mad Max. Q of Effluent 0.65 mgd **Dilution Factor** 1 2.68E-01 mg/l Limiting WQ Concentration Maximum Effluent Conc. 0.268 mg/i Reduction of Pollutant in POTW 77% based on Plant Analyses Maximum Influent Conc. 1.16521739 mg/l Influent Mass Loading 13.6050783 pounds per day 3 Max. Allowable Mass Loading to Protect Effluent Sprayfield Maximum Effluent Concentration 2 mg/i Reduction of Pollutant in POTW 77% based on Plant Analyses Maximum Influent Conc. 8.69565217 mg/l Influent Mass Loading 101.530435 pounds per day 4 Max. Allowable Mass Loading to Meet Sludge Criteria **Limiting Concentration** 2800 mg/kg dry solids (DEP LIMIT) Sludge Flow to Disposal (wet solids): 1047 cf/day (design) 7831.56 gpd 29642.4546 L/day 29642.4546 kg/day Final solids concentration 4% Sludge Flow to Disposal (dry basis) 1185.69818 kg/day Mass Loading to Sludge 3319954.92 mg/day 7.31917261 lbs. per day Removal of Pollutant in POTW Allowable influent Mass Loading 9.50541897 lbs. per day 5 Determination of Limiting Factor Inhibition of Activated Sludge 3.38604 lbs. per day Class III Water Quality Standards 13.6050783 lbs. per day Protection of Effluent Sprayfield 101.530435 lbs. per day Protection of Sludge Disposal 9.50541897 lbs. per day Limiting Amount 3.38604 lbs. per day C. ALLOCATION TO INDUSTRIES **Total Allowable Influent Loading** 3.38604 lbs. per day Loading Attributable to Domestic Sources 1.523718 lbs. per day Mass Loading Available for Industrial Loading 1.862322 lbs. per day Max. Aliowable Conc. based on Mass Loading 1.595 mg/i Max. Allowable Conc. based on Background Conc. 0.145 mg/l Program Limit 1.595 ma/l

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10/27/95

Pres. Auburndole Prog. document

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# Auburndale

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10/27 Local Limit Evaluation Summary

#### I. Pollutant Data:

				Calculated	
Parameter	Pass Through	Residuals Protection	Process Interference	Local Limit	
Antimony	70.7667			70.77 ×	
Aluminum	49.1000			49.1 -	
Arsenic	0.7373	0.2690	0.491	0.27	
Beryllium	0.0013			0.0013 -	
Boron	4.4400			4.44 P	os non
Cadmium	0.0516	0.1665	4.991	0.052 -	
Chromium	1.3641		9.64	1.36	
Cobolt	0.4550			0.46	
Copper	5.2800	2.8132	1.68	1.68	
Cyanide	0.0282		0.91	0.028	
Fluoride	7.3440			7.34 🦟	
Iron	100.3111			100	
lodine			100	100	
Lead	0.2055	1.0832	0.9055	0.21	
Magnesium			428.63	429	
Manganese	2.9851			2.99	
Mercury	No IU Allocation	0.0737	0.9991 No IU AI	llocation 🗶	
Molybdenum	0.2000	0.3367		0.2	
Nicke!	2.7612	2.7670	4.82	2.76	
Phenois (b)	No IU Allocation		No IU AI	location	
Selenium	0.0500	0.2486		0.05 -	
Silver	0.0009		2.4991	0.00086	
Vanadium					
Zinc	10.3472	6.8321	1.595	1.6	
тін					

# Auburndale 10/27 Local Limit Evaluation Criteria: Pass Through (Surface Water)

## I. Plant Data:

Qt =	1.4 MGD		
Qi =	0.14 MGD	 <u> Qni =</u>	1.26 MGD

Hardness: 300 mg/L CaCO3

## II. Pollutant Data:

)ata:				was		
	Safety			Hardness	Limit (a)	
Parameter	Factor (%)	<u> </u>	R(%)	Dependant	mg/L	Limit reference
Antimony	0	0.1	40		4.3	Auburndale(WQS)
Aluminum	0	0.1			5	Auburndale(sprayfield)
Arsenic	0	0.001	33		0.05	Auburndale(WQS)
Beryllium	0	0			0.00013	Auburndale(WQS)
Boron	0	0.34			0.75	Auburndale(sprayfield)
Cadmium	0	0.001	50	0.0027	0.00303	Auburndale(WQS)
Chromium	0	0.04	71		0.05	Auburndale(WQS)
Cobolt	0	0.005			0.05	Auburndale(sprayfield)
Copper	0	0.08	95	0.03	0.03	Auburndale(WQS)
Cyanide	0	0.01	56		0.0052	Auburndale(WQS)
Fluoride	0	0.405	9		1	Auburndale(sprayfield)
Iron	0	1.2	91		1	Auburndale(WQS)
lodine	0	0				
Lead	0	0.0105	57	0.0129	0.0129	Auburndale(WQS)
Magnesium	0	7.93				
Manganese	0	0	33		0.2	Auburndale(sprayfield)
Mercury	0	0.0001	51		0.000012	Auburndale(WQS)
Molybdenum	. 0	0	50		0.01	Auburndale(sprayfield)
Nickel	0	0.02	32	0.40	0.2	Auburndale(sprayfield)
Phenols (b)	0	0.013	78		0.001	Auburndale(WQS)
Selenium	0	0	0	~	0.005	Auburndale(WQS)
Silver	0	0.0001	60	) 0.00005	0.00007	Auburndale(WQS)
Vanadium	0	0	$\neg$			
Zinc	0	0.145	77	0.269	0.268	Auburndale(WQS)
TIH	O	0	0			

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#### III. Industrial Limit (Ci) Based on Prevention of Pass Through :

	Lt	Lni	S. Factor	Li	Ci
Parameter	lb/d	lb/d	lb/d	lb/d	mg/L
Antimony	83.678	1.051	0	82.627	70.77
Aluminum	58.380	1.051	0	57.329	49.10
Arsenic	0.871	0.011	0	0.861	0.74
Beryllium	0.002	0.000	0	0.002	0.00130
Boron	8.757	3.573	0	5.184	4.44
Cadmium	0.071	0.011	0	0.060	0.05
Chromium	2.013	0.420	0	1.593	1.36
Cobolt	0.584	0.053	0	0.531	0.46
Copper	7.006	0.841	0	6.165	5.28
Cyanide	0.138	0.105	0	0.033	0.03
Fluoride	12.831	4.256	0	8.575	7.34
Iron	129.733	12.610	0	117.123	100.31
lodine		0.000	0	0.000	
Lead	0.350	0.110	0	0.240	0.21
Magnesium		83.332	0	-83.332	
Manganese	3.485	0.000	0	3.485	2.99
Mercury	0.00029	1.05E-03	0	-0.001	No IU Allocation
Molybdenum	0.234	0.000	0	0.234	0.20
Nickel	3.434	0.210	0	3.224	2.76
Phenols (b)	0.053	0.137	0	-0.084	No IU Allocation
Selenium	0.058	0.000	0	0.058	0.05
Silver	0.002	0.001	0	0.001	0.00085
Vanadium		0.000	0	0.000	
Zinc	13.605	1.524	0	12.081	10.35
ТІН		0.000	0	0.000	

#### Notes:

- Qt = The total plant flow.
- Qi = The total industrial plant flow.
- Qni = The non-industrial plant flow including any contribution from inflow and infiltration.
- Cni = Representative concentrations representing non-industrial sources based on values provided by Auburndale.
  - R = Percent removal assumed for pass through of pollutants.
- Lt = Total allowable headworks loading based on evaluation criteria.
- Lni = Non-industrial headworks loading based on Cni and the difference between the total average plant flow and total industrial flows.
- Li = The headworks loading that can be allocated among industrial sources.
- Ci = The calculated local limit for industrial discharges based on a uniform allocation of the industrial flow.

# Local Limit Evaluation Criteria: Inhibition of Secondary Treatment

## I. Plant Data:

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Qt =	1.4 MGD			
Qi =	0.14 MGD	(	Qni =	1.26 MGD

## II. Pollutant Data:

	Safety			Limit
Parameter	Factor (%)	Cni	R(%) (a)	mg/L Limit reference (b)
Antimony		0.1	0	
Aluminum		0.1	0	
Arsenic	0	0.001	0	0.05 Auburndale
Beryllium		0	0	
Boron		0.34	0	
Cadmium	0	0.001	0	0.5 Prelim
Chromium	0	0.04	0	1.0 Prelim
Cobolt		0.005	0	
Copper	0	0.08	0	0.24 Auburndale
Cyanide	· <b>O</b>	0.01	0	0.1 Prelim
Fluoride		0.405	0	
Iron		1.2	0	250.0 Auburndale
lodine	0	0	0	10 Prelim
Lead	0	0.0105	0	0.1 Prelim
Magnesium		7.93	0	50.0 Auburndale
Manganese		0	0	10.0 Auburndale
Mercury	0	0.0001	0	0.1 Prelim
Molybdenum		0	0	
Nickel	0	0.02	0	0.5 Auburndale
Phenols		0.013	0	4.0 Auburndale
Selenium		0	0	
Silver	0	0.0001	0	0.25 Prelim
Vanadium		0	0	
Zinc	0	0.145	0	0.29 WEF/Auburndale
<u>TIH</u>		0	0	

#### III. Industrial Limits Based On Inhibition of Activated Sludge Process

•	Lt	Lni	S. Factor	Li	Ci	
Parameter	lb/d	lb/d	lb/d	lb/d	mg/L	
Antimony		1.051		-1.051		
Aluminum		1.051				
Arsenic	0.584	0.011	0	0.573	0.49	
Beryllium		0.000				
Boron		3.573				
Cadmium	5.838	0.011	0	5.827	4.99	
Chromium	11.676	0.420	0	11.256	9.64	
Cobolt		0.053				
Copper	2.802	0.841	0	1.962	1.68	
Cyanide	1.168	0.105	0	1.063	0.91	
Fluoride		4.256				
Iron		12.610				
lodine	116.760	0.000	0	116.760	100.00	
Lead	1.168	0.110	0	1.057	0.91	
Magnesium	583.800	83.332	0	500.468	428.63	
Manganese		0.000				
Mercury	1.168	0.001	0	1.167	1.00	
Molybdenum		0.000				
Nickel	5.838	0.210	0	5.628	4.82	
Phenols		0.137				
Selenium		0.000				
Silver	2.919	0.001	0	2.918	2.50	
Vanadium		0.000				
Zinc	3.386	1.524	0	1.862	1.60	
тін		0.000				

Notes:

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- Qt = The total plant flow.
- Qi = The total industrial plant flow.
- Qni = The non-industrial plant flow including any contribution from inflow and infiltration.
- Cni = Representative concentrations representing non-industrial sources based on values provided by Auburndale.
- R = Percent removal assumed prior to the activated sludge process.
- Lt = Total allowable headworks loading based on evaluation criteria.
- Lni = Non-industrial headworks loading based on Cni and the difference between the total average plant flow and total industrial flows.
- Li = The headworks loading that can be allocated among industrial sources.
- Ci = The calculated local limit for industrial discharges based on a uniform allocation of the industrial flow.
  - (a) Percent removal prior to the secondary treatment unit (activated sludge) assumed to be zero.
  - (b) Inhibition levels based on EPA's Prelim guidance document, PRELIM 4.0 User's Guide, May 1991.

# Local Limit Evaluation Criteria: Residuals Quality (Land Applications Standards)

## I. Plant Data:

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Qt =	1.4 MGD	Qni =	1.26 MGD
Qi =	0.14 MGD	Qs =	0.007832 MGD
fs =	0.04	Site =	acre

S.F. = 0 %

## II. Pollutant Data:

			Limit	
Parameter	Cni	<u>R(%)(a)</u>	mg/kg	Limit reference (b)
Antimony	0.1	40		
Aluminum	0.1			
Arsenic	0.001	33	41	40 CFR 503
Beryllium	0			
Boron	0.34			
Cadmium	0.001	50	39	40 CFR 503
Chromium	0.04	71		
Cobolt	0.005			
Copper	0.08	95	1500	40 CFR 503
Cyanide	0.01	56		
Fluoride	0.405	9		
Iron	1.2	91		
lodine	0			
Lead	0.0105	57	300	40 CFR 503
Magnesium	7.93			
Manganese	0	33		
Mercury	0.0001	51	17	40 CFR 503
Molybdenum	0	50	75	40 CFR 503
Nickel	0.02	32	420	40 CFR 503
Phenols	0.013	78		
Selenium	0	90	100	40 CFR 503
Silver	0.0001	60		
Vanadium	0			
Zinc	0.145	77	2800	40 CFR 503
ТІН	0_	0		

#### III. Industrial Limit (Ci) Based On Protection of Residuals Quality

	Lt	Lni	S. Factor	Li	Ci	
Parameter	. lb/d	ib/d	lb/d	lb/d	mg/L	
Antimony	0.000	1.051		-1.051		
Aluminum	#DIV/0!	1.051		#DIV/0!		
Arsenic	0.325	0.011	0.00	0.314	0.27	
Beryllium	#DIV/01	0.000		#DIV/0!		
Boron	#DIV/0!	3.573		#DIV/0!		
Cadmium	0.204	0.011	0.00	0.193	0.17	
Chromium	0.000	0.420		-0.420		
Cobolt	#DIV/0!	0.053		#DIV/0!		
Copper	4.125	0.841	0.00	3.285	2.81	
Cyanide	0.000	0.105		-0.105		
Fluoride	0.000	4.256		-4.256		
Iron	0.000	12.610		-12.610		
lodine	#DIV/0!	0.000		#DIV/0!		
Lead	1.375	0.110	0.00	1.265	1.08	
Magnesium	#DIV/0!	83.332		#DIV/0!		
Manganese	0.000	0.000		0.000		
Mercury	0.087	0.001	0.00	0.086	0.07	
Molybdenum	0.392	0.000	0.00	0.392	0.34	
Nickel	3.429	0.210	0.00	3.219	2.76	
Phenols	0.000	0.137		-0.137		
Selenium	0.290	0.000	0.00	0.290	0.25	
Silver	0.000	0.001		-0.001		
Vanadium	#DIV/0!	0.000		#DIV/0!		
Zinc	9.501	1.524	0.00	7.977	6.83	
т≀н	#DIV/0!	0.000		#DIV/0!		

#### Notes:

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Qt = The total plant flow.

- Qi = The total industrial plant flow.
- Qni = The non-industrial plant flow including any contribution from inflow and infiltration.

Qs = The total flow of residuals for disposal

- fs = The fraction of solids in the residuals for disposal
- Cni = Representative concentrations representing non-industrial sources.
- R = Percent removal assumed for activated sludge process.
- Lt = Total allowable headworks loading based on evaluation criteria.
- Lni = Non-industrial headworks loading based on Cni and the difference between the total average plant flow and total industrial flows.
- Li = The headworks loading that can be allocated among industrial sources.
- Ci = The calculated local limit for industrial discharges based on a uniform allocation of the industrial flow.